Parliamentary Budget Office

Policy costing

Invest in crucial infrastructure to reboot recycling and introduce a ban on single-use plastics	
Party:	Australian Greens

Summary of proposal:

This proposal consists of three components.

- Component 1: Invest $500 million in waste avoidance and resource recovery initiatives

  This component would increase the Clean Energy Finance Corporation's (CEFC) credit facility by an additional $500 million to invest in waste avoidance and resource recovery initiatives. The additional funds would be rolled out in line with previous CEFC lending arrangements.
- Component 2: Establish a plastics co-operative research centre in Hobart

  This component would establish a plastics co-operative research centre in Hobart with funding of $50 million over ten years, with operational costs indexed in line with changes in the consumer price index (CPI). Departmental expenses would be included in this amount.
- Component 3: Introduce a ban on selected single-use plastic items by 2025.

This proposal would have effect from 1 July 2019.

Costing overview

This proposal would be expected to decrease the fiscal balance by $27.1 million, the underlying cash balance by $15.9 million and the headline cash balance by $188.6 million over the 2019-20 Budget forward estimates period.

The proposal would be expected to have financial implications beyond the 2019-20 Budget forward estimates period. A breakdown of the financial implications from 2019-20 to 2029-30 is provided at Attachment A.

Consistent with Parliamentary Budget Office (PBO) Guidance 02/2015, public debt interest (PDI) expense impacts have been included in this costing because the concessional finance provided under this proposal involves transactions in financial assets.

The fiscal, underlying cash and headline cash balance impacts differ due to how they treat the loan's concessional interest rate, and the flow of loan principal and interest repayment amounts. Only the fiscal balance includes an estimate of the concessional loan discount expense and associated unwinding income. Only the headline cash balance includes changes in loans issued and principal repayments. A note on the accounting treatment of concessional loans is included at Attachment B.

The estimates of the financial implications for Component 1 are highly sensitive to assumptions regarding the funding profile, the availability and timing of appropriate projects that would be eligible for financing under this proposal, and the financial performance of the portfolio. The estimates of the value of the concession are sensitive to the assumed market rate for loans. The estimates of the financial implications for Component 2 are highly certain as they are based on a specified capped amount. The estimates of the financial implications for Component 3 are sensitive to the assumption that any direct implementation costs would be incurred by industry.

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

	2019–20	2020–21	2021–22	2022–23	**Total to 2022–23**
Fiscal balance	-6.0	-6.8	-7.1	-7.2	**-27.1**
Underlying cash balance	-4.7	-4.5	-3.7	-3.0	**-15.9**
Headline cash balance	-22.3	-39.4	-55.4	-71.3	**-188.6**

(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: Invest $500 million in waste avoidance and resource recovery initiatives

- The funding commitment and deployment under this component, including the split between loans and equity investments, would reflect the CEFC's investment profile as at the 2019 Pre-election Economic and Fiscal Outlook.
- The contributions to be made under this component would be drawn down from the Special Account only when they are ready to be deployed. The CEFC would enter into $100 million of commitments each year for five years. These $100 million commitments would each be deployed evenly over five years. For example, $20 million would be deployed in the first year of the proposal, $40 million in the second, and so on. The entire $500 million would be invested over 10 years with the single year peak being $100 million in the fifth year.
- Loans would be issued to investment grade institutions and default rates would be relatively low at 1.5 per cent.
- The average maturity of concessional loans would be seven years, with principal repayments being reinvested in subsequent loans on an annual basis.
- Projects financed via equity injections would meet agreed rates of return and payments consistent with the CEFC's investment mandate over the 2019-20 Budget forward estimates period. These would not be expected to mature over the medium term (to 2029-30), and hence would not return any principal over that period.
- All interest rates (concessional, market and return on equity investment) used in this costing would move in line with the five-year government bond rate projection.

Component 3: Introduce a ban on selected single-use plastic items by 2025

- This component would have no material financial impact on the Commonwealth budget as it would be implemented through regulatory change with any related costs incurred by industry.

Methodology

Component 1: Invest $500 million in waste avoidance and resource recovery initiatives

A concessional loan model was developed to estimate the financial implications of this component. The model is based on the Department of Finance Accounting for Concessional Loans policy guidelines.

The model incorporates relevant aspects of the CEFC's operations as at the 2019 Pre-election Economic and Fiscal Outlook, including investment profiles, loan terms, the concessional interest rate, and principal reinvestment.

Component 2: Establish a plastics co-operative research centre in Hobart

The financial implications of this component were based on the specified amount over the specified period. The annual profile of the administered expenses was determined by distributing the total expenses evenly across the ten years, after adjusting for annual increases in line with changes in the CPI. Departmental expense estimates were based on similar-sized programs.

All components

All estimates have been rounded to the nearest $100,000.

Data sources

The Department of the Environment and Energy provided costing models relating to the CEFC as at the 2019 Pre-election Economic and Fiscal Outlook.

Department of Finance 2016. *Accounting for concessional loans*, Resource Management Guide No. 115. [Online] Available at https://www.finance.gov.au/sites/default/files/rmg-115-accounting-forconcessional-loans.pdf [Accessed 03.05.2019].

Parliamentary Budget Office, 2015. *Public Debt Interest (PDI) payments in PBO costings*, PBO Guidance 02/2015, Canberra: PBO.

Reserve Bank of Australia, 2018. *Financial Stability Review October 2018*. [Online] Available at https://www.rba.gov.au/publications/fsr/2018/oct/pdf/financial-stability-review-2018-10.pdf [Accessed 03.05.2019].

Reserve Bank of Australia, 2019. *Statistical Tables: Indicator Lending Rates – F5*. [Online] Available at https://www.rba.gov.au/statistics/tables/ [Accessed 03.05.2019].

Attachment A – Invest in crucial infrastructure to reboot recycling and introduce a ban on single-use plastics – financial implications

Table A1: Invest in crucial infrastructure to reboot recycling and introduce a ban on single-use plastics – 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: Income from unwinding concessional loan discounts	*0.4*	*1.2*	*2.4*	*4.0*	*6.0*	*7.5*	*8.8*	*9.5*	*9.9*	*9.9*	*9.8*	***7.9***	***69.4***
Component 1: Loan interest accrued	*0.4*	*1.3*	*2.6*	*4.4*	*7.5*	*10.8*	*13.8*	*16.5*	*18.5*	*19.7*	*20.8*	***8.8***	***116.6***
Component 1: Dividends on equity investments	*..*	*0.1*	*0.2*	*0.4*	*0.6*	*0.7*	*0.8*	*0.8*	*0.9*	*0.9*	*0.9*	***0.8***	***6.2***
Total – revenue	**0.8**	**2.6**	**5.2**	**8.8**	**14.1**	**19.0**	**23.4**	**26.8**	**29.3**	**30.5**	**31.5**	**17.5**	**192.2**
Expenses													
Administered													
Component 1: Concessional loan discount expense	*-1.7*	*-3.5*	*-5.7*	*-8.1*	*-10.8*	*-10.7*	*-10.5*	*-10.3*	*-9.8*	*-9.1*	*-9.6*	***-18.9***	***-89.7***
Component 1: Write downs	*-*	*-*	*-*	*-*	*-*	*-*	*-0.3*	*-0.5*	*-0.9*	*-1.2*	*-1.7*	***-***	***-4.6***
Component 2: Establish a plastics co-operative research centre in Hobart	*-4.3*	*-4.4*	*-4.5*	*-4.7*	*-4.8*	*-4.9*	*-5.0*	*-5.1*	*-5.3*	*-5.4*	*-*	***-18.0***	***-48.5***
Component 3: Introduce a ban on single-use plastics by 2025	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	***-***	***-***
Total – administered	***-6.0***	***-7.9***	***-10.2***	***-12.8***	***-15.6***	***-15.6***	***-15.8***	***-15.9***	***-16.0***	***-15.7***	***-11.3***	***-36.9***	***-142.8***
Departmental													
Component 1: Department of the Environment and Energy	*-0.2*	*-0.4*	*-0.6*	*-0.8*	*-1.0*	*-*	*-*	*-*	*-*	*-*	*-*	***-2.1***	***-3.1***
Component 2: Department of the Environment and Energy	*-0.4*	*-0.5*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-*	***-1.1***	***-1.5***
Component 3: Department of the Environment and Energy	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	***-***	***-***
Total – departmental	***-0.6***	***-0.9***	***-0.7***	***-0.9***	***-1.1***	***-0.1***	***-0.1***	***-0.1***	***-0.1***	***-0.1***	***-***	***-3.2***	***-4.6***
Total – expenses	**-6.6**	**-8.8**	**-10.9**	**-13.7**	**-16.7**	**-15.7**	**-15.9**	**-16.0**	**-16.1**	**-15.8**	**-11.3**	**-40.1**	**-147.4**
Total (excluding PDI)	**-5.8**	**-6.2**	**-5.7**	**-4.9**	**-2.6**	**3.3**	**7.5**	**10.8**	**13.2**	**14.7**	**20.2**	**-22.6**	**44.8**
PDI impacts	**-0.2**	**-0.6**	**-1.4**	**-2.3**	**-3.8**	**-5.7**	**-7.4**	**-8.5**	**-9.0**	**-8.9**	**-8.9**	**-4.5**	**-56.7**
Total (including PDI)	**-6.0**	**-6.8**	**-7.1**	**-7.2**	**-6.4**	**-2.4**	**0.1**	**2.3**	**4.2**	**5.8**	**11.3**	**-27.1**	**-11.9**

(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: Invest in crucial infrastructure to reboot recycling and introduce a ban on single-use plastics – 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: Interest repayments received on loans	*0.4*	*1.3*	*2.6*	*4.4*	*7.5*	*10.8*	*13.8*	*16.5*	*18.5*	*19.7*	*20.8*	***8.8***	***116.6***
Component 1: Dividends on equity investments	*..*	*0.1*	*0.2*	*0.4*	*0.6*	*0.7*	*0.8*	*0.8*	*0.9*	*0.9*	*0.9*	***0.8***	***6.2***
Total – receipts	**0.4**	**1.4**	**2.8**	**4.8**	**8.1**	**11.5**	**14.6**	**17.3**	**19.4**	**20.6**	**21.7**	**9.6**	**122.8**
Payments													
Administered													
Component 2: Establish a plastics co-operative research centre in Hobart	*-4.3*	*-4.4*	*-4.5*	*-4.7*	*-4.8*	*-4.9*	*-5.0*	*-5.1*	*-5.3*	*-5.4*	*-*	***-18.0***	***-48.5***
Component 3: Introduce a ban on single-use plastics by 2025	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	***-***	***-***
Total – administered	***-4.3***	***-4.4***	***-4.5***	***-4.7***	***-4.8***	***-4.9***	***-5.0***	***-5.1***	***-5.3***	***-5.4***	***-***	***-18.0***	***-48.5***
Departmental													
Component 1: Department of the Environment and Energy	*-0.2*	*-0.4*	*-0.6*	*-0.8*	*-1.0*	*-*	*-*	*-*	*-*	*-*	*-*	***-2.1***	***-3.1***
Component 2: Department of the Environment and Energy	*-0.4*	*-0.5*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-*	***-1.1***	***-1.5***
Component 3: Department of the Environment and Energy	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	***-***	***-***
Total – departmental	***-0.6***	***-0.9***	***-0.7***	***-0.9***	***-1.1***	***-0.1***	***-0.1***	***-0.1***	***-0.1***	***-0.1***	***-***	***-3.2***	***-4.6***
Total – payments	**-4.9**	**-5.3**	**-5.2**	**-5.6**	**-5.9**	**-5.0**	**-5.1**	**-5.2**	**-5.4**	**-5.5**	**-**	**-21.2**	**-53.1**
Total (excluding PDI)	**-4.5**	**-3.9**	**-2.4**	**-0.8**	**2.2**	**6.5**	**9.5**	**12.1**	**14.0**	**15.1**	**21.7**	**-11.6**	**69.7**
PDI impacts	**-0.2**	**-0.6**	**-1.3**	**-2.2**	**-3.7**	**-5.6**	**-7.2**	**-8.4**	**-9.0**	**-8.9**	**-8.9**	**-4.3**	**-56.1**
Total (including PDI)	**-4.7**	**-4.5**	**-3.7**	**-3.0**	**-1.5**	**0.9**	**2.3**	**3.7**	**5.0**	**6.2**	**12.8**	**-15.9**	**13.6**

(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.

.. Not zero but rounded to zero.

\- Indicates nil.

Table A3: Invest in crucial infrastructure to reboot recycling and introduce a ban on single-use plastics – Headline 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: Loan repayments	2.4	7.5	15.7	27.3	43.1	58.9	74.6	87.7	97.5	103.0	105.8	**52.8**	**623.5**
Component 1: Interest repayments received on loans	0.4	1.3	2.6	4.4	7.5	10.8	13.8	16.5	18.5	19.7	20.8	**8.8**	**116.6**
Component 1: Equity repayments	-	-	-	-	-	-	-	-	-	-	-	-	-
Component 1: Dividends on equity investments	..	0.1	0.2	0.4	0.6	0.7	0.8	0.8	0.9	0.9	0.9	**0.8**	**6.2**
Total – receipts	**2.8**	**8.9**	**18.5**	**32.1**	**51.2**	**70.4**	**89.2**	**105.0**	**116.9**	**123.6**	**127.5**	**62.4**	**746.3**
Payments													
Administered													
Component 1: Loans made	-17.1	-35.9	-58.2	-82.8	-112.6	-112.3	-111.4	-109.9	-105.5	-97.5	-103.0	**-194.0**	**-946.2**
Component 1: Equity investments	-2.9	-6.5	-9.2	-12.8	-14.7	-10.9	-7.6	-4.7	-2.2	-	-	**-31.5**	**-71.5**
Component 2: Establish a plastics co-operative research centre in Hobart	-4.3	-4.4	-4.5	-4.7	-4.8	-4.9	-5.0	-5.1	-5.3	-5.4	-	**-18.0**	**-48.5**
Component 3: Introduce a ban on single-use plastics by 2025	-	-	-	-	-	-	-	-	-	-	-	-	-
Total – administered	***-24.3***	***-46.8***	***-71.9***	***-100.3***	***-132.1***	***-128.1***	***-124.0***	***-119.7***	***-113.0***	***-102.9***	***-103.0***	***-243.5***	***-1,066.2***
Departmental													
Component 1: Department of the Environment and Energy	-0.2	-0.4	-0.6	-0.8	-1.0	-	-	-	-	-	-	**-2.1**	**-3.1**
Component 2: Department of the Environment and Energy	-0.4	-0.5	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	**-1.1**	**-1.5**
Component 3: Department of the Environment and Energy	-	-	-	-	-	-	-	-	-	-	-	-	-
Total – departmental	***-0.6***	***-0.9***	***-0.7***	***-0.9***	***-1.1***	***-0.1***	***-0.1***	***-0.1***	***-0.1***	***-0.1***	***-***	***-3.2***	***-4.6***
Total – payments	**-24.9**	**-47.7**	**-72.6**	**-101.2**	**-133.2**	**-128.2**	**-124.1**	**-119.8**	**-113.1**	**-103.0**	**-103.0**	**-246.7**	**-1,070.8**
Total (excluding PDI)	**-22.1**	**-38.8**	**-54.1**	**-69.1**	**-82.0**	**-57.8**	**-34.9**	**-14.8**	**3.8**	**20.6**	**24.5**	**-184.3**	**-324.5**
PDI impacts	**-0.2**	**-0.6**	**-1.3**	**-2.2**	**-3.7**	**-5.6**	**-7.2**	**-8.4**	**-9.0**	**-8.9**	**-8.9**	**-4.3**	**-56.1**
Total (including PDI)	**-22.3**	**-39.4**	**-55.4**	**-71.3**	**-85.7**	**-63.4**	**-42.1**	**-23.2**	**-5.2**	**11.7**	**15.6**	**-188.6**	**-380.6**

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

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

.. Not zero but rounded to zero.

\- Indicates nil.

Attachment B – Accounting treatment of concessional loans

A concessional loan is a loan provided on more favourable terms than the borrower could obtain in the financial market. The most common concession is a below-market interest rate, but concessions can also include favourable repayment conditions. The income contingent loans available through the Higher Education Loan Program are an example of concessional loans offered by the Commonwealth.

Budget impact[1]

The accounting treatment of concessional loans differs across each budget aggregate. The underlying cash balance only captures actual flows of interest related to the loans. The headline cash balance captures actual flows of principal as well as interest. The fiscal balance captures accrued interest, the value of the concession and any write-offs related to the loans. The interest cost of financing these loans is captured in all budget aggregates, and is separately identified by the PBO.[2] (Table B1 provides information about the detail provided in a costing.) The provision of concessional loans decreases the Commonwealth Government's net worth if the liabilities issued (the value of Commonwealth Government Securities (CGS) issued to finance the loans) are greater than the assets created (measured at their 'fair value' or price at which the loans could be sold).

Treatment of debt not expected to be repaid

All budget aggregates take into account estimates of the share of loans not expected to be repaid when calculating interest flows and estimating the value of the concession that is being provided. None of the measures capture the direct impact on net worth of the loans not expected to be repaid. If a portion of loans are not expected to be repaid, estimates of the 'fair value' of the loans outstanding will be reduced. Such reductions, both when loans are issued and if loans are subsequently re-valued, are recorded in the budget under 'Other economic flows' which are reflected in net worth but not in the budget aggregates.

Table B1: Components of concessional loan financial impacts in costing proposals

Budget item	Appears in	Comments
Interest accrued or received	All budget aggregates	Captures the interest accrued or expected to be received on the fair value of the debt. (The budget cannot include interest income on a debt that is not expected to be repaid.)
Concessional loan discount expense and unwinding revenue	Fiscal balance	The net present value of the concession (based on the difference between the market and concessional interest rates) is captured as an expense in the fiscal balance. As loans are repaid, the remaining value of the concession reduces, so this expense is 'unwound' with a positive impact on the fiscal balance. The concessional discount and its unwinding are not recognised in cash balances as there is no cash inflow or outflow.
Write-offs	Fiscal balance	Debt forgiveness, also known as mutually agreed write-downs (for example in the case of the death of the borrower of a HELP loan) are expensed when they occur, reducing the fiscal balance. These transactions do not affect the cash balances as no cash flows occur.
Initial loan; principal repayments	Headline cash balance	Higher estimates of loans not expected to be repaid lowers principal repayments. These transactions are not included in the fiscal balance or underlying cash balance as they involve the exchange of one financial asset (loan) for another (cash).
Public debt interest (PDI)	All budget aggregates	The PDI impact is the cost of the change in the government's borrowing requirements to fund the loans. The net headline cash balance impact excluding PDI is used to estimate the proposal's impact on PDI payments.

[1] The PBO's treatment of these loans is consistent with the Department of Finance costing guidelines.
[2] This is in accordance with PBO Guidance 02/2015 and the Charter of Budget Honesty Policy Costing Guidelines which specify that costings of proposals that 'involve transactions of financial assets' need to take into account the impact on PDI payments.