Parliamentary Budget Office

Policy costing

Reintroduce a price on pollution to ensure polluters pay for the damage they are doing	
Party:	Australian Greens

This proposal has two components:

- Component 1 – The proposal would place a price on direct greenhouse gas emissions (scope 1 emissions) for facilities with annual carbon-dioxide-equivalent greenhouse gas emissions of over 25,000 tonnes (scope 1 and scope 2 emissions). Facilities whose primary purpose is agriculture or transportation would be exempt from the proposal.

  The proposed carbon price would be set at $32 per tonne of direct carbon-dioxide-equivalent greenhouse gas emissions in 2019-20, indexed according to the consumer price index for the next two years, before rising to $43 per tonne in 2022-23. The carbon price would grow at 4 per cent per year from 2023-24.

  The costs of carbon emissions would be deductible for tax purposes.

  Emissions-intensive trade-exposed industries will receive 80 per cent of their scope 1 and scope 2 emissions as free permits in the first year. The free permit allocations to emissions-intensive trade-exposed entities would reduce to zero over eight years.

  The current Emissions Reduction Fund would be converted to the Carbon Farming Initiative.

- Component 2 – This component would make the following changes to the energy supplement as a means of compensating households for the impact of the proposed carbon price on their electricity bills.
  - Increase the base energy supplement payment rate by 30 per cent for all eligible payments.
  - Reinstate energy supplement eligibility to the following payment recipients/cardholders:
    - Family Tax Benefit – Part A
    - Family Tax Benefit – Part B
    - Commonwealth Seniors Health Card.
  - Index the energy supplement by changes in the headline consumer price index every six months from 1 January 2020.

Both components of this proposal would have effect from 1 July 2019.

Costing overview

The proposal would be expected to increase the fiscal balance by $21,645 million and the underlying cash balance by $19,045 million over the 2019-20 Budget forward estimates period. On a fiscal balance basis, this impact reflects an increase in revenue of $24,600 million, partially offset by an increase in administered and departmental expenses of $2,955 million.

The proposal would be expected to have an ongoing impact that extends beyond the 2019-20 Budget forward estimates period. A breakdown of the financial implications of each component of the proposal over the period to 2029-30 is included at Attachment A.

The fiscal balance impact differs from the underlying cash balance impact due to the timing difference between when emission liabilities are raised and when payments are made.

Departmental expenses associated with administering Component 1 of the proposal would be expected to be around $10 million per year for the Department of the Environment and Energy, which encompasses the Clean Energy Regulator and the Climate Change Authority. Departmental expenses for Component 1 are lower compared to the previous carbon pricing mechanism because the proposal is significantly less complex. There would also be a relatively small amount of departmental expenses for the Department of Social Services and the Department of Human Services for Component 2.

This costing is subject to uncertainties, particularly around the expected reduction in carbon emissions by affected entities as a result of Component 1, as well as changes in the number of recipients eligible for compensation over the medium term under Component 2. The Parliamentary Budget Office (PBO) has assessed that, given the price would increase steadily in real terms over the long run, there would be ongoing reductions in carbon emissions.

The overall behavioural response is calculated based on analysis of modelling of the effect of a carbon price under various scenarios, and is subject to uncertainty due to factors such as differences in the response between industries with different levels of carbon intensity, variations in industry-by-industry economic growth rates, and technological developments affecting the cost of abatement across different industries. It is possible that some affected entities would cease operating as a result of the proposal, in both directly and indirectly affected industries. If there was a larger emissions reduction as a result of this proposal, it would result in a smaller increase in revenue.

Reintroducing a carbon price would be expected to have broader macroeconomic impacts, including on production costs and inflation. These would be expected to have a flow-on effect on government payments and excise revenue due to consumer price index indexation. This costing has not included these impacts because there is too much uncertainty to estimate their magnitude and timing; however they would be expected to reduce the gain to the budget of this proposal.

Table 1: Financial implications ($m)[(a)(b)]

	2019–20	2020–21	2021–22	2022–23	**Total to 2022–23**
Fiscal balance	6,557	3,299	4,929	6,759	**21,645**
Underlying cash balance	4,757	3,299	4,829	6,159	**19,045**

(a) A positive number represents an increase in the relevant budget balance; a negative number represents a decrease.

(b) Figures may not sum to totals due to rounding.

Key assumptions

The PBO has made the following assumptions in costing this proposal.

Component 1

Carbon price

- Based on the modelling of the former carbon pricing mechanism and data provided by the Department of the Environment and Energy, carbon emissions would decline by approximately 1.3 per cent per year over the period to 2029-30 in response to the reintroduction of the carbon price.
  - The annual emissions reduction rate is based on the central scenario from the Department of the Environment and Energy's 2013 report *Climate Change Mitigation Scenarios – Modelling report provided to the Climate Change Authority in support of its Caps and Targets Review*.
- Without the carbon price, carbon emissions unrelated to the agriculture and transport sectors would increase at an average growth rate of 0.1 per cent per year over the period to 2029-30, based on forecasts provided by the Department of the Environment and Energy.
- Companies would not be able to distribute carbon emissions between facilities to get a portion of their emissions below the 25,000 tonne facility threshold.
- Carbon price revenue would be calculated and paid quarterly, with payments occurring in the next quarter for affected entities.
- All manufacturing facilities affected by the proposal would be considered emissions-intensive trade-exposed entities and be eligible for free permits.
- The amount of Australian carbon credit units issued under the Carbon Farming Initiative would remain constant at the historical average level of 2014-15 to 2018-19 over the period to 2029-30.

Income tax

- 81 per cent of affected businesses would be taxable, based on an analysis of company tax data provided by the Australian Taxation Office.
- Affected businesses would pay out 70 per cent of net profits as dividends.
- Domestic shareholders would receive 40 per cent of total dividends from affected businesses and claim imputation credits.

Component 2

Household compensation package

- The number of social welfare payment recipients affected by the proposal can be projected over time based on the growth in the overall number of social welfare recipients for each payment type, with allowance made for previous and announced policy changes.

Methodology

Component 1

Carbon price

The total number of taxable carbon-dioxide-equivalent greenhouse gas emissions was calculated by summing direct emissions from affected facilities and then subtracting the number of free permits and carbon credits issued each year. The number of free permits issued each year was calculated by multiplying the estimated total of scope 1 and scope 2 emissions of manufacturing facilities by the proportions specified in the proposal.

The financial implications of the proposal were estimated by multiplying the estimated total number of taxable carbon-dioxide-equivalent greenhouse gas emissions by the carbon price for each year, taking into account the assumptions outlined above and then adjusting for company tax impacts.

Departmental expenses for the Department of the Environment and Energy to administer the proposal were based on the departmental expenses for previous costings with similar levels of administrative complexity.

Component 2

Household compensation package

Financial implications were calculated by multiplying the number of new and existing recipients by the additional energy supplement amount payable for each group.

- The additional energy supplement amount payable is equal to base payment plus 30 per cent for newly eligible recipients and 30 per cent increase for existing recipients.
- The number of newly eligible recipients was estimated based on the 2016-17 Budget measure *National Disability Insurance Scheme Savings Fund* costing model.

The PBO updated the model to reflect population and average payment rates as at the 2019 Pre-election Economic and Fiscal Outlook and applied indexation as specified in the proposal.

The financial implications were projected over the medium term by applying the appropriate payment population and indexation growth rates.

Data sources

The Australian Taxation Office provided de-identified unit record data on company tax returns for the 2016-17 income year.

The Department of the Environment and Energy provided de-identified facility level data on carbon emissions for the 2008-09 to 2016-17 financial years, which was collected under the National Greenhouse Energy Reporting Scheme.

Department of the Environment and Energy, 2018. *Quarterly Update of Australia's National Greenhouse Gas inventory: December 2017*, Canberra: Commonwealth of Australia.

Clean Energy Regulator, 2018. *Report on total number of Australian carbon credit units issued*, Canberra: Commonwealth of Australia.

Clean Energy Regulator, 2018. *Emissions-intensive trade-exposed activity summary 2017*, Canberra: Commonwealth of Australia.

Commonwealth of Australia, 2019. *2019 Pre-election Economic and Fiscal Outlook*, Canberra: Commonwealth of Australia.

Commonwealth of Australia, 2018. *Australia's emissions projections 2018,* Canberra: Commonwealth of Australia.

Commonwealth of Australia, 2013. *Climate Change Mitigation Scenarios – Modelling report provided to the Climate Change Authority in support of its Caps and Targets Review*, Canberra: Commonwealth of Australia.

The Department of Finance provided indexation parameters as at the 2019 Pre-election Economic and Fiscal Outlook.

The Department of Social Services provided the model for its component of the 2016-17 Budget measure *National Disability Insurance Scheme Savings Fund*.

The Department of Veterans' Affairs provided the model for its component of the 2016-17 Budget measure *National Disability Insurance Scheme Savings Fund*.

Attachment A – Reintroduce a price on pollution to ensure polluters pay for the damage they are doing – financial implications

Table A1: Reintroduce a price on pollution to ensure polluters pay for the damage they are doing – Fiscal balance ($m)(a)(b)

	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	2029–30	**Total to 2022–23**	**Total to 2029–30**
Revenue													
Component 1 – Carbon price	*7,200*	*7,500*	*7,900*	*10,300*	*10,900*	*11,600*	*12,300*	*13,000*	*13,800*	*14,100*	*14,500*	***33,000***	***123,200***
Component 1 – Income taxes	*-*	*-3,500*	*-2,200*	*-2,700*	*-3,000*	*-3,200*	*-3,400*	*-3,600*	*-3,800*	*-4,000*	*-4,100*	***-8,400***	***-33,600***
Total – revenue	**7,200**	**4,000**	**5,700**	**7,600**	**7,900**	**8,400**	**8,900**	**9,400**	**10,000**	**10,100**	**10,400**	**24,600**	**89,600**
Expenses													
Administered													
Component 2 – Household compensation package	*-630*	*-690*	*-760*	*-830*	*-910*	*-980*	*-1,070*	*-1,150*	*-1,240*	*-1,340*	*-1,450*	***-2,910***	***-11,040***
Total – administered	***-630***	***-690***	***-760***	***-830***	***-910***	***-980***	***-1,070***	***-1,150***	***-1,240***	***-1,340***	***-1,450***	**-2,910**	**-11,040**
Departmental													
Component 1 – Administration of the carbon price	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	***-40***	***-110***
Component 2 – Administration of the compensation package	*-3*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	***-5***	***-9***
Total – departmental	***-13***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	**-45**	**-119**
Total – expenses	**-643**	**-701**	**-771**	**-841**	**-921**	**-991**	**-1,081**	**-1,161**	**-1,251**	**-1,351**	**-1,461**	**-2,955**	**-11,159**
Total	**6,557**	**3,299**	**4,929**	**6,759**	**6,979**	**7,409**	**7,819**	**8,239**	**8,749**	**8,749**	**8,939**	**21,645**	**78,441**

(a) A positive number for the fiscal balance indicates an increase in revenue or a decrease in expenses or net capital investment in accrual terms. A negative number for the fiscal balance indicates a decrease in revenue or an increase in expenses or net capital investment in accrual terms.

(b) Figures may not sum to totals due to rounding.

\- Indicates nil.

Table A2: Reintroduce a price on pollution to ensure polluters pay for the damage they are doing – Underlying cash balance ($m)[(a)(b)]

	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	2029–30	Total to 2022–23	Total to 2029–30
Receipts													
Component 1 – Carbon price	*5,400*	*7,500*	*7,800*	*9,700*	*10,800*	*11,400*	*12,100*	*12,800*	*13,600*	*14,100*	*14,400*	***30,400***	***119,600***
Component 1 – Income taxes	*-*	*-3,500*	*-2,200*	*-2,700*	*-3,000*	*-3,200*	*-3,400*	*-3,600*	*-3,800*	*-4,000*	*-4,100*	***-8,400***	***-33,600***
Total – receipts	**5,400**	**4,000**	**5,600**	**7,000**	**7,800**	**8,200**	**8,700**	**9,200**	**9,800**	**10,100**	**10,300**	**22,000**	**86,000**
Payments													
Administered													
Component 2 – Household compensation package	*-630*	*-690*	*-760*	*-830*	*-910*	*-980*	*-1,070*	*-1,150*	*-1,240*	*-1,340*	*-1,450*	***-2,910***	***-11,040***
Total – administered	***-630***	***-690***	***-760***	***-830***	***-910***	***-980***	***-1,070***	***-1,150***	***-1,240***	***-1,340***	***-1,450***	**-2,910**	**-11,040**
Departmental													
Component 1 – Administration of the carbon price	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	*-10*	***-40***	***-110***
Component 2 – Administration of the compensation package	*-3*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	*-1*	***-5***	***-9***
Total – departmental	***-13***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-11***	***-45***	***-119***
Total – payments	**-643**	**-701**	**-771**	**-841**	**-921**	**-991**	**-1,081**	**-1,161**	**-1,251**	**-1,351**	**-1,461**	**-2,955**	**-11,159**
Total	**4,757**	**3,299**	**4,829**	**6,159**	**6,879**	**7,209**	**7,619**	**8,039**	**8,549**	**8,749**	**8,839**	**19,045**	**74,841**

(a) A positive number for the underlying cash balance indicates an increase in receipts or a decrease in payments or net capital investment in cash terms. A negative number for the underlying cash balance indicates a decrease in receipts or an increase in payments or net capital investment in cash terms.

(b) Figures may not sum to totals due to rounding.

\- Indicates nil.