TREASURY EXECUTIVE MINUTE

Minute No.

1 February 2011

Deputy Prime Minister and Treasurer

PRELIMINARY CARBON PRICE HOUSEHOLD PRICE IMPACTS

Timing: At your convenience.

Recommendation/Issue:

- That you note the preliminary estimated dollar per week price impacts of four indicative carbon prices for electricity, gas, automotive fuel and food and the overall impact on households.

Noted Signature: ..../...../2011

KEY POINTS

- The Department of Climate Change and Energy Efficiency, on behalf of the Minister for Climate Change and Energy Efficiency, has requested the weekly dollar price impacts of a range of carbon prices for electricity, gas, automotive fuel and food and the overall price impact on households.

- Two scenarios have been modelled. Both scenarios follow the coverage and parameters from the policy design of the Carbon Pollution Reduction Scheme (CPRS) as negotiated by the Government with the Opposition in November 2009. However in order to provide estimates of the impact of a carbon price on automotive fuel one of the scenarios excludes the provision of fuel tax concessions. Both scenarios assume a start date of 1 July 2012.

- These estimates have not been publicly released and are preliminary and subject to change. They are indicative estimates and should only be used to inform internal policy development.

  - The Treasury Macroeconomic Modelling Division are currently updating the Government's 2008 report *Australia's Low Pollution Future: The Economics of Climate Change Mitigation*. Modelling at a household level can only be finalised once this macroeconomic modelling is complete.

  - Due to the limited timeframe the weekly dollar impact of a carbon price on households for a $30 carbon price was modelled and for the remaining carbon prices, the estimated household price impacts have been scaled accordingly.

  - Emission intensive goods, such as electricity and gas, will have the greatest price impacts with the introduction of a price on carbon.

- See Attachment A for the preliminary estimated impacts of the four indicative carbon prices.

- The Macroeconomic Modelling Division has been consulted in the preparation of this minute.

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ATTACHMENT A

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  - The Treasury Macroeconomic Modelling Division are currently updating the Government's 2008 report *Australia's Low Pollution Future: The Economics of Climate Change Mitigation*. Modelling at a household level can only be finalised once this macroeconomic modelling is complete.
  - Due to the limited timeframe the weekly dollar impact of a carbon price on households for a $30 carbon price was modelled and for the remaining carbon prices, the estimated household price impacts have been scaled accordingly.
- The inclusion of fuel tax concessions with the introduction of a carbon price lessens the estimated price impact on households. The overall CPI impact of a $30 carbon price with the inclusion of fuel tax concessions is 1.04 per cent.

	CPRS Scenario including fuel tax concessions ($ per week in 2012-13 dollars)							
	$10		**$20**		**$30**		**$40**	
	$ per week	*% impact*	*$ per week*	*% impact*	*$ per week*	*% impact*	*$ per week*	*% impact*
Electricity	$1.40	5%	$2.70	10%	$4.10	15%	$5.50	20%
Gas	$0.70	4%	$1.40	8%	$2.10	12%	$2.80	17%
Food	$0.40	< 1%	$0.80	< 1%	$1.20	< 1%	$1.60	< 1%
Overall Impact	$3.90		$7.80		$11.70		$15.60	
Overall CPI Impact (%)		0.35%		0.70%		1.04%		1.39%

- The exclusion of fuel tax concessions with the introduction of a carbon price increases the estimated price impact on households. In this scenario, the carbon price results in a direct price increase on automotive fuel and an indirect impact as the price increase on automotive fuel flows through to household consumed goods. The overall CPI impact of a $30 carbon price without fuel tax concessions is 1.48 per cent.

	CPRS Scenario excluding fuel tax concessions ($ per week in 2012-13 dollars)							
	$10		**$20**		**$30**		**$40**	
	$ per week	*% impact*	*$ per week*	*% impact*	*$ per week*	*% impact*	*$ per week*	*% impact*
Electricity	$1.40	5%	$2.80	10%	$4.20	16%	$5.60	21%
Gas	$0.70	4%	$1.50	9%	$2.20	13%	$2.90	17%
Automotive Fuel	$1.20	2%	$2.40	4%	$3.60	6%	$4.80	8%
Food	$0.60	< 1%	$1.10	< 1%	$1.70	< 1%	$2.30	1%
Overall Impact	$5.50		$11.10		$16.60		$22.10	
Overall CPI Impact (%)		0.49%		0.98%		1.48%		1.97%

- More up-to-date data have been incorporated into carbon price modelling that has been undertaken since November 2010. This means that estimated household price impacts from CPRS modelling undertaken prior to that time are not directly comparable to these new preliminary estimates. The updated data includes:
  - 2005-06 Input-Output tables.
  - 2005-06 emissions intensity data.
  - 2009-10 actual CPI data and updated forecast CPI projections.
  - The following section contains for more information about the impact of the updated data.

PRISMOD AND PRISMOD.DIST

- PRISMOD calculates the value of the additional cost to industries and households when a price is placed on emissions. PRISMOD combines the emission levels resulting from the production of each commodity and carbon price to determine the additional total embodied cost of producing a single unit of each commodity. The total embodied cost refers to the direct costs that result from the production process of a commodity, and the indirect costs that result from the increase in input prices, due to the supplier raising prices from emissions in their production process. This additional per unit cost is then multiplied by the amount of the commodity consumed by households and industry to determine the additional costs to households and firms.
  - The PRSIMOD emissions database has been updated using the National Greenhouse Gas Inventory (2010) so as to align emissions with the ABS input output tables 2005-06. This update of both emissions and output sees the emission-intensity for electricity supply reduce from 9.18 (2004-05) to 8.16 (2005-06). This is in line with historical reductions in emission intensity over the last 10 years.
  - Changes have also been made to increase shielding rates for LNG and food processing whereby additional shielding was provided for the November 2009 agreement with the Coalition. These factors have contributed to a reduction in the impact of a carbon price on the CPI.
- PRISMOD.DIST was used to model the Carbon Pollution Reduction Scheme (CPRS) distributional price impacts on households. PRISMOD.DIST uses 2003-04 Household Expenditure Survey (HES) data which is the most currently available detailed survey of household consumption patterns.
  - Treasury has adjusted the expenditure information in the 2003-04 HES to be representative of the population as at 2012-13 by updating for price and population changes.
    - : Expenditure data is inflated to 2012-13 dollars using actual CPI expenditure class outcomes to 2009-10 and all groups CPI forecast for 2012-13 with the exception of electricity and fuel for which separate forecasts have been used.
    - : The size and composition of the population has been adjusted to reflect current population, demographic and economic conditions.

- The updates to the HES do not take account of changes in tastes which may compositionally alter household consumption patterns over time.

- The ABS is currently undertaking the 2009-10 HES and is also boosting the sample of low income households in order to improve the robustness of estimates that feed into the Pensioner and Beneficiary Living Cost Index, which is also currently used to index pensions twice yearly.
  - While more up to date information and a larger sample will improve estimates, it is unlikely to be released until towards the end of 2011.