

#### ECR-2025-6088

Home electrification									
Party:	ndependent Member for Indi								
Summary of proposal:									
The proposal would establish a 4-year long government-backed loan scheme to enable homeowners to invest in solar, batteries, electric appliances and other energy and electrification upgrades ('The Scheme'). Loans granted would be up to \$20,000 per household and would be indexed by the lower of the Consumer Price Index (CPI) or the Wage Price Index (WPI).									
The proposal would start on	1 July 2025.								
Additional information (base	ed on further advice provided):								
The Scheme would be overseen and operated by a dedicated agency – the Office of Electrification – under the Department of Climate Change, Energy, Environment and Water (DCCEEW) portfolio of the Australian Government.									
The Scheme would issue loans until 30 June 2029. From 1 July 2029 onwards, the Office of Electrification would continue to operate to manage the outstanding loans issued under the Scheme.									
The Scheme would be open to applications for Australian residents who own a property with a household income of less than \$200,000 per year. All owner-occupiers would only be able to apply for and receive a single loan under the Scheme. Investors are eligible to receive one loan across their entire housing portfolio.									
Under the conditions of loan issuance under the Scheme, the value of the loan is secured against the property with the obligation for the property owner to repay the property upon sale of the property or upon collection from a deceased estate (as applicable).									
An applicant can elect to pai	rtially or wholly repay their obligation prior to the sale of their property.								
Costing overview									

The proposal would be expected to decrease the fiscal balance by around \$1.6 billion, the underlying cash balance by around \$39.4 million, and the headline cash balance by around \$11.1 billion over the 2025-26 Budget forward estimates period (see Table 1). This impact reflects an increase in administered expenses to fund the concessional loans under the Scheme, an increase in departmental expenses to administer the Scheme and an increase in administered revenue from loan repayments and interest.

The proposal would be expected to have an impact beyond the 2025-26 Budget forward estimates period. A breakdown of the financial implications over the period to 2035-36 is provided at Attachment A.

### Table 1: Home electrification – Financial implications (\$m)<sup>(a)(b)</sup>

	2025-26	2026-27	2027-28	2028-29	Total to 2028-29
Fiscal balance	-502.2	-382.8	-354.7	-340.7	-1,580.4
Underlying cash balance	30.8	26.2	-20.7	-75.7	-39.4
Headline cash balance	-3,266.2	-2,740.8	-2,603.7	-2,502.7	-11,113.4

(a) A positive number represents an increase in the relevant budget balance; a negative number represents a decrease.(b) PDI impacts are included in the totals.

Consistent with the <u>Parliamentary Budget Office (PBO) Guidance 02/2015</u>, PDI expense impacts have been included in this costing because the 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 equity and loan principal. In particular, only the fiscal balance reflects the concessional loan discount expense and associated unwinding income, and only the headline cash balance includes transactions related to equity and loan principal amounts. The impact on net debt will be broadly consistent with movements in the headline cash balance. A note on the accounting treatment of concessional loans is included at Attachment B.

## Uncertainties

The financial implications of this proposal are sensitive to the take-up rates of electrification and upgrades of appliances, and the installation of solar systems and battery storage.

The take-up rates are impacted by various factors including the percentage of eligible households, external shocks (such as economic conditions and energy price fluctuations), feed-in tariff prices, installation costs, changes to the current financial incentives and schemes for electricity generation (for example, community large-scale solar battery policy schemes) or the potential interactions of existing state/territory schemes with this policy, technological advancements and the perceived benefits (or risks) of installations.

Installations and associated costs of each of the items across the medium term are subject to uncertainty.

#### **Behavioural Response**

The proposed policy is expected to lead to a large behavioural response as some owners may not repay their loans until well into the future, or only after their death. The electrification of their households may be considered as adding value and lowering operating costs, without incurring any immediate costs. As such, there is an expected significant increase in demand for the electrification of appliances and installation of solar panels and solar batteries.

Demand for hot water heat pumps units is expected to increase by 125%, ducted air conditioning units by 37%, non-ducted air-conditioning units by 80%, and induction cooktops by 90%. These behavioural responses are aligned with, and take into consideration, historical trends in demand for electrification products, shift in consumer preferences due to changes in pricing and an increased uplift from the current demand of electrification products over the medium term.

Further, the behavioural response of the proposal is expected to increase the number of people that would take-up solar systems by around 50%. Likewise, solar batteries would see a 45% uplift nationally for eligible households, particularly in states and territories with no concessions available that incentivise people to upgrade or install a new solar battery storage system. The behavioural response is informed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO)

report *Small-scale solar PV and battery projections 2022*, undertaken on behalf of the Australian Energy Market Operator (AEMO). In this report they projected take-up rates of solar battery storage in various scenarios. The PBO has used the "Progressive Change" scenario as a baseline (AEMO's conservative projection).

# Key assumptions

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

- For households who take-up the loan, around 7% of properties would be sold each year.<sup>1</sup>
- 99% of loans are expected to be repaid, collected on property sales, with a default rate of 1%.
- Installation costs of relevant appliances would increase in line with growth in the CPI.
- Prices of the relevant appliances (exclusive of state-based incentives) would be constant across states and would remain the same in nominal terms across the medium term, reflecting cost efficiencies and economies of scale offsetting inflationary impacts on prices.
- Projected installation and take-up rates for electrification items would remain consistent across the medium term.
- Induction cooktops would increase as a proportion of the total cooktop market over the medium term.
- An average of 2 non-ducted air conditioning units would be claimed per dwelling.
- The number of household battery installations and take-up rate would increase in line with CSIRO and AEMO projections across the medium term.
- Solar battery installation costs would decrease in line with AEMO's projected figures.
- Solar photovoltaic (PV) and solar battery average sizes would remain in line with historical averages.
- The number of solar panel systems installed would grow in line with historical growth as per the Clean Energy Regulator (CER) small-scale installation data over the medium term.
- Solar installation costs would decrease in line with CSIRO's projected figures.
- Average solar system size would remain in line with CER historical data.
- There is sufficient supply of relevant appliances, panels and batteries, as well as trades people to install all these upgrades.

# Methodology

The financial implications for this proposal were derived by estimating the value of loans that would be provided under the Scheme and using the PBO's concessional loan model to calculate the impact to the fiscal, underlying cash and headline cash balances of the loan funding provided with indexation and repayments as specified in the proposal.

• The value of loans to be provided was estimated by projecting the number and cost of new installations of major electrical appliances (including the installation of hot water heat pumps,

<sup>&</sup>lt;sup>1</sup> This is informed by findings from Bandeira, Malakellis and Warlters (2022), who estimate that the median holding period for investment properties in NSW is around 9 years.

ducted and non-ducted air-conditioners, and induction cooktops), solar panels and solar batteries over the 4 years to 2028-29. This baseline was scaled by the number of eligible households, estimated using census household income data for both owner occupied and investors, capped at an annual household income of \$200,000 and limited to one loan per household and/or investor.

- Projections were then adjusted for the behavioural effects as described in *Key Assumptions*.
- The PBO has factored in the uplifted projected figures for the approximate number of households that may exceed the \$20,000 loan cap (for example, this accounts for instances when a household installs several larger electrification items, such as ducted air-conditioner, solar panels and solar batteries).
- To estimate the projected installations of hot water heat pumps (HWHPs), data was sourced from *Heat pumps emerging trends in the Australian market* by Expert Group (2023) for DCCEEW.
- Projected air conditioning installations are based on the projections of non-ducted and ducted unit installations in the 2021 Residential Baseline Study for Australia and New Zealand for 2000 to 2040 (2021 Residential Baseline Study) undertaken by EnergyConsult for the Department of Industry, Science, Energy and Resources.
  - Projections were scaled using a ratio to account for the number of air conditioning units per household (approximately 70% of Australian households as at 2022 have air conditioning and a proportion of households have more than one air conditioning system).
- Projected induction cooktops installations are based on the Asthma Australia (2022) report, *Homes, Health and Asthma in Australia,* which reflected around 6% of households reported having induction cooktops.
  - An estimated 6% of the total cooktop market projections in the 2021 Residential Baseline Study were estimated to be induction cooktops over the medium term. This profile was scaled to account for the increase in induction cooktops relative to the total market.
- Average battery size and costs were based on Distributed Energy Resource Register (DERR) AEMO database and projections over the medium term. An average battery size of 10.8 kWh was used over the medium term.
- Battery projections over the medium term were provided by AEMO and were projected to 2035-36.
- An average solar system size of 8.2 kWh was used based on CER quarterly reports of solar installations (from 2019 to date).
- The cost of the average solar system was based on CSIRO GenCost data projections over the medium term.
  - Solar system costs factor the small-scale technology certificate's (STCs) weighted average number of credits provided for all zones multiplied by \$40 and a sliding scale to account for the decreases in STCs until the policy ends in 2030.
  - The number of households projected to uptake solar systems is based on the CER historical average (over 5 years) grown over the medium term.
- Departmental costs were estimated based on similar programs as detailed in Budget papers for activities administered.

Financial implications were rounded consistent with the PBO's rounding rules.<sup>2</sup>

# Data sources

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ABS (2022) *Estimated dwelling stock, June Quarter 2022*, ABS website, accessed 26 May 2025.

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Australian Energy Market Operator provided relevant data as at December 2023.

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Commonwealth of Australia (2025) *Pre-election Economic and Fiscal Outlook 2025,* Commonwealth of Australia.

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CSIRO (2025) Energy Rating - National Overview, CSIRO website, accessed 26 May 2025.

<sup>&</sup>lt;sup>2</sup> <u>https://www.pbo.gov.au/for-parliamentarians/how-we-analyse/pbo-rounding-rules</u>

DCCEEW (Department of Climate Change, Energy, the Environment and Water) (2023) <u>Australian</u> <u>Energy Update 2023</u>, energy.gov.au, accessed 26 May 2025.

DCCEEW (2023) *Portfolio Budget Statements 2023-24,* Commonwealth of Australia.

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EnergyConsult (2022) <u>2021 Residential Baseline Study for Australia and New Zealand for 2000 to 2040</u>, Energy Rating Website, accessed 26 May 2025.

Godfrey J (2024) <u>Air conditioning usage statistics 2024–2025</u>, Finder website, accessed 26 May 2025.

# Attachment A – Home electrification – Financial implications

### Table A1: Home electrification – Fiscal balance (\$m)<sup>(a)</sup>

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	Total to 2028-29	Total to 2035-36
Revenue													
Administered non-tax													
Home electrification – Income from unwinding of discounts	50.0	94.0	118.0	128.0	94.0	60.0	27.0	-7.0	-41.0	-75.0	-110.0	390.0	338.0
Home electrification – Interest accrued from loans	110.0	206.0	279.0	337.0	314.0	293.0	273.0	255.0	239.0	223.0	209.0	932.0	2,738.0
Total – revenue	160.0	300.0	397.0	465.0	408.0	353.0	300.0	248.0	198.0	148.0	99.0	1,322.0	3,076.0
Expenses													
Administered													
Home electrification – Concessional loan discount expense	-565.0	-471.0	-423.0	-365.0	-	-	-	-	-	-	-	-1,824.0	-1,824.0
Departmental						-	-						
Office of Electrification	-26.2	-9.8	-9.7	-9.7	-1.4	-1.5	-1.5	-1.5	-1.6	-1.6	-1.6	-55.4	-66.1
Total – expenses	-591.2	-480.8	-432.7	-374.7	-1.4	-1.5	-1.5	-1.5	-1.6	-1.6	-1.6	-1,879.4	-1,890.1
Total (excluding PDI)	-431.2	-180.8	-35.7	90.3	406.6	351.5	298.5	246.5	196.4	146.4	97.4	-557.4	1,185.9
PDI impacts	-71.0	-202.0	-319.0	-431.0	-474.0	-450.0	-429.0	-409.0	-392.0	-376.0	-364.0	-1,023.0	-3,917.0
Total (including PDI)	-502.2	-382.8	-354.7	-340.7	-67.4	-98.5	-130.5	-162.5	-195.6	-229.6	-266.6	-1,580.4	-2,731.1

(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.

- Indicates nil.

## Table A2: Home electrification – Underlying cash balance (\$m)<sup>(a)</sup>

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	Total to 2028-29	Total to 2035-36
Receipts													
Administered non-tax													
Home electrification – Interest repayments received on loans	110.0	206.0	279.0	337.0	314.0	293.0	273.0	255.0	239.0	223.0	209.0	932.0	2,738.0
Total – receipts	110.0	206.0	279.0	337.0	314.0	293.0	273.0	255.0	239.0	223.0	209.0	932.0	2,738.0
Payments													
Departmental													
Office of Electrification	-26.2	-9.8	-9.7	-9.7	-1.4	-1.5	-1.5	-1.5	-1.6	-1.6	-1.6	-55.4	-66.1
Total – payments	-26.2	-9.8	-9.7	-9.7	-1.4	-1.5	-1.5	-1.5	-1.6	-1.6	-1.6	-55.4	-66.1
Total (excluding PDI)	83.8	196.2	269.3	327.3	312.6	291.5	271.5	253.5	237.4	221.4	207.4	876.6	2,671.9
PDI impacts	-53.0	-170.0	-290.0	-403.0	-463.0	-456.0	-434.0	-414.0	-396.0	-380.0	-367.0	-916.0	-3,826.0
Total (including PDI)	30.8	26.2	-20.7	-75.7	-150.4	-164.5	-162.5	-160.5	-158.6	-158.6	-159.6	-39.4	-1,154.1

(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: Home electrification – Headline cash balance (\$m)<sup>(a)</sup>

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	Total to 2028-29	Total to 2035-36
Receipts													
Administered non-tax													
Home electrification – Loan repayments	123.0	463.0	637.0	783.0	726.0	673.0	624.0	578.0	536.0	497.0	460.0	2,006.0	6,100.0
Home electrification – Interest received on loans	110.0	206.0	279.0	337.0	314.0	293.0	273.0	255.0	239.0	223.0	209.0	932.0	2,738.0
Total – receipts	233.0	669.0	916.0	1,120.0	1,040.0	966.0	897.0	833.0	775.0	720.0	669.0	2,938.0	8,838.0
Payments													
Administered													
Home electrification – Loans made	-3,420.0	-3,230.0	-3,220.0	-3,210.0	-	-	-	-	-	-	-	-13,080.0	-13,080.0
Departmental													
Office of Electrification	-26.2	-9.8	-9.7	-9.7	-1.4	-1.5	-1.5	-1.5	-1.6	-1.6	-1.6	-55.4	-66.1
Total – payments	-3,446.2	-3,239.8	-3,229.7	-3,219.7	-1.4	-1.5	-1.5	-1.5	-1.6	-1.6	-1.6	-13,135.4	-13,146.1
Total (excluding PDI)	-3,213.2	-2,570.8	-2,313.7	-2,099.7	1,038.6	964.5	895.5	831.5	773.4	718.4	667.4	-10,197.4	-4,308.1
PDI impacts	-53.0	-170.0	-290.0	-403.0	-463.0	-456.0	-434.0	-414.0	-396.0	-380.0	-367.0	-916.0	-3,826.0
Total (including PDI)	-3,266.2	-2,740.8	-2,603.7	-2,502.7	575.6	508.5	461.5	417.5	377.4	338.4	300.4	-11,113.4	-8,134.1

(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.

#### Budget impact<sup>3</sup>

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.<sup>4</sup> Table B1 provides information about the detail provided in a costing. The provision of concessional loans decreases the Australian 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 (DNER)

All budget aggregates take into account estimates of the share of loans not expected to be repaid when estimating the value of the concession that is being provided. If a portion of loans are not expected to be repaid, an allowance is made for the expected credit loss on the loans' outstanding balance. 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 also reflected in net worth.

Budget item	Appears in	Comments
Interest accrued or received	All budget aggregates	Captures the interest accrued or expected to be received on the debt.
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.
		An assessment by the Government that a loan (apart from HELP loans) will not be fully repaid is an 'other economic flow', not included in the fiscal balance.
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.

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

<sup>3</sup> The PBO's treatment of these loans is consistent with the Department of Finance costing guidelines.

<sup>4</sup> 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.