

Australia's Climate Change Plan

ANZ Research

July 2011

Key points – timetable and participation

- > **The Government has committed to reducing CO₂e emissions by at least 5% below 2000 levels by 2020 and by 80% by 2050.**
- > **There are four key elements to the Government's plan:**
 - A carbon price (a tax and then trading, plus an equivalent reduction in fuel excise tax rebate)
 - Renewable energy (\$10bn Clean Energy Finance Corporation, \$3.2bn Australian Renewable Energy Agency, Energy Security Fund)
 - Energy efficiency (Low Carbon Communities program)
 - Action on the land (Carbon Farming Initiative)
- > **Excluded from carbon trading: agriculture, smaller industrials, all households**
- > **Carbon price to be introduced on 1 July 2012, targeting the 500 largest polluters (electricity and manufacturing direct emissions and coal/LNG fugitive emissions):**
 - **"Fixed" carbon price from 1 July 2012 - 2015:** price per tonne of CO₂e initially \$23/t, rising by CPI+2.5% for the first two years (2013-14: \$24.15/t. \$25.40/t in 2014-15). \$9.2bn in free permits for selected EITE (emissions intensive trade exposed) industries for first 3 years.
 - From **1 July 2015:** price set by market. Treasury modelling assumes \$29/t real price on average to 2020 (assumed global carbon trading price).
 - Treasury modelling finds the average real price of carbon will need to jump to \$131/t by 2050 in order to achieve the 80% emissions reduction target.
- > **Process from here**
 - Draft legislation will be released for public comment by 31 July 2011
 - Legislation expected to be introduced into Parliament in second half of 2011
 - Legislation is likely to be passed either late 2011 or Q1 2012
 - Opposition policy remains opposed to carbon tax.

Key Points – assistance and transitional arrangements

- > **This announcement is accompanied by a large number of other, (mostly) offsetting tax changes affecting most industries, businesses & individuals**
- > **Households' cost of living (as measured by the CPI) expected to increase 0.7 per cent in 2012/13 (between 1/3 and ¼ the impact of the GST introduction)**
 - In 2012/13, this will raise household expenditure by \$9.90 per week on average. This will be more than offset by \$10.10 in new benefits that are to be provided.
 - Major price changes are (electricity: \$3.30 pw, gas \$1.50 pw, food \$0.80 pw)
- > **Revenue raised**
 - Tax and other measures raise \$27.3bn over three years to 2014/15 (including plan to reduce fuel tax credits for heavy on-road transport from 2014-15)
- > **Use of the revenue**
 - **50% to be spent on household assistance (\$14.9bn over four years)**
 - Household assistance is targeted to low income earners.
 - Income tax cuts (increased tax free threshold: \$6,000 now to \$18,200 in 2012/13 and \$19,400 in 2015/16, though the marginal rate increases from 15% to 19% and additionally the marginal rate for incomes above \$37,000 rises to 32.5% and then 33% from 30%)
 - Increased Family Tax Benefit, Up front pension and self-funded retiree lump sum payments
 - Low income supplement
 - Essential medical equipment payment
 - **40% to be provided on industry assistance and jobs support (much of it in the form of free permits, rather than a cash outlay)**
 - \$9.2bn Jobs and Competitiveness Program over four years
 - \$1.2bn Clean Technology Program
 - Increase in instant asset write off threshold for small business to \$6500

Key Points – macroeconomic impacts

> Budget

— The Carbon tax will be budget neutral over the medium term but will be a cost to the Budget (A\$4.3bn) over the next four years. The upfront payments to consumers will mean the 2011/12 budget will be worse off by A\$2.9bn (0.2% of GDP) as no revenue is raised this financial year. These changes to the federal budget are not significant and will have no implications for budget funding or markets.

> Growth

— Economic growth will be weaker by 0.1ppt a year over the next forty years. Australia's potential economic growth is expected to be 2.7% pa over this period¹. The carbon reforms imply that it will now be 2.6% pa. The impact of an ageing population is expected to be more significant taking 0.3ppt off growth over this period.

— There will be notable distributional consequences of this policy. Most notably in energy and manufacturing. Compensation payments favour low-income households which have a lower propensity to save. Hence, these payments are more likely to be spent and could provide a mild boost to consumer spending in the short-term.

> Inflation

— The main impact will be the direct increase in energy costs in the first year worth 0.7ppt to headline CPI and a small impact when the carbon price rises in 2014/15 and 2015/16. Overall the CPI impact is forecast by treasury to 0.9% over four years. The Treasury forecast assumes no second round impacts on prices nor any impact on inflation expectations. This suggests there maybe some small upside risk to this estimate although economic conditions will dictate the extent of this risk.

> Monetary Policy

— The RBA will factor in the CPI impact into their inflation forecasts probably with the release of the next Statement on Monetary Policy in August. They will treat the CPI impact as transitory and hence will 'look through it'. At a time of elevated inflation pressures, the carbon tax will add to RBA vigilance but is unlikely to result in higher interest rates.

¹ Intergenerational Report 2010, The Treasury

Practical implementation: collecting the tax

> Price mechanism 2012 to 2015: three year fixed price period

- 2012/13: \$23/t. 2013/14: \$24.15/t. 2014/15: \$25.40/t. One permit covers 1 tonne of CO₂e.
- Liable corporations will purchase permits from Government at the fixed price, up to the amount of their own emissions in that year. Permits are annual and cannot be saved or 'banked' for later use.
- Annual permits will also be issued for free to selected industries (e.g. steel and manufacturing)
- Annual permits that are issued free can be sold back to Government if they are unused in their compliance year, from 1 September each year until 1 February in the following year. The buy-back price will be the issuance price in that year, discounted by the RBA's BBB corporate bond rate

> Price mechanism from 2015: flexible trading

- Government will announce the maximum 'cap' of permits that will be issued each year, 5 years in advance (that is, each year, it will announce the number of permits in five years' time). The maximum annual permits on issue will reduce each year to match national emissions reductions targets.
- The majority of the annual permits will be auctioned by Government. Government will advance auction future vintage permits (i.e. for future compliance years) including during the fixed price period.
- Annual dated permits will be issued free of charge as an assistance measure to some participants. The number and distribution of these free permits will be determined and announced in advance. Free permits can be traded or returned to Government in the same manner as the auctioned permits.
- Unlimited 'banking' of permits (that is, saving unused annual permits for use in future years)
- Very limited 'borrowing' of permits from future years (that is, using permits for future years now)
- For the first three years (2015 to 2018) a trading price floor (minimum) and ceiling (maximum) will be set by Government in order to avoid large price fluctuations and establish regular trading patterns. The price ceiling will be set at \$20 above the expected international price for each year. The price floor will be set at \$15 and then rise by 4% p.a.

> Role of the Carbon Farming Initiative

- Agriculture is not included in tax or trading but farmers can participate through Australian Carbon Credit Units issued under the Carbon Farming Initiative (CFI), by trading Kyoto-compliant offset credits. CFI credits will be fully tradeable and bankable after 2015.

Practical implementation: measures for energy producers

> For electricity industry:

- Buy-out & closure of power plants with highest emissions. This will remove up to 2000 megawatts by 2020. This is only a small percentage of total electricity production but it will come from base-load power (coal) and hence is significant. Represents 1 or 2 major plants closing and/or others reducing.
- Mix of free permits, direct subsidy payments and discounted short-term loans for other generators “if commercial loans are unavailable”.
- New Clean Energy Finance Corporation (\$10bn) plus an Australian Renewable Energy Agency (\$3.2bn) to manage support for renewable energy
- \$40mn for a remote indigenous energy program (renewables in remote locations)

> For coal industry:

- \$23/t for fugitive CO₂e emissions = \$1.80/t of coal produced from mine sites will low methane gas leaks. Sites with higher fugitive emissions will face costs of up to \$25/t of coal produced.
- \$1.3bn for coal sector jobs and pollution reduction measures over 6 years.
- \$70mn coal mining abatement technology support.

> For gas:

- LNG projects will get effective assistance (free permits) worth 50% of carbon costs.

Practical implementation: measures for transport & manufacturing

> For transport:

- Fuel tax credits for domestic rail, shipping and aviation to be reduced from 1 July 2012 (agriculture exempt).
- Heavy on-road vehicles exempt until 1 July 2014, subject to parliamentary agreement.
- The fuel tax credit reduction will be applied by “reducing business fuel tax credits by an amount equivalent to that of placing the carbon price on emissions from that fuel”. Reduced credits for petrol, diesel and all liquid gasses (CNG, LNG, LPG) but not ethanol or biodiesel.

> For emissions-intensive (EITE) manufacturing industries:

- Free permits for 94.5% of carbon costs (2012-15) worth an estimated \$9.4bn over three years. e.g. steel, glass, zinc, paper, concrete.
- Steel will get an additional small increase in free permits from 2016.
- \$300mn assistance package for steel (as well as the free permits)
- Review of all EITE assistance in 2014/15

> For lower emissions-intensive (non EITE) manufacturing industries:

- Less intensive industries that are eligible for the carbon tax and trading get free permits worth 66% of their carbon costs
- \$800mn over 7 years for clean technology program for affected manufacturers that are not EITE (e.g. food processing & other metals).

Practical implementation: measures for indirectly affected businesses

> **Agriculture & land management**

- Exempt from direct carbon tax & trading
- No reduction in fuel tax credit
- \$22mn Indigenous Carbon Farming Fund
- Grants for pollution reduction by food processors from the food and foundries investment pool (\$200mn)
- \$946mn for biodiversity and land care over 6 years
- \$330mn for low carbon community projects (up by \$80mn from existing)

> **For downstream businesses:**

- May be eligible for some of the assistance funding to reduce emissions
- Mandatory CO₂e standards for light vehicles

Practical implementation: measures for households and individuals

- > **The government has used its carbon price policy to push through more of the recommendations for personal taxation reform from the Henry Tax Review.**
- > **For individual taxpayers:**
 - Major tax cuts for individual tax payers earning up to 80k (see overleaf). This is done with a combination of moving tax rates AND threshold levels.
 - Tax free threshold for low earners rises from 6k to 18.2k on 1 July 2012 and 19.4k from 1 July 2015.
 - No tax cuts above 80k, but no tax increases either.
- > **For households:**
 - Clean energy supplement of 1.7% for pensioners. The Clean Energy Advance for pensioners will be \$250 for singles and \$190 for each member of a couple and paid in May-June 2012, thereafter added to regular pension/benefit payments.
 - Family Tax Benefit increase of 1.7% under the Clean Energy Advance. For families receiving Family Tax Benefit Part A, this is up to an extra \$110 per child. For families receiving Family Tax Benefit Part B, this is up to an extra \$69 per child.
 - Extra payment for those using energy-intensive medical equipment (e.g. dialysis machines at home). 110,000 people will receive \$140pa (total cost of \$15.4m).
- > **Costs vs benefits for households:**
 - Average costs will increase \$9.90 per week.
 - Average assistance will increase by \$10.10 per week.
- > **There will be a distributional impact from these changes, and potentially a modest boost to consumer spending (at the expense of business investment)**
 - Compensation measures are targeted at low-income earners.
 - Low income earners have higher marginal consumption rates (eg. lower savings rates). A boost to household income above the additional costs imposed by the carbon price will therefore most likely be spent not saved.

Practical implementation: measures for households and individuals

> The changes to taxation policy

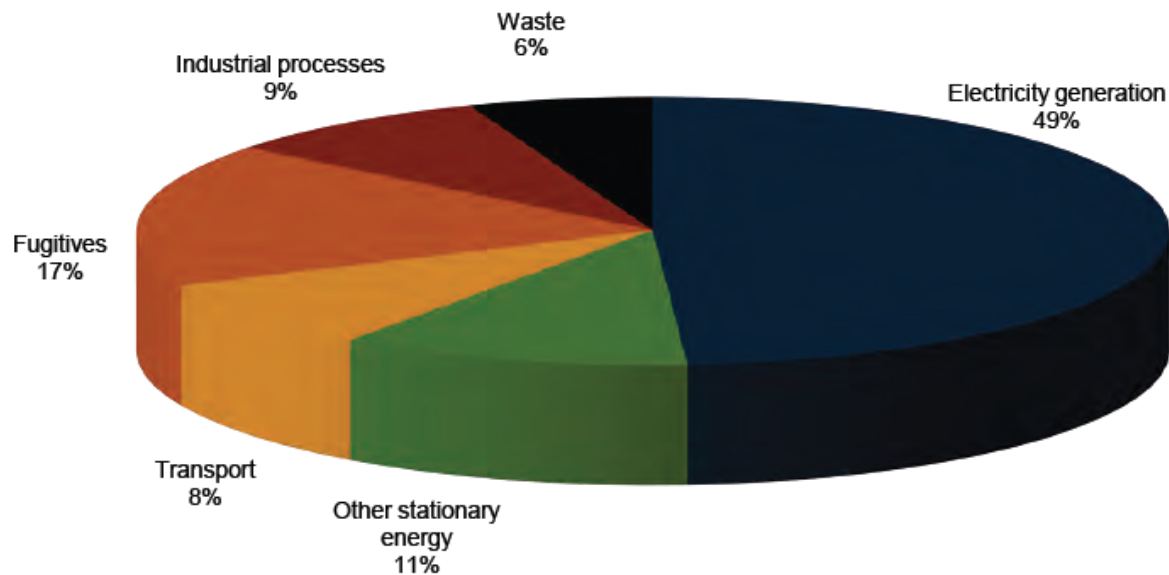
	Current		2012-13		2015-16	
	Threshold (\$)	Marginal rate (%)	Threshold (\$)	Marginal rate (%)	Threshold (\$)	Marginal rate (%)
1st rate	6,001	15	18,201	19	19,401	19
2nd rate	37,001	30	37,001	32.5	37,001	33
3rd rate	80,001	37	80,001	37	80,001	37
4th rate	180,001	45	180,001	45	180,001	45
Effective tax-free threshold	16,000		20,542		20,979	
Low income tax offset	1,500	4% withdrawal rate from \$30k	445	1.5% withdrawal rate from \$37k	300	1% withdrawal rate from \$37k

> And what these changes mean for you...

Income (\$)	Tax (\$)	Current	Tax (\$)	2012-13	Tax (\$)	2015-16
		Effective rate (%)		Effective rate (%)		Effective rate (%)
20,000	2,100	10.5	342	1.7	114	0.6
40,000	5,550	13.9	4,547	11.4	4,334	10.8
60,000	11,550	19.3	11,047	18.4	10,934	18.2
80,000	17,550	21.9	17,547	21.9	17,534	21.9
180,000	54,550	30.3	54,547	30.3	54,534	30.3
250,000	86,050	34.4	86,047	34.4	86,034	34.4

Who pays? Mainly energy. Electricity generators will pay half the total.
Agriculture is exempt

Share of cumulative emission reductions by sector Core policy scenario, 2010 to 2050



Note: The uncovered sectors of agriculture, forestry and fisheries are excluded from this chart. Abatement due to the CFI is incorporated in the level of Australian emissions in both the medium global action and core policy scenario.

Source: Treasury estimates from MMRF.

Note: Fugitives is mainly fugitive emissions from coal, gas and oil.

Sources: The Treasury.

Who pays? Mainly energy. Electricity generators are by far Australia's biggest carbon emitters

Actual CO2e emissions, major industries

Sector	Emissions of CO2e per year, Gg (1,000 tonnes)		
	2000	2009	Change
ENERGY PRODUCTION	Gg	Gg	%
Electricity Generators	192,697	227,794	18.2
Manufacturing & construction	38,855	44,514	14.6
Transport	75,188	83,645	11.2
Other energy sectors	17,651	20,334	15.2
Other energy production	1,205	1,413	17.3
Fugitive emissions from coal	22,502	28,704	27.6
Fugitive emissions from gas & oil	12,609	10,951	-13.1
Energy production total	360,707	417,355	15.7
INDUSTRIAL PROCESSES			
Mineral production	6,317	6,507	3.0
Chemical production	3,475	6,561	88.8
Metal production	14,287	10,069	-29.5
Other production	152	170	11.8
Consumption of halocarbons & SF6	1,808	6,310	249.0
Industrial processes total	26,040	29,617	13.7
Energy and industry total	386,747	446,972	15.6
4. agriculture	94,476	84,746	-10.3
6. Waste	14,893	14,075	-5.5
AUSTRALIA TOTAL EXC. LULCF**	496,116	545,793	10.0

** Australian total emissions excluding land use, land use change and forestry (LULCF).

Clean Energy Future Package has small net budget cost

- > Measures agreed by the MPCCC have a cost to budget of \$4.0bn (\$3.8bn on an underlying cash balance basis) over a 3-year period (around 0.2% of GDP)
- > Impact front-loaded in 2011-12 to sell package to households (\$2.7bn impact or 0.2% of GDP in 2011-12). Very small impact on 2012/13 budget (\$0.5bn)
- > Additional Government measures (see over) mean slightly larger, but still small net budgetary cost, but note large gross revenues and outlays changes

Fiscal impact of clean energy future (MPCCC approved measures)

	2011-12	2012-13	2013-14	2014-15	Total
	\$bn	\$bn	\$bn	\$bn	\$bn
Revenue	0.0	8.6	9.0	9.6	27.3
- Sale of permits	0.0	7.7	8.1	8.6	24.5
- Other carbon price revenue	0.0	0.3	0.3	0.3	0.9
- Fuel tax credit reductions	0.0	0.6	0.6	0.7	1.9
Outlays	-2.6	-7.3	-10.1	-10.4	-30.5
- Transfer payments for low, middle income households	-1.5	-0.7	-2.3	-2.4	-6.9
- Tax reform	0.0	-3.4	-2.4	-2.3	-8.0
- Jobs and competitiveness program	0.0	-2.9	-3.1	-3.3	-9.2
- Clean technology program	0.0	-0.1	-0.2	-0.3	-0.7
- Clean Energy Finance Corporation	0.0	0.0	-0.5	-0.5	-0.9
- Energy Security and transformation	-1.0	0.0	-1.0	-1.0	-3.1
- Land and biodiversity	-0.1	-0.1	-0.5	-0.5	-1.2
- Governance	-0.1	-0.1	-0.1	-0.1	-0.4
- Other outlays	-0.1	-0.1	-0.2	-0.3	-0.8
Net Fiscal Impact	-2.7	1.1	-1.3	-1.1	-4.0
% of GDP	-0.2	0.1	-0.1	-0.1	-0.2
Underlying Cash Balance Impact	-2.7	-0.5	-0.4	-0.2	-3.8
% of GDP	-0.2	0.0	0.0	0.0	-0.2

Additional Government measures add slightly to cost

- > Additional support measures (Coal Sector Jobs Package, Coal Mining Abatement Technology, Steel Transformation Plan) worth \$926m over three years, partially funded by additional fuel tax credit reductions for heavy on-road transport from 2014-15 (\$510m).
- > Again, small impact on 2012/13 budget (of \$0.5bn) on underlying basis

Fiscal impact of clean energy future (incl. additional government measures)

	2011-12	2012-13	2013-14	2014-15	Total
	\$bn	\$bn	\$bn	\$bn	\$bn
Additional Government Measures	-0.2	0.0	-0.3	0.2	-0.4
- Coal Sector Jobs Package	-0.2	0.0	-0.2	-0.2	-0.7
- Coal Mining Abatement Technology Package	0.0	0.0	0.0	0.0	-0.04
- Steel Transformation Plan	0.0	0.0	-0.1	-0.1	-0.2
- Fuel tax credit reduction (heavy on-road transp. 2014-15)	0.0	0.0	0.0	0.5	0.5
Net Fiscal Impact (incl. additional measures)	-2.9	1.1	-1.6	-0.9	-4.4
% of GDP	-0.2	0.1	-0.1	-0.1	-0.24
Underlying Cash Balance Impact (incl. addit. measures)	-2.9	-0.5	-0.7	-0.1	-4.3
% of GDP	-0.2	0.0	0.0	0.0	-0.2

Macroeconomic effects of the tax - summary

- > **Treasury's modelling finds the carbon tax will exert large changes in some sectors of the economy, but ultimately a very low impact on headline macroeconomic measures (GDP, GNI, long-term inflation, employment).**
 - The negative impact of the carbon tax (-0.1ppt per annum on national income) is expected to be lower than the impact of the aging of the population (-0.3ppts per annum on national income).
- > **GDP and national income:**
 - Real GDP growth will be cut by up to 0.1 ppt per annum, on average, to 2050.
 - National income (GNI) growth will be cut by approximately 0.1 ppt per annum, on average, to 2050. Treasury finds Australian income per person will therefore be about ½ a per cent below where it would have otherwise been in 2020.
- > **Inflation:**
 - The total impact on the headline CPI will be 0.9ppts over four years. This impact will be driven almost entirely by higher electricity and gas prices. The price impact on other goods and services is expected to be negligible.
 - This includes a one-off increase in headline inflation of 0.7 ppts in 2012/13 following the implementation of the carbon tax, with a further one-off effect of 0.2% in 2015-16 when the price is raised to \$29/t.
 - Treasury's modelling assumes no second-round positive price effects from the carbon tax (ie. higher electricity price inputs will not raise prices of other goods and services, and higher electricity prices will not become embedded into higher inflationary expectations).

Macroeconomic effects of the tax – summary cont'd

> **Employment:**

- Modelling suggests no net effect on employment to 2050. Treasury advises that for more than 95% of the economy, pricing carbon produces changes in employment, up or down, of no more than 1% by 2020.
- We suspect labour force participation will be encouraged by tax cuts and especially by raising the tax free threshold (although interaction with welfare payments may still be an issue for some non-participating low income people).

Transition costs and structural change:

- Today's policy announcements involve a net transfer of income from tax-paying businesses to tax-paying households. Relative to a 'no policy change' base case, we would expect that this would drive some increase in consumption relative to investment in the Australian economy.
- The modelling shows little change in the industry composition of Australian GDP to 2020. However, even though manufacturing's share of GDP doesn't change much, the modelling does show big transitions within the manufacturing sector with lower growth in aluminium, cement, chemicals, paper, steel.

> **Regional impact:**

- Pricing carbon will have the biggest negative impact on economic growth in Queensland, New South Wales and Western Australia.

- > **Model assumptions:** Based on CO₂e reduction targets of 5% below 2000 levels by 2020 and 80% below 2000 by 2050. The 'core case' assumes \$20/t rising by 5%+CPI p.a. This is lower than the government's actual announcement (\$23/t rising by 2.5% + CPI p.a.). But Treasury advises that the modelling results at the endpoint at 2020 and 2050 are not affected by this lower carbon price assumption.

Macroeconomic impacts – Electricity prices

Macroeconomic modelling with an initial carbon price of \$20 in 2012/13¹

	Without carbon pricing	With carbon pricing	Impact of carbon tax
Current levels - at 2009-10			
Actual emissions, Mt CO ₂ -e	578	578	-
GNI per person \$'000/person	55.8	55.8	-
Medium term - at 2020			
Emission target, change from 2000 level, per cent	-	-5	-5
Carbon price, real, \$/t CO ₂ -e	-	29	-29
GNI per person, \$'000/person	65.1	64.8	-0.3
GNI, change from global action scenario, per cent	-	-0.5	-0.5
GDP, change from global action scenario, per cent	-	-0.3	-0.3
Emission-intensity of GDP, kg CO ₂ -e/\$	0.39	0.36	-0.03
Long term – at 2050			
Emission target, change from 2000 level, per cent	-	-80	-80
Carbon price, real, \$/t CO ₂ -e	-	131	131
GNI per person, \$'000/person	91.2	86.9	-4.3
GNI, change from global action scenario, per cent	-	-4.7	-4.7
GDP, change from global action scenario, per cent	-	-2.8	-2.8
Emission-intensity of GDP, kg CO ₂ -e/\$	0.28	0.15	-0.13
Overall impact, 2010 to 2050			
Australian real GNI per person, average annual growth, per cent	1.2	1.1	-0.1
Australian real GDP per person, average annual growth, per cent	1.4	1.3	-0.1
Gross world product, PPP, average annual growth, per cent	3.5	3.4	-0.1

Note: All dollars are 2010 prices, PPP - purchasing power parity, Mt CO₂-e - million tonnes of carbon dioxide equivalent.

¹ Treasury modelling was undertaken with an initial carbon price of \$20/t. Treasury has advised its modelling results will be negligibly impacted by the government's announced initial carbon price of \$23/t.

Source: The Treasury

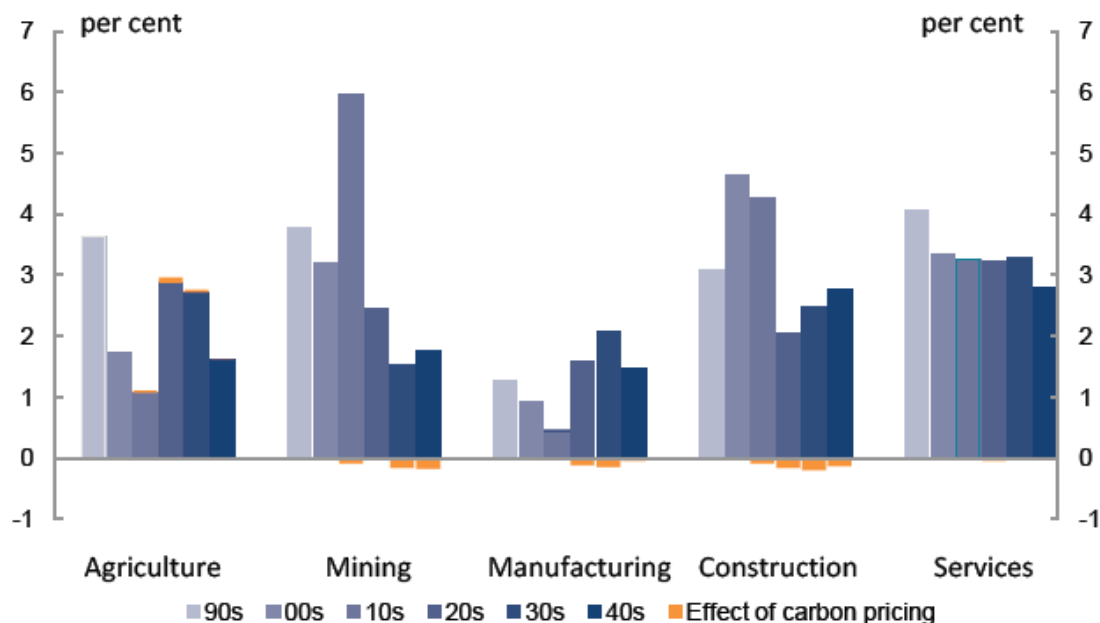
Macroeconomic effects of the tax – industry impacts

- > Structural changes due to carbon prices are expected to be much smaller than the effects of ongoing changes in the terms of trade or tastes.
- > Nevertheless, mining, manufacturing and construction are all expected to grow slightly more slowly with carbon prices.
- > Growth in the aggregate services sector is expected to remain unchanged.
- > Agriculture (which is excluded from carbon trading) is the only industry that is expected to grow faster under the carbon pricing scheme.

Output growth by broad sector, 1990 to 2050

Annual average growth rates

Medium global action scenario and effect of carbon pricing



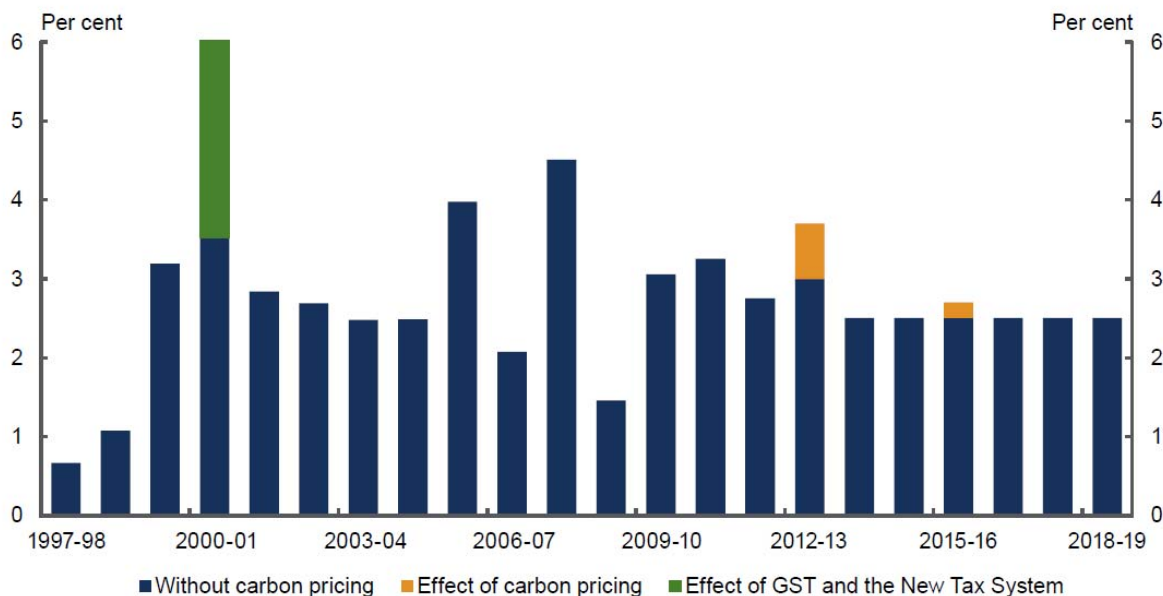
Macroeconomic effects of the tax – industry impacts

- > **While the impact on the aggregate sectoral composition of growth will be very small, Treasury predicts some significant changes at the industry level between now and 2020**
 - Electricity generation is expected to bear the biggest load of the reduction in carbon emissions (49% of the cumulative emissions reductions between 2010 to 2050 according to Treasury). As such, sectors expected to shrink under a carbon pricing scheme are coal-fired electricity, hydro electricity, paper products and refinery.
 - Textiles, clothing and footwear and motor vehicles and parts are expected to experience the largest declines, but this is due to other structural forces (eg. the A\$), rather than carbon pricing.
 - Sectors expected to experience the strongest growth include 'other' electricity (eg. renewables), mining (albeit at a slightly slower rate than if carbon pricing was not introduced), freight transport (ditto) and communication and business services.
 - Treasury has not released the exact positive/negative impact of the carbon pricing scheme on individual industries.

Macroeconomic impacts – Inflation

- > **The carbon tax will add 0.7% to the headline CPI in 2012/13.**
- > **A further 0.2% will be added to the headline CPI in 2015/16 as the carbon price rises from \$23t**
- > **The brings the total CPI impact to 0.9% over four years.**
 - This is a smaller impact than the GST, which added around 2.5% to the CPI in 2000/01.
- > **All else unchanged, this would see our forecast for 2012/13 headline CPI rise to 3.8%.**
 - This is well above the RBA's 2-3% target band.
 - The RBA is likely to look through this temporary policy-induced price change, so long as these carbon-related price changes do not become embedded into inflation expectations.

Impact to CPI from the carbon tax



- > Whilst the overall impact on the CPI will be relatively modest, there will be substantial increases in the prices of some goods and services.
- > The largest price increases will be for goods with a high emission intensity such as electricity and gas.
- > A carbon price of \$23/t Co₂-e in 2012/13 is expected increase electricity prices by 10% and gas prices by 9%. Food prices are expected to rise by under 0.5%.
 - These price increases are expected to increase average weekly expenditure by around \$9.90.

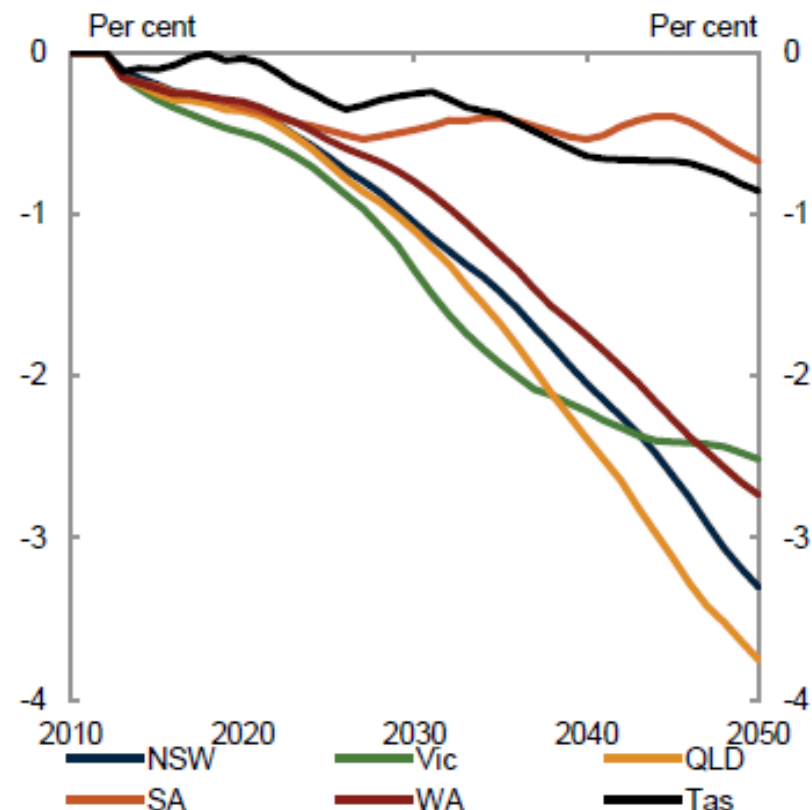
Impact of a carbon price of \$23/t Co₂-e in 2012/13

	Weekly expenditure (\$ per week)	Consumer prices (Per cent)
Electricity	3.3	10
Gas	1.5	9
Food	0.8	<0.5
Overall effect	9.9	0.7

Impact to growth – States comparison

- > **Out to 2050, carbon pricing will have the biggest negative impact on Queensland, Western Australia and New South Wales.**
 - These States rely relatively more on emission-intensive manufacturing, such as iron and steel production, alumina and aluminium production and petroleum refining and energy extraction.
- > **Carbon pricing will have a more modest negative impact will be on South Australia, Tasmania and Victoria.**
 - These States are less emission intensive and have a greater proportion of industries such as motor vehicles and parts production, textiles, clothing and footwear and forestry, which are all expected to grow somewhat faster with carbon pricing.

Gross state product: core policy scenario



Impact to prices – States comparison

- > **Victoria, Queensland and Western Australia are expected to experience the biggest increases in inflation from the carbon tax.**
 - Electricity prices are expected to increase the most in these three States.
 - South Australia and the Northern Territory are expected to experience the most modest electricity price rises.

Average household electricity price increases

Change from global action scenario (per cent)

	2013 - 2017	Core policy 2018 - 2022	2046 - 2050
NSW	9	8	35
VIC	10	8	31
QLD	10	9	35
WA	10	10	37
SA	8	7	23
TAS	9	9	28
NT	8	6	24
Average	10	8	33

International Comparisons

- > **32 countries and 10 US states have emissions trading schemes in place.**
- > **New Zealand:** An ETS commenced in 2008, covering forestry, electricity generation, transport fuels and industrial processes. By 2015 all sectors of the economy will be covered.
- > **China:** 12th Five Year Plan (to 2015), has a goal of "gradually establishing a carbon trading market". Emissions trading will be trialled in six key provinces before 2013. Also has a system of incentives for low-emissions power generation.
- > **India:** has begun implementing a national energy efficiency certificate trading scheme accounting for more than 50% of the fossil fuel used. A coal tax is expected to raise about \$500 million for investment in clean-energy technologies in the first 12 months.
- > **South Korea:** legislation was introduced in April to commence economy-wide emissions trading from 2015. A trial emissions trading scheme has been in place since January involving 14 cities and provinces, including Seoul.
- > **Japan:** voluntary emissions trading schemes involving some of its largest companies since 2005.
- > **Europe:** an Emissions Trading Scheme commenced in 2005 and applies in 30 countries, some of which also have a carbon tax, and many of which have additional measures such as renewable energy subsidies.
- > **Britain:** (with approximately the same total carbon emissions as Australia but a population three times larger), the Conservative Coalition Government has tightened its emission targets to 50% below 1990 levels by around 2025.
- > **US:** Government is committed to a new Clean Energy Standard that will double the share of 'clean-energy' sources for US electricity supply to 80% by 2035. 10 US states participate in a trading scheme, although New Jersey has voted to pull out of it at the end of this year.

Federal Opposition's plan as of 8 July 2011

- >The Opposition's "Direct Action Plan" is aimed at providing incentives to enable private initiatives to mitigate climate change.
- >Opposition says it will reduce carbon emissions by 5% by 2020
- >Cost of \$3.2 billion over four years.
- >Centre piece is an *Emissions Reduction Fund*. Businesses that reduce emissions below their baseline or 'business as usual' activity will be able to sell their CO2 abatement to Government. Businesses that emit above their 'business as usual' levels will incur a financial penalty. The National Greenhouse and Energy Reporting Scheme would determine the abatement achieved by individual businesses.
- >Discrete policies would encourage households and business to lower their emissions including: One Million Solar Roofs, Clean Energy Employment Hubs, Solar Towns and Solar Schools, Geothermal and Tidal Towns, Renewable Fuels and Green Corridors.
- >The Coalition has said that if wins Government, it would repeal the ALP's proposed Carbon Pricing Mechanism.
- >The Greens have said they would use their numbers to prevent that happening.

Multi-Party Climate Change Committee members

Prime Minister Julia Gillard (Chair) (Labor)
Deputy Prime Minister and Treasurer Wayne Swan (Labor)
Minister for Climate Change and Energy Efficiency Greg Combet (Deputy Chair) (Labor)
Senator Bob Brown (Greens)
Senator Christine Milne (co-Deputy Chair) (Greens)
Tony Windsor (Independent)
Rob Oakeshott (Independent)

Business community roundtable members

ACCI, Peter Anderson
National Australia Bank, Cameron Clyne
BHP Billiton, Hubrecht (Hubie) van Dalsen
Investor Group, Nathan Fabian
National Farmers' Federation, Ben Fargher
AGL Energy, Michael Fraser
Qantas, Alan Joyce
Origin, Grant King
Lend Lease, Rod Leaver
Woolworths, Michael Luscombe
BlueScope Steel, Paul O'Malley
Energy Supply Association of Australia, Brad Page
Rio Tinto, David Peever
Shell, Ann Pickard
Australian Industry Group, Heather Ridout
Business Council of Australia, Maria Tarrant
Woodside, Don Voelte
Clean Energy Council, Matthew Warren
Toyota, Masahide (Max) Yasuda

Non-government organisation roundtable members

Australian Conservation Foundation, Don Henry
The Climate Institute, John Connor
World Wide Fund for Nature, Dermot O'Gorman
Greenpeace Australia Pacific, Linda Selvey
ClimateWorks Australia, Anna Skarbek
Monash Sustainability Institute, John Thwaites
ACTU, Ged Kearney
Construction, Forestry, Mining and Energy Union, Tony Maher
Australian Workers' Union, Paul Howes
Australian Manufacturing Workers' Union, Dave Oliver
Electrical Trades Union, Peter Tighe
Australian Council of Social Service, Cassandra Goldie
World Vision, Tim Costello
Brotherhood of St Laurence, Tony Nicholson
Coast and Climate Change Council, Tim Flannery
National Centre for Social and Economic Modelling, Ann Harding
Australian Landcare Council, Snow Barlow
North Australian Indigenous Land and Sea Management Alliance, Joe Morrison
Australian Local Government Association, Geoff Lake
Australian Youth Climate Coalition, Amanda McKenzie

Further information

The Government's Clean Energy Plan <http://www.cleanenergyfuture.gov.au/clean-energy-future/our-plan/>

Strong Growth, Low Pollution: Modelling a Carbon Price, the Treasury
<http://www.treasury.gov.au/carbonpricemodelling/content/default.asp>

Australian Department of Climate Change and Energy Efficiency
<http://www.climatechange.gov.au/>

Garnaut Climate Change Review <http://www.garnautreview.org.au/>

Carbon Emission Policies in Key Economies, Productivity Commission
<http://pc.gov.au/projects/study/carbon-prices/report>

The New Zealand Emissions Trading Scheme
<http://www.climatechange.govt.nz/emissions-trading-scheme/>

Carbon Pricing Mechanism and Other Abatement Measures, the Treasury
<http://www.treasury.gov.au/contentitem.asp?NavId=087&ContentID=1999>

Greenhouse and Energy Information 2009-10 (reportable emissions data)
<http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/publication-of-data.aspx>

National Greenhouse Gas Inventory Accounting (Dec Qtr 2010)
<http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-gas-inventory-2009.aspx>

Australian Climate Commission <http://climatecommission.gov.au/>

Disclaimer

Important Notice

Australia and New Zealand Banking Group Limited is represented in:

AUSTRALIA

Australia and New Zealand Banking Group Limited
ABN 11 005 357 522
ANZ Centre Melbourne, Level 9, 833 Collins Street, Docklands Victoria 3008,
Australia
Telephone +61 3 9273 5555 Fax +61 3 9273 5711

UNITED STATES OF AMERICA

ANZ Securities, Inc. is a member of FINRA (www.finra.org) and registered with the SEC.
277 Park Avenue, 31st Floor, New York, NY 10172,
United States of America
Tel: +1 212 801 9160 Fax: +1 212 801 9163

UNITED KINGDOM BY:

Australia and New Zealand Banking Group Limited
ABN 11 005 357 522
40 Bank Street, Canary Wharf, London, E14 5EJ, United Kingdom
Telephone +44 20 3229 2121 Fax +44 20 7378 2378

NEW ZEALAND BY:

ANZ National Bank Limited
Level 7, 1-9 Victoria Street, Wellington, New Zealand
Telephone +64 4 802 2000

This document ("document") is distributed to you in Australia and the United Kingdom by Australia and New Zealand Banking Group Limited ABN 11 005 357 522 ("ANZ") and in New Zealand by ANZ National Bank Limited ("ANZ NZ"). ANZ holds an Australian Financial Services licence no. 234527 and is authorised in the UK and regulated by the Financial Services Authority ("FSA").

This document is being distributed in the United States by ANZ Securities, Inc. ("ANZ S") (an affiliated company of ANZ), which accepts responsibility for its content. Further information on any securities referred to herein may be obtained from ANZ S upon request. Any US person(s) receiving this document and wishing to effect transactions in any securities referred to herein should contact ANZ S, not its affiliates.

This document is being distributed in the United Kingdom by ANZ solely for the information of its eligible counterparties and professional clients (as defined by the FSA). It is not intended for and must not be distributed to any person who would come within the FSA definition of "retail clients". Nothing here excludes or restricts any duty or liability to a customer which ANZ may have under the UK Financial Services and Markets Act 2000 or under the regulatory system as defined in the Rules of the FSA.

This document is issued on the basis that it is only for the information of the particular person to whom it is provided. This document may not be reproduced, distributed or published by any recipient for any purpose. This document does not take into account your personal needs and financial circumstances. Under no circumstances is this document to be used or considered as an offer to sell, or a solicitation of an offer to buy.

In addition, from time to time ANZ, ANZ NZ, ANZ S, their affiliated companies, or their respective associates and employees may have an interest in any financial products (as defined by the Australian Corporations Act 2001), securities or other investments, directly or indirectly the subject of this document (and may receive commissions or other remuneration in relation to the sale of such financial products, securities or other investments), or may perform services for, or solicit business from, any company the subject of this document. If you have been referred to ANZ, ANZ NZ, ANZ S or their affiliated companies by any person, that person may receive a benefit in respect of any transactions effected on your behalf, details of which will be available upon request.

The information herein has been obtained from, and any opinions herein are based upon, sources believed reliable. The views expressed in this document accurately reflect the author's personal views, including those about any and all of the securities and issuers referred to herein. The author however makes no representation as to its accuracy or completeness and the information should not be relied upon as such. All opinions and estimates herein reflect the author's judgement on the date of this document and are subject to change without notice. No part of the author's compensation was, is or will directly or indirectly relate to specific recommendations or views expressed about any securities or issuers in this document. ANZ, ANZ NZ, ANZ S, their affiliated companies, their respective directors, officers, and employees disclaim any responsibility, and shall not be liable, for any loss, damage, claim, liability, proceedings, cost or expense ("Liability") arising directly or indirectly (and whether in tort (including negligence), contract, equity or otherwise) out of or in connection with the contents of and/or any omissions from this communication except where a Liability is made non-excludable by legislation.

Where the recipient of this publication conducts a business, the provisions of the Consumer Guarantees Act 1993 (NZ) shall not apply.