



Parliament of Australia
Parliamentary Budget Office

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Parliamentary Budget Officer

Senator Richard Di Natale
Leader of the Australian Greens
Parliament House
CANBERRA ACT 2600

Dear Senator Di Natale

Please find attached a response to your costing request, *Investing in Australian Science and Research* (letter of 24 June 2016).

The response to this request will be released on the PBO website (www.pbo.gov.au).

If you have any queries about this costing, please contact Colin Brown on (02) 6277 9530.

Yours sincerely

Phil Bowen

25 June 2016



Policy costing—during the caretaker period for the 2016 general election

Name of proposal:	Investing in Australian Science and Research
Summary of proposal:	<p>The proposal is comprised of a number of components, with Components 1 to 8 being ongoing grant programs indexed by the Consumer Price Index (CPI).</p> <p><u>Component 1: Core science funding</u></p> <ul style="list-style-type: none">• \$83.3 million per year to the Australian Research Council (ARC).• \$83.3 million per year to the National Health and Medical Research Council (NHMRC).• \$33.3 million per year to Cooperative Research Centres (CRC). <p><u>Component 2: Supporting women in science</u></p> <ul style="list-style-type: none">• \$50.0 million per year to research and innovation organisations to support women in science. <p><u>Component 3: Research infrastructure</u></p> <ul style="list-style-type: none">• \$100.0 million per year for investment in research infrastructure to be administered by Innovation and Science Australia. <p><u>Component 4: International collaboration</u></p> <ul style="list-style-type: none">• \$10.0 million per year to support international collaboration via the existing global innovation strategy. <p><u>Component 5: Future Fellowship Scheme</u></p> <ul style="list-style-type: none">• \$70.0 million per year for the Future Fellowships Scheme. <p><u>Component 6: Open access publishing</u></p> <ul style="list-style-type: none">• \$46.2 million per year to drive the development and implementation of a national program of open access publishing.

	<p><u>Component 7: Health and medical research</u></p> <ul style="list-style-type: none"> • \$47.0 million per year to support the phasing in of funding reforms that will progressively address the gap between direct and indirect funding for health and medical research. • \$40.0 million per year to fund four new integrated health research centres. <p><u>Component 8: Science, Technology, Engineering and Mathematics (STEM)</u></p> <ul style="list-style-type: none"> • \$41.7 million per year to support existing teacher training in STEM education. <p><u>Component 9: Reversing harsh budget cuts</u></p> <ul style="list-style-type: none"> • This component would reverse the following budget measures: <ul style="list-style-type: none"> – <i>Commonwealth Science and Industrial Research Organisation (CSIRO) job cuts</i> – <i>Science and Research Agencies – reduced funding</i> – <i>National Environmental Science program – establishment.</i> • Savings associated with measures to be reversed that have already been realised are to be reinvested back into the original programs, or allocated back to relevant agencies with any such reinvestments to be spread evenly over the first three years. <p>This proposal would commence on 1 September 2016.</p>
Person/party requesting costing:	Senator Richard Di Natale, Australian Greens
Date of public release of policy:	19 May 2016
Date costing request received:	24 June 2016
Date costing completed	25 June 2016
Expiry date for the costing:	Release of the next economic and fiscal outlook report

Costing overview

The proposal would decrease the fiscal and underlying cash balances by \$3,140.0 million over the 2016-17 Budget forward estimates period. This impact is due to an increase of \$2,542.2 million in administered expenses and \$597.8 million in departmental expenses.

The proposal would have an impact beyond the 2016-17 Budget forward estimates period. A detailed breakdown of the financial impacts over the period 2016-17 to 2026-27 for the total (Table A1) and by component (Tables A2-10) is provided at [Attachment A](#).

Components 1 to 8 are considered to be of high reliability as they are based on specified capped amounts and the application of administrative costs based on similar programs. Component 9 is considered to be of low reliability as impacts are based on aggregate information of agency expenses on employees, which include both job reductions and any new positions created. The reliability of the costing decreases the further into the future the estimates are projected.

Key assumptions

It has been assumed that:

- despite the 1 September 2016 start date a full year of funding would be provided in 2016-17
- agencies would be able to fully utilise the temporary increases in funding associated with reinvestment of past savings under component 9 of the proposal (see Component 9 of *Methodology*).

Methodology

Components 1-8

Administered expenditure estimates in 2016-17 are as specified in the request, and indexed by CPI annually thereafter. Departmental expenditure estimates are in addition to the capped amounts and are based on other like initiatives and the estimates account for the net effect of indexation parameters and the efficiency dividend, in accordance with the Department of Finance's costing practices.

Component 9

The financial implications of measures reversed under this proposal are based on data from the Central Budget Management System. Historical saving amounts have been grown by changes in CPI to reflect 2016-17 dollars.

Data sources

- The Department of Finance provided indexation parameters.
- The Treasury provided CPI projections.
- Extracts from the Central Budget Management System provided by the Department of Finance for Budget and Mid-Year Economic and Fiscal Outlook (MYEFO) for the years 2013-14, 2014-15 and 2015-16.

Attachment A: Investing in Australian Science and Research—financial implications

Table A1: Combined impact of all components—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered	-614.3	-628.1	-643.6	-656.3	-2,542.2	-672.7	-689.5	-706.7	-724.4	-742.5	-761.1	-780.1	-7,619.2
Departmental	-156.8	-151.2	-170.5	-119.3	-597.8	-120.3	-121.2	-122.1	-123.1	-124.1	-125.0	-126.0	-1,459.6
Total	-771.1	-779.3	-814.0	-775.6	-3,140.0	-792.9	-810.7	-828.9	-847.5	-866.6	-886.1	-906.1	-9,078.8

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A2: Component 1: Core science funding—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered													
ARC grants	-83.3	-85.2	-87.4	-89.6	-345.5	-91.8	-94.1	-96.4	-98.8	-101.3	-103.9	-106.4	-1,038.3
NHMRC grants	-83.3	-85.2	-87.4	-89.6	-345.5	-91.8	-94.1	-96.4	-98.8	-101.3	-103.9	-106.4	-1,038.3
CRC grants	-33.3	-34.1	-34.9	-35.8	-138.2	-36.7	-37.6	-38.6	-39.5	-40.5	-41.5	-42.6	-415.3
Total - administered	-200.0	-204.6	-209.7	-214.9	-829.2	-220.3	-225.8	-231.4	-237.2	-243.2	-249.2	-255.5	-2,491.9
Departmental													
ARC grants	-1.9	-1.9	-1.9	-1.9	-7.4	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9	-2.0	-20.9
NHMRC grants	-1.9	-1.9	-1.9	-1.9	-7.4	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9	-2.0	-20.9
CRC grants	-1.0	-1.0	-1.0	-1.0	-3.8	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-10.7
Total - departmental	-4.7	-4.7	-4.7	-4.7	-18.7	-4.7	-4.7	-4.8	-4.8	-4.9	-4.9	-4.9	-52.4
Total	-204.7	-209.2	-214.3	-219.6	-847.9	-225.0	-230.5	-236.2	-242.1	-248.0	-254.1	-260.4	-2,544.3

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A3: Component 2: Supporting women in science—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered	-50.0	-51.1	-52.4	-53.7	-207.3	-55.1	-56.5	-57.9	-59.3	-60.8	-62.3	-63.9	-623.0
Departmental	-1.6	-1.6	-1.6	-1.6	-6.4	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-17.9
Total	-51.6	-52.7	-54.0	-55.3	-213.7	-56.7	-58.1	-59.5	-61.0	-62.4	-64.0	-65.6	-640.8

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A4: Component 3: Research infrastructure—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered	-100.0	-102.3	-104.8	-107.5	-414.6	-110.1	-112.9	-115.7	-118.6	-121.6	-124.6	-127.7	-1,245.9
Departmental	-2.0	-2.0	-2.0	-2.0	-8.0	-2.0	-2.0	-2.0	-2.1	-2.1	-2.1	-2.1	-22.3
Total	-102.0	-104.3	-106.8	-109.5	-422.6	-112.2	-114.9	-117.8	-120.7	-123.7	-126.7	-129.8	-1,268.3

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A5: Component 4: International collaboration—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered	-10.0	-10.2	-10.5	-10.7	-41.5	-11.0	-11.3	-11.6	-11.9	-12.2	-12.5	-12.8	-124.6
Departmental	-0.5	-0.5	-0.5	-0.5	-1.9	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-5.4
Total	-10.5	-10.7	-11.0	-11.2	-43.4	-11.5	-11.8	-12.1	-12.4	-12.7	-13.0	-13.3	-130.0

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A6: Component 5: Future Fellowship Scheme—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered	-70.0	-71.6	-73.4	-75.2	-290.2	-77.1	-79.0	-81.0	-83.0	-85.1	-87.2	-89.4	-872.1
Departmental	-1.8	-1.8	-1.7	-1.8	-7.0	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-19.7
Total	-71.8	-73.4	-75.1	-77.0	-297.2	-78.9	-80.8	-82.8	-84.8	-86.9	-89.1	-91.3	-891.8

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A7: Component 6: Open access publishing—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered	-46.2	-47.2	-48.4	-49.6	-191.4	-50.9	-52.1	-53.4	-54.8	-56.1	-57.5	-59.0	-575.2
Departmental	-1.6	-1.6	-1.6	-1.6	-6.3	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-17.6
Total	-47.8	-48.8	-50.0	-51.2	-197.7	-52.4	-53.7	-55.0	-56.4	-57.8	-59.2	-60.6	-592.8

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A8: Component 7: Health and medical research—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered													
Funding reform for health and medical research	-47.0	-48.1	-49.3	-50.5	-194.9	-51.8	-53.1	-54.4	-55.8	-57.1	-58.6	-60.0	-585.6
Integrated health research centres	-40.0	-40.9	-41.9	-43.0	-165.8	-44.1	-45.2	-46.3	-47.4	-48.6	-49.8	-51.1	-498.4
Total - administered	-87.0	-89.0	-91.2	-93.5	-360.7	-95.8	-98.2	-100.7	-103.2	-105.8	-108.4	-111.1	-1,084.0
Departmental													
Funding reform for health and medical research	-1.6	-1.6	-1.6	-1.6	-6.3	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-17.6
Integrated health research centres	-1.5	-1.5	-1.5	-1.5	-6.1	-1.5	-1.5	-1.6	-1.6	-1.6	-1.6	-1.6	-17.1
Total - departmental	-3.1	-3.1	-3.1	-3.1	-12.4	-3.1	-3.1	-3.2	-3.2	-3.2	-3.2	-3.3	-34.7
Total	-90.1	-92.1	-94.3	-96.6	-373.1	-98.9	-101.4	-103.8	-106.4	-109.0	-111.7	-114.4	-1,118.7

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A9: Component 8: Science, Technology, Engineering and Mathematics—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered	-41.7	-42.6	-43.7	-44.8	-172.7	-45.9	-47.0	-48.2	-49.4	-50.7	-51.9	-53.2	-519.1
Departmental	-1.5	-1.5	-1.5	-1.5	-6.1	-1.5	-1.5	-1.6	-1.6	-1.6	-1.6	-1.6	-17.1
Total	-43.2	-44.1	-45.2	-46.3	-178.9	-47.4	-48.6	-49.8	-51.0	-52.2	-53.5	-54.8	-536.3

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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

Table A10: Component 9: Reversing harsh budget cuts—Financial implications^{(a)(b)}

(\$m)	2016–17	2017–18	2018–19	2019–20	Total to 2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	Total to 2026–27
Impact on fiscal and underlying cash balances													
Administered													
CSIRO job cuts	-	-	-	-	-	-	-	-	-	-	-	-	-
Science and Research Agencies – reduced funding	-	-	-	-	-	-	-	-	-	-	-	-	-
National Environment Science program	-9.4	-9.4	-9.4	-6.3	-34.6	-6.5	-6.6	-6.8	-7.0	-7.1	-7.3	-7.5	-83.4
Total - administered	-9.4	-9.4	-9.4	-6.3	-34.6	-6.5	-6.6	-6.8	-7.0	-7.1	-7.3	-7.5	-83.4
Departmental													
CSIRO job cuts	-77.4	-72.4	-91.7	-65.0	-306.5	-65.5	-66.0	-66.6	-67.1	-67.6	-68.1	-68.7	-776.1
Science and Research Agencies – reduced funding	-62.6	-62.1	-62.1	-37.6	-224.5	-37.9	-38.2	-38.5	-38.8	-39.1	-39.4	-39.7	-496.3
National Environment Science program	-	-	-	-	-	-	-	-	-	-	-	-	-
Total - departmental	-140.0	-134.6	-153.8	-102.7	-531.0	-103.5	-104.3	-105.1	-105.9	-106.7	-107.6	-108.4	-1,272.5
Total	-149.4	-144.0	-163.3	-109.0	-565.7	-109.9	-110.9	-111.9	-112.9	-113.9	-114.9	-115.9	-1,355.8

(a) A negative number indicates a decrease in revenue or an increase in expenses or net capital investment in accrual and cash terms.

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