Parliamentary Budget Office

A Circular Economy	
Party:	Australian Greens

Summary of proposal:

The proposal would commence from 1 July 2022 and consists of 6 components. These would be ongoing, unless specified otherwise below.

Component 1 would increase the credit facility of the Clean Energy Finance Corporation (CEFC) 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 would provide $50 million of funding over 10 years to establish a plastics research centre in Hobart, with operational costs indexed in line with changes in the consumer price index (CPI). Departmental expenses would be included in this amount.

Component 3 would introduce a ban on single-use plastic items by 2025. There would be exceptions for medical uses such as condoms, hospital goods, and plastic straws for people who have a genuine need.

Component 4 would develop a "Made with Australian Recycled Content" label. This label would allow for producers to place a label on products that have been made with Australian recycled content.

Component 5 would provide funding for every council to have ready access to commercial composting facilities. Funding would be limited to the up-front capital costs of establishing the facilities.

Component 6 would introduce a ban on solid waste incineration by 2025. The ban would exclude waste-to-energy through methane capture at landfill or composting facilities, and for heat purposes alone (such as the burning of tyres in a cement kiln).

Costing overview

This proposal would be expected to decrease the fiscal balance by around $1,144 million, the underlying cash balance by around $1,126 million, and the headline cash balance by around $1,300 million over the 2022-23 Budget forward estimates period. This is predominantly due to an increase in administered expenses.

This proposal would have an ongoing impact beyond the 2022-23 Budget forward estimates period. A breakdown of the financial implications over the period to 2032-33 is provided at Attachment A.

The financial implications of this proposal are highly uncertain. In particular:

- Component 1 is sensitive to assumptions on the speed that capital is deployed, interest rates, share of debt not repaid and the average maturity period of investments.
  - This costing does not include the proposal's potential impact on company tax revenue and business profits, which could be affected by:

    - crowding-out effects, where:
        1. companies switch their financing arrangements to the concessional loans provided under this proposal, thus impacting the profits of their lenders
        2. reductions in the returns of competing investment projects result in fewer investments by firms that do not borrow from the CEFC, which would impact company tax revenue collected from competing firms.
    - crowding-in effects, where there would be an increase in the level of investment following a reduction in the cost of capital from this proposal.
  - It is unclear whether the crowding out or crowding in effect would dominate and to what magnitude. Additionally, this impact could vary from period to period.
- Components 3 and 6 are sensitive to the assumption that any direct implementation costs would be incurred by industry.
- Component 5 is sensitive to assumptions around the number of commercial composting facilities that would need to be built and the average cost of each facility.
  - This reflects the large dispersion of regional and rural councils, which also increases uncertainty around up-front and on-going operational costs, and impact on council participation.
  - There could be further complications from ongoing policy developments in the sector including the *National Waste Policy Action Plan 2019,* under which the 3 levels of government have agreed to support certain organic waste measures over the next few years, including halving organic wastes sent to landfill by 2030.

Consistent with *Parliamentary Budget Office (PBO) Guidance 02/2015,* public debt interest expense impacts have been included in this costing because the equity injections and concessional loans provided under this proposal involve financial asset transactions.

The fiscal, underlying cash and headline cash balance impacts differ in the treatment of interest and dividend payments and the flow of loan principal and equity amounts. In particular:

- only the fiscal balance reflects the concessional loan discount expense, associated unwinding income and loan write-downs
- only the headline cash balance includes transactions related to loan principal amounts and equity investments.

A note on the accounting treatment of concessional loans is included at Attachment B.

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

	2022-23	2023-24	2024-25	2025-26	**Total to 2025-26**
Fiscal balance	-187.2	-361.6	-380.6	-214.8	**-1,144.2**
Underlying cash balance	-185.5	-357.9	-375.1	-207.7	**-1,126.2**
Headline cash balance	-203.2	-393.3	-427.4	-275.9	**-1,299.8**

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

Key assumptions

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

Component 1

- Committed funding would not impact consolidated revenue until funding is deployed or drawn down for investment or operational purposes.
- The CEFC would commit $100 million each year for 5 years with funding deployed evenly.
  - Each tranche of funding would also be deployed evenly over 5 years after it is made available. This is consistent with the time needed to assess eligibility, the average length of investment projects, and provides staged funding to projects.
- Average investment maturity would be around 7 years, consistent with the CEFC's investment management experience to date.
- Market interest rates would move in line with the 5-year government bond rate projections.
- Interest payments and dividend earnings on investments would be returned to consolidated revenue and repaid capital would be reinvested, consistent with the operation of the CEFC.
- Debt not expected to be repaid is assumed to be 5% of loans issued, as this proposal would involve high-risk early-stage enterprises and innovations.
- Any invested equity returned to the CEFC would be reinvested in the same financial year.
- Departmental costs would be broadly consistent with the costs of the CEFC relative to the amount of funding administered.

Component 3

- This component would have no material financial implications, as it would be implemented through regulatory change with any related costs incurred by industry.

Component 4

- Costs to the Australian Government would only relate to the development and general governance of the labelling, as well as the information campaign to educate relevant parties on the new labelling requirements.
  - This is consistent with the 2016-17 Budget measure *Country of Origin Labelling — information and compliance*.
  - All other costs would be met by industry, manufacturers and consumers.

Component 5

- Most councils that currently do not offer green waste collection services would be provided funding for a commercial composting facility.
- All councils that receive up-front capital-cost funding would commit to funding the necessary ongoing costs, such as operating and maintenance.
- The average cost per facility would be similar to a comparable project in the United States, after considering adjustments to account for higher costs for regional areas.
- The majority of the costs would be incurred in the first 4 years, with the remainder tapering off over the medium term. This accounts for the necessary time to secure sites, acquire required

licences, commence and complete construction, and source plant and equipment. Some councils would take longer than others to access the funding.

- There would be no departmental costs, as funding would be provided directly to local councils.

Component 6

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

Methodology

Financial implications were rounded consistent with the PBO's rounding rules as outlined on the PBO Costings and budget information webpage.[1]

Component 1

Estimates for the equity commitment were developed using information on the CEFC provided by the Department of Industry, Science, Energy and Resources, including funding commitments, drawdowns, interest payments and dividends.

- Around 90% of committed funds would be provided as concessional loans and the remainder as invested equity, consistent with the current commitment and investment schedule of the CEFC.
  - Repaid capital would be reinvested and deployed to additional projects.
  - Interest payments and dividend earnings on investments would be returned to the consolidated revenue fund.
- Departmental costs were calculated as a share of total loan and equity amounts, consistent with the current operational expenses of the CEFC.

Component 2

The financial implications 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 10 years, after adjusting for annual increases in line with the consumer price index.
- Departmental expense estimates were based on similar-sized programs.

Component 4

The financial implications were informed by the funding profile of the 2016-17 Budget measure, *Country of Origin Labelling — information and compliance* in which a similar administered and departmental funding profile was calculated and grown by the CPI.

Component 5

The financial implications were calculated by multiplying the estimated number of councils (Local Government Areas) without ready access to a commercial composting facility by the estimated cost of constructing and fitting out each facility.

[1] https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Budget_Office/Costings_and_budget_information

Data sources

Information on the CEFC's funding commitments, equity investments, concessional loans, and operational expenses over the 2022-23 Budget forward estimates period was provided by the Department of Industry, Science, Energy and Resources as at the *Budget 2022-23*.

The Department of Industry, Science, Energy and Resources also provided information on future funding and loan commitments for waste-to-energy projects.

The Department of Finance and the Treasury provided the economic parameters as at the *Budget 2022-23*.

Reserve Bank of Australia, 2022. *Indicator lending rates – F5*, accessed 4 May 2022.

Department of Industry, Innovation and Science, 2016. *Country of origin labelling, Decision Regulation Impact Statement, Consumer Affairs Australia New Zealand*, accessed 4 May 2022.

The Commonwealth of Australia, 2016. *Budget Paper No. 2 - 2016-17*, accessed 4 May 2022.

Australian Bureau of Statistics, 2022. *Consumer Price Index, Australia*, accessed 4 May 2022.

Athens-Clark County Unified Government, n.d. *Commercial Composting*, accessed 4 May 2022.

Department of Agriculture, Water and the Environment, 2021. *Interactive Map – Food Organics and Garden Organics Pickup*. accessed 4 May 2022.

Department of Agriculture, Water and the Environment, 2019. *National Waste Policy Action Plan*, accessed 4 May 2022.

Attachment A – A Circular Economy – financial implications

Table A1: A Circular Economy – Fiscal balance ($m)[(a)]

	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	Total to 2025-26	Total to 2032-33
Revenue													
Component 1 - Unwinding concessional loan discounts	*0.2*	*0.5*	*1.1*	*1.8*	*2.9*	*3.9*	*4.6*	*5.1*	*5.4*	*5.4*	*5.3*	***3.6***	***36.2***
Component 1 - Loan interest	*0.6*	*1.7*	*3.3*	*5.6*	*8.6*	*11.3*	*13.5*	*15.2*	*16.3*	*16.8*	*17.4*	***11.2***	***110.3***
Component 1 - Dividend income	*0.1*	*0.2*	*0.3*	*0.6*	*0.9*	*1.1*	*1.2*	*1.3*	*1.3*	*1.3*	*1.3*	***1.2***	***9.6***
Total – revenue	**0.9**	**2.4**	**4.7**	**8.0**	**12.4**	**16.3**	**19.3**	**21.6**	**23.0**	**23.5**	**24.0**	**16.0**	**156.1**
Expenses													
Administered													
Component 1 - Concessional loan discount	*-0.7*	*-1.6*	*-2.5*	*-3.6*	*-6.0*	*-5.9*	*-5.8*	*-5.6*	*-5.3*	*-4.9*	*-5.1*	***-8.4***	***-47.0***
Component 1 - Other financing costs	*-0.9*	*-1.8*	*-3.0*	*-4.3*	*-5.8*	*-5.7*	*-5.6*	*-5.5*	*-5.2*	*-4.7*	*-5.0*	***-10.0***	***-47.5***
Component 2 - Plastics research centre	*-3.9*	*-4.0*	*-4.1*	*-4.2*	*-4.3*	*-4.4*	*-4.5*	*-4.6*	*-4.7*	*-4.8*	*-5.0*	***-16.2***	***-48.5***
Component 4 - New label	*-11.9*	*-1.0*	*-1.0*	*-1.0*	*-1.0*	*-1.1*	*-1.1*	*-1.1*	*-1.1*	*-1.2*	*-1.2*	***-14.9***	***-22.7***
Component 5 - Supporting commercial composting facilities	*-167.0*	*-345.0*	*-355.0*	*-182.0*	*-37.0*	*-25.0*	*-20.0*	*-13.0*	*-7.0*	*-4.0*	*-3.0*	***-1,049.0***	***-1,158.0***
Total – administered	***-184.4***	***-353.4***	***-365.6***	***-195.1***	***-54.1***	***-42.1***	***-37.0***	***-29.8***	***-23.3***	***-19.6***	***-19.3***	***-1,098.5***	***-1,323.7***
Departmental payments	*-1.4*	*-1.6*	*-1.5*	*-1.6*	*-1.9*	*-1.9*	*-1.9*	*-1.9*	*-1.8*	*-1.7*	*-1.8*	***-6.1***	***-19.0***
Total – expenses	**-185.8**	**-355.0**	**-367.1**	**-196.7**	**-56.0**	**-44.0**	**-38.9**	**-31.7**	**-25.1**	**-21.3**	**-21.1**	**-1,104.6**	**-1,342.7**
Total (excluding PDI)	**-184.9**	**-352.6**	**-362.4**	**-188.7**	**-43.6**	**-27.7**	**-19.6**	**-10.1**	**-2.1**	**2.2**	**2.9**	**-1,088.6**	**-1,186.6**
PDI impacts	*-2.3*	*-9.0*	*-18.2*	*-26.1*	*-31.0*	*-34.5*	*-37.4*	*-39.9*	*-41.8*	*-43.1*	*-45.7*	***-55.6***	***-329.0***
Total (including PDI)	**-187.2**	**-361.6**	**-380.6**	**-214.8**	**-74.6**	**-62.2**	**-57.0**	**-50.0**	**-43.9**	**-40.9**	**-42.8**	**-1,144.2**	**-1,515.6**

(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.

Table A2: A Circular Economy – Underlying cash balance ($m)[(a)]

	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	Total to 2025-26	Total to 2032-33
Receipts													
Component 1 - Loan interest	*0.6*	*1.7*	*3.3*	*5.6*	*8.6*	*11.3*	*13.5*	*15.2*	*16.3*	*16.8*	*17.4*	***11.2***	***110.3***
Component 1 - Dividend income	*0.1*	*0.2*	*0.3*	*0.6*	*0.9*	*1.1*	*1.2*	*1.3*	*1.3*	*1.3*	*1.3*	***1.2***	***9.6***
Total – receipts	**0.7**	**1.9**	**3.6**	**6.2**	**9.5**	**12.4**	**14.7**	**16.5**	**17.6**	**18.1**	**18.7**	**12.4**	**119.9**
Payments													
Administered													
Component 2 - Plastics research centre	*-3.9*	*-4.0*	*-4.1*	*-4.2*	*-4.3*	*-4.4*	*-4.5*	*-4.6*	*-4.7*	*-4.8*	*-5.0*	***-16.2***	***-48.5***
Component 4 - New label	*-11.9*	*-1.0*	*-1.0*	*-1.0*	*-1.0*	*-1.1*	*-1.1*	*-1.1*	*-1.1*	*-1.2*	*-1.2*	***-14.9***	***-22.7***
Component 5 - Supporting commercial composting facilities	*-167.0*	*-345.0*	*-355.0*	*-182.0*	*-37.0*	*-25.0*	*-20.0*	*-13.0*	*-7.0*	*-4.0*	*-3.0*	***-1,049.0***	***-1,158.0***
Total – administered	***-182.8***	***-350.0***	***-360.1***	***-187.2***	***-42.3***	***-30.5***	***-25.6***	***-18.7***	***-12.8***	***-10.0***	***-9.2***	***-1,080.1***	***-1,229.2***
Departmental payments	*-1.4*	*-1.6*	*-1.5*	*-1.6*	*-1.9*	*-1.9*	*-1.9*	*-1.9*	*-1.8*	*-1.7*	*-1.8*	***-6.1***	***-19.0***
Total – payments	**-184.2**	**-351.6**	**-361.6**	**-188.8**	**-44.2**	**-32.4**	**-27.5**	**-20.6**	**-14.6**	**-11.7**	**-11.0**	**-1,086.2**	**-1,248.2**
Total (excluding PDI)	**-183.5**	**-349.7**	**-358.0**	**-182.6**	**-34.7**	**-20.0**	**-12.8**	**-4.1**	**3.0**	**6.4**	**7.7**	**-1,073.8**	**-1,128.3**
PDI impacts	*-2.0*	*-8.2*	*-17.1*	*-25.1*	*-30.5*	*-34.1*	*-37.1*	*-39.6*	*-41.5*	*-43.0*	*-45.4*	***-52.4***	***-323.6***
Total (including PDI)	**-185.5**	**-357.9**	**-375.1**	**-207.7**	**-65.2**	**-54.1**	**-49.9**	**-43.7**	**-38.5**	**-36.6**	**-37.7**	**-1,126.2**	**-1,451.9**

(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.

Table A3: A Circular Economy – Headline cash balance ($m)[(a)]

	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	Total to 2025-26	Total to 2032-33
Receipts													
Component 1 - Loan principal repayments	*2.0*	*7.0*	*15.0*	*27.0*	*43.0*	*58.0*	*73.0*	*86.0*	*95.0*	*100.0*	*101.0*	***51.0***	***607.0***
Component 1 - Loan interest	*0.6*	*1.7*	*3.3*	*5.6*	*8.6*	*11.3*	*13.5*	*15.2*	*16.3*	*16.8*	*17.4*	***11.2***	***110.3***
Component 1 - Dividend income	*0.1*	*0.2*	*0.3*	*0.6*	*0.9*	*1.1*	*1.2*	*1.3*	*1.3*	*1.3*	*1.3*	***1.2***	***9.6***
Total – receipts	**2.7**	**8.9**	**18.6**	**33.2**	**52.5**	**70.4**	**87.7**	**102.5**	**112.6**	**118.1**	**119.7**	**63.4**	**726.9**
Payments													
Administered													
Component 1 - Loans made	*-17.0*	*-37.0*	*-59.0*	*-85.0*	*-115.0*	*-114.0*	*-112.0*	*-109.0*	*-104.0*	*-95.0*	*-100.0*	***-198.0***	***-947.0***
Component 1 - Equity investments	*-2.7*	*-5.4*	*-8.3*	*-10.2*	*-11.9*	*-8.9*	*-6.3*	*-4.0*	*-1.9*	*-*	*-*	***-26.6***	***-59.6***
Component 2 - Plastics research centre	*-3.9*	*-4.0*	*-4.1*	*-4.2*	*-4.3*	*-4.4*	*-4.5*	*-4.6*	*-4.7*	*-4.8*	*-5.0*	***-16.2***	***-48.5***
Component 4 - New label	*-11.9*	*-1.0*	*-1.0*	*-1.0*	*-1.0*	*-1.1*	*-1.1*	*-1.1*	*-1.1*	*-1.2*	*-1.2*	***-14.9***	***-22.7***
Component 5 - Supporting commercial composting facilities	*-167.0*	*-345.0*	*-355.0*	*-182.0*	*-37.0*	*-25.0*	*-20.0*	*-13.0*	*-7.0*	*-4.0*	*-3.0*	***-1,049.0***	***-1,158.0***
Total – administered	***-202.5***	***-392.4***	***-427.4***	***-282.4***	***-169.2***	***-153.4***	***-143.9***	***-131.7***	***-118.7***	***-105.0***	***-109.2***	***-1,304.7***	***-2,235.8***
Departmental payments	*-1.4*	*-1.6*	*-1.5*	*-1.6*	*-1.9*	*-1.9*	*-1.9*	*-1.9*	*-1.8*	*-1.7*	*-1.8*	***-6.1***	***-19.0***
Total – payments	**-203.9**	**-394.0**	**-428.9**	**-284.0**	**-171.1**	**-155.3**	**-145.8**	**-133.6**	**-120.5**	**-106.7**	**-111.0**	**-1,310.8**	**-2,254.8**
Total (excluding PDI)	**-201.2**	**-385.1**	**-410.3**	**-250.8**	**-118.6**	**-84.9**	**-58.1**	**-31.1**	**-7.9**	**11.4**	**8.7**	**-1,247.4**	**-1,527.9**
PDI impacts	*-2.0*	*-8.2*	*-17.1*	*-25.1*	*-30.5*	*-34.1*	*-37.1*	*-39.6*	*-41.5*	*-43.0*	*-45.4*	***-52.4***	***-323.6***
Total (including PDI)	**-203.2**	**-393.3**	**-427.4**	**-275.9**	**-149.1**	**-119.0**	**-95.2**	**-70.7**	**-49.4**	**-31.6**	**-36.7**	**-1,299.8**	**-1,851.5**

(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.

\- 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[2]

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.[3] 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 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.

[2] The PBO's treatment of these loans is consistent with the Department of Finance costing guidelines.

[3] 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.