

# AUSTRALIAN LABOR PARTY

**BUILDING  
AUSTRALIA'S  
INNOVATION FUTURE**

**Labor**



# BUILDING A CULTURE OF INNOVATION

Innovation policy is not just about the latest trends. It is about the future of Australia – for all of us.

It is also not just about backing a great idea or promoting the next cool initiative. It is about applying a thoughtful, integrated systems approach, fostering an environment where great ideas and cool initiatives thrive every day.

That's the approach Labor took in government with our 10-year national innovation agenda, *Powering Ideas*. And it is still our approach today.

For Labor, innovation policy applies not just to a small section of the economy, but to every enterprise. It applies not just to industry, but to universities and TAFEs, research institutes, the public service and the community sector.

At the centre of our policy is a commitment to Australia as a science nation, as an entrepreneurial nation and an advanced manufacturing nation. These are different facets of the same initiative, directed at the same objective – our future national prosperity.

This philosophy is championed at the very top, by Labor's leader Bill Shorten.

The challenge for an effective innovation agenda is to reshape the economy, industry by industry, to create the high-skill, high-wage jobs of the future. To support an education system that delivers high quality training to workers who will fill those jobs. To nurture a research sector that supplies the insights, discoveries and solutions that drive it all.

That challenge intimidates many people – not least because, for the first time since the industrial revolution, technological change is projected to destroy more jobs than it creates.

The solution is not a repudiation of new technology, a retreat into wishful thinking, or anti-science prejudice.

The solution is system-wide engagement.

A Shorten Labor Government will work with all sectors of the economy to foster a culture of innovation; a culture that harnesses technological change and changes in business practice, to drive economic opportunity and participation.

Our ability to innovate, at an accelerated pace, will depend on our ability to train and attract talented people.

We need a strong research base providing a wellspring of technical know-how, with rich and deep connections to the global science enterprise.

Our children must have an education system that sets them up, not only to do the jobs of the future but to create the jobs of the future. They need career pathways from school, vocational education and higher education, into fulfilling and secure work.

Our economy needs a reliable source of graduates in science, technology, engineering and mathematics (STEM) whose skills employers value; a STEM-literate population that celebrates discovery and entrepreneurship; and a STEM workforce that appreciates and knows how to work with industry, the creative arts and the social sciences.

Our industries must foster entrepreneurs and innovators who embrace a culture of risk – assessing it, managing it and taking it.

We need businesses that invest in Australian enterprise. We need businesses that partner with researchers to bring new products to market and adopt new technologies to improve their operations.

All of these prerequisites for growth need a government that understands the urgency of change and encourages new ideas.

As we wrote in *Powering Ideas*:

*“Innovation is not an abstraction. Nor is it an end in itself. It is how we make a better Australia, and contribute to making a better world – a prosperous, fair and decent world, in which everyone has the chance of a fulfilling life.”*

But that is not happening here under the Liberals.

Under the Liberal Government, income inequality in Australia is the highest it has been for 70 years.

To reduce the level of inequality we need an innovative economy that embraces the challenges of modernity, and ensures that the benefits of our prosperity can be shared by all.

Labor knows that government has a crucial role in the innovation system.

The idea that you could build an innovation system without government is an illusion, held only by those who don't understand how the most successful businesses of our time arose.

Virtually every significant discovery and technological breakthrough of the last hundred years and more was made on the back of research policies and investments put in place by governments.

Private technological development and commercialisation is almost always built on publicly funded fundamental research and development, typically using publicly funded research infrastructure – from the internet and global positioning systems, to the jet airplane, the Google search engine algorithm and magnetic resonance imaging.

This is the lesson of history. Public investment in research delivers private as well as public benefit, with a return many times greater than the cost.

Governments must not only encourage, they must enable, because there are some things that markets do not do well. Government is uniquely placed to create and entrench the conditions in which innovative businesses and institutions can thrive.

Labor and the Liberals have fundamentally different priorities – in innovation, industry, science and research, just as much as in education, health care or taxation.

What the Liberals present as innovation policy is just a host of bits and pieces, covering up billions of dollars in cuts. The Liberals have trashed our science and squandered our research potential, while other nations and advanced economies invest in the assets for growth.

To meet the challenges of the 21<sup>st</sup> century and transition our economy, Australia's economic growth must be innovation-led. Only Labor is able to provide that leadership in government.

Unlike the Liberals, Labor understands that you can't innovate by smooth-talking while slashing funding for education, science, research and industry.

You can't innovate while stripping universities of resources, jacking up fees and saddling students with a lifetime of debt.

You can't innovate while denigrating the expertise of our globally recognised scientists, our world-class teachers and our adventurous creative talent.

You can't innovate while abandoning manufacturing, destroying the very capabilities that we need to remain a high-wage economy and create the jobs of the future.

Labor will always defend our public universities and training institutes. We will always defend students and workers. We will always defend science and research. We will always defend manufacturing.

We will ensure that the interests of firms, industry groups, universities and scientists are shared with one another and progressed across all areas of government.

A coordinated approach of this kind is a systems approach.

It is Labor's approach.

A handwritten signature in blue ink, appearing to read 'Kim Carr', with a long horizontal line extending from the end of the signature.

Kim Carr

# HIGHER EDUCATION

Australia is at an important economic juncture. The mining construction boom has passed and annual economic growth has remained consistently below-trend under the Liberals.

We face rising unemployment, falling business and consumer confidence, weak business investment, flat wages growth and declining living standards.

At the same time, we are facing a major economic transformation driven by trends as diverse as the rapid increase in the size of Asia's middle class, climate change, an ageing population, technological change and digital disruption and the rise of women through the institutions of power.

These challenges and opportunities are reshaping our economy and our outlook.

Now, more than ever, our economy needs to step up to seize the opportunities arising from this economic transformation and improve our competitiveness through innovation, productivity and creativity.

Education is an essential source of economic growth. It is vital for lifting living standards, upskilling our workforce and creating new industries, opportunities and jobs here in Australia.

Australia recently completed its 24<sup>th</sup> year of continuous economic growth. This was driven by hard won micro-economic reforms and investments in our human and physical capital base.

But we can never afford to stand still. We need to replicate the success of previous Labor Governments – lifting productivity, growing investment, creating jobs and building new sources of growth.

To achieve this, we must tap into our nation's best resource: the skills and creativity of our people.

Investing in universities is an investment in our national productivity and our international competitiveness.

Two in every three jobs created in the future will require some form of higher education. The role of government should be improving access to higher education and building the workforce of the future, not putting walls around our universities by imposing a massive debt burden on students.

In 2013, the Australian Workforce and Productivity Agency found that for every extra dollar invested in tertiary education, the average return is twenty-six dollars within a decade.

The OECD estimates the real rate of return to the Australian government from investing tertiary education is more than 13 per cent – the second best return on investment in the OECD.

When we invest in human capital, we are preparing Australians for a future they control – and embrace. Because, in the future, economic growth will be more organic, less structured, and driven by individuals.

The opportunities are immense, and we should be optimistic. But the opportunities need to be seized. Our universities are the core of our future economy, the driver of innovation, growth and the jobs of the future.

Australia needs the right plan to deliver a flexible, well-educated workforce that can continually adapt to change and exploit uncertainty to our advantage.

## **LABOR'S COMMITMENT TO HIGHER EDUCATION REFORM**

Labor will put our nation's future prosperity first. That means investing in our universities, not saddling students with \$100,000 degrees and decades of debt.

We will ensure that universities are productive, equitable and accessible – educating the next generation for the jobs of the future.

Improving access, better supporting our students and improving education quality is central to Labor's plan for the future.

Labor is the party of education, and expanding opportunity to higher education.

Because of Labor's reforms, an additional 190,000 students are enrolled at university today. That's one in four current students who would not be at university were it not for Labor.

We boosted Indigenous student numbers by 26 per cent and regional student numbers by 30 per cent. There are over 36,000 more students from low income families at university than when we came to office.

Labor lifted government investment in universities from \$8 billion in 2007, to \$14 billion in 2013.

Labor will continue the demand driven system and ensure that access to university remains a matter of hard work and good marks, not your bank balance.

But we will also do more to ensure that every student gets the opportunity to succeed, not just enrol.

That is why Labor has developed a five point reform plan for supporting Australia's universities to maintain our prosperity and ensure we deliver the jobs of the future.

### **DRIVE QUALITY AND COMPLETIONS**

Enrolment at university isn't an end in itself.

The previous Labor Government opened access to university – 190,000 more students are at university today as a result of our reforms.

Access will always matter to Labor – and we will continue to support the demand driven system. But our next wave of university reform will focus on completion and quality.

We want Australian students who start university to finish university with a degree.

Department of Education figures show that 28 per cent of people who started a degree in 2006 had not completed it after eight years – and more than 22 per cent had dropped out completely.<sup>1</sup>

There is evidence that attrition rates have been getting worse in recent years, meaning even more students are likely to leave university with a debt but no degree.<sup>2</sup>

With the Commonwealth investing \$14 billion of taxpayers' money in universities every year, Australians are right to expect outcomes that benefit the entire community; young Australians

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<sup>1</sup> Department of Education, *Completion rates of domestic bachelor students 2005-2013: A cohort analysis*, <http://docs.education.gov.au/documents/completion-rates-domestic-bachelor-students-2005-2013-cohort-analysis>, Table 4.

<sup>2</sup> <http://www.theaustralian.com.au/higher-education/drop-outs-soar-as-unis-ride-enrolment-boom/story-e6frgcjx-1227467093509?sv=41d8c05be3451174d84c0cca3b2e7611>.

graduating as teachers, nurses, doctors, engineers and scientists enhancing our society and our economy.

Labor in government will set an ambitious goal to increase the number of students completing their study by 20,000 graduates per year from 2020.

We will work with the university sector to ensure that incentives within the demand driven system are introduced to achieve this goal.

And because students need to graduate with skills, knowledge and resilience for their working life, not just mark their name off at class, Labor will invest an additional \$31 million in Tertiary Education Quality Standards Australia (TEQSA).

The boost to TEQSA will lift the quality of teaching and resources to ensure that students graduate with a high quality education that will win them the jobs of the future.

This additional investment will provide the assurance that our investment in higher education is achieving the right outcomes, for students as well as our economy: highly skilled, highly adaptable, technology literate graduates ready to compete in the world.

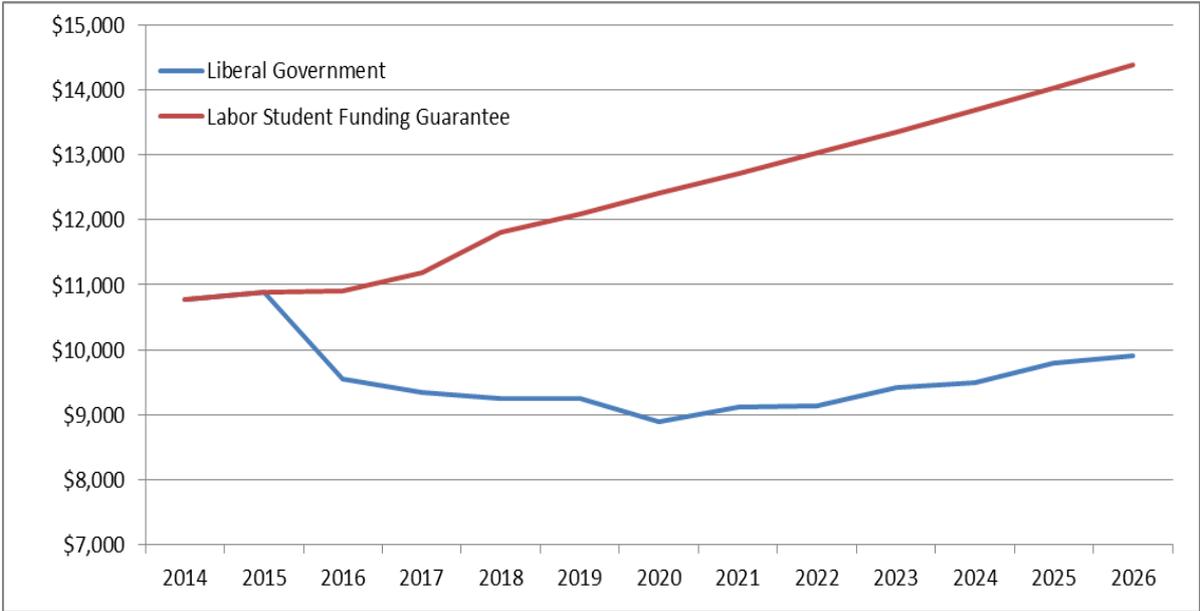
**NO \$100,000 DEGREES**

Labor will continue to fight the Liberals’ \$100,000 degrees and will not deregulate fees for undergraduate students. Where Labor seeks to invest more in our students, the Liberal Government only wants to cripple students with massive debts.

Labor will introduce a new Student Funding Guarantee to provide certainty to universities and remove the need for higher fees. Under Labor, average funding per undergraduate student in 2018 will be more than \$11,800.

From the 2018 academic year, this will boost per student funding by more than 27 per cent or \$2,500 per student, per year, compared with the Liberals’ plan.

By 2026, Labor’s student funding guarantee will see universities more than 40 per cent or \$4,000 better off per student each year in government funding, compared to the Liberals’ policy.



On average, over the next decade, a Labor Government will invest an additional \$9,000 in each student’s education for a standard 3-year degree. This additional investment will fund better outcomes, without \$100,000 degrees.

<b>Course (duration)</b>	<b>Cost of degree under Labor</b>	<b>Cost of degree under Turnbull*</b>
Dentistry (5 years)	\$52,615	\$148,620
Vet Science (5 years)	\$52,615	\$131,580
Medicine (5 years)	\$52,615	\$125,155
Law (4 years)	\$42,092	\$86,024
Engineering (4 years)	\$35,948	\$51,872
Commerce (3 years)	\$31,569	\$63,915
Science (3 years)	\$26,961	\$50,337
Education (4 years)	\$25,224	\$48,312
Humanities (3 years)	\$18,918	\$49,587
Nursing (3 years)	\$18,918	\$36,867

\*Based on NATSEM modelling.

This additional investment will ensure that students are encouraged rather than deterred from studying at university, improving the productive capacity of our economy.

To provide certainty and confidence to a sector that is vital to maintaining Australia’s prosperity, Labor will legislate the Student Funding Guarantee, and index the funding to ensure the value of the contribution isn’t eroded over time.

**INCREASE ACCESS AND DIVERSITY**

More students are studying at university than ever before in Australia, but we need to do more to ensure that all Australians have access to a university education.

In government Labor set ambitious targets to boost access to a university, particularly among under-represented groups. And we backed these targets up with increased funding to universities to ensure that these students were supported during their studies.

Today, we are on target so that by 2025, 40 per cent of Australians under 35 will have a bachelor’s degree.

Labor’s also set a target that by 2020, 20 per cent of students from disadvantaged families would go to university. There has been significant progress towards meeting this target, but there is more work to do.

Labor’s ambition is to remove all barriers to higher education. This means improving access for:

- Low income students;
- Students from rural and regional areas;
- Indigenous Australians and first generation migrants; and
- Students with disabilities and other students from disadvantaged backgrounds.

To achieve this, we will replace the existing Higher Education Participation Program (HEPP) and introduce a Higher Education Access and Growth Strategy to lift equity and improve student outcomes, including completion.

Students from low-income backgrounds and from rural and regional Australia are significantly less likely to complete university than their better off metropolitan counterparts.

The eight-year completion rate for low-SES students commencing in 2006 was less than 67 per cent. Although a small group were still enrolled in 2013, more than one in four students had dropped out. Almost half of all Indigenous students commencing in 2006 left university without a degree.

The gap in completions between metropolitan students and those from regional Australia is nearly six percentage points, increasing to almost 15 per cent for remote students.<sup>3</sup>

Labor will seek to close this gap.

Student grouping	Per cent dropped out
National Total (domestic bachelor students)	22.4
Indigenous	45.8
Low SES	27.3
Metro	21.2
Regional	26.3
Remote	35.0

Source: Department of Education, *Completion Rates of Domestic Bachelor Students - A Cohort Analysis, 2005-2013, February 2015*

Labor’s Higher Education Access and Growth Strategy will put in place incentives, in addition to base funding, to improve diversity and improve outcomes for disadvantaged students.

**IMPROVE READINESS FOR THE LABOUR MARKET**

Studying at university should open the door to a well-paying career. Universities must be responsive to labour market pressures and educate students for growth areas in the economy.

Labor continues to support the demand driven system, but universities should be better attuned to the future labour market, and the needs of employers. Access to big data and more advanced analytics will assist in developing better labour market profiles and forecasting skills needs.

In government, we will work with our universities, industry and science agencies to get the incentives right to meet the needs of the future economy.

From skill shortages in key occupations to productivity-driving opportunities in new industries, universities will be encouraged within the existing funding system to be more responsive to drivers of growth.

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<sup>3</sup> Department of Education, *Completion rates of domestic bachelor students 2005-2013: A cohort analysis*, <http://docs.education.gov.au/documents/completion-rates-domestic-bachelor-students-2005-2013-cohort-analysis>, Table 4.

This builds on Labor's initiatives to prioritise study in science, technology, engineering and mathematics (STEM). We know that STEM educated students are vital to our future economy, so we need to structure the incentives accordingly.

But this is just a start.

In consultation with universities, Labor will establish an independent *Higher Education Productivity and Performance Commission* to drive these labour market outcomes.

Similar Commissions are common in other developed economies – in the United Kingdom, New Zealand and Hong Kong, for example – and these provide good examples of best practice for Australia to consider.

The current arrangements between the Commonwealth and universities have not always worked as well as they could, or in the way they were intended.

The Commonwealth invests around \$14 billion a year in higher education. We need to ensure that the investment delivers the highest standards of teaching and learning for the benefit of individual students as well as our society and our economy.

Labor recognises this, which is why we will work with the sector to uphold a focus on accountability and performance, and to lift productivity in our universities.

### **BETTER INFORMED STUDENTS AND PARENTS**

The success of our students starts with choosing the right course, at the right university. There is an obligation on government to assist students in making informed choices upon entering university.

From the final years of high school, to applying for courses at university, we must do more to ensure that students and parents have the information they need to make good decisions. With the demand driven system similar to a marketplace for students and course offerings, government should ensure that students are well-informed consumers.

Before enrolling for a degree, students should have access to information like the average salary and career opportunities upon graduation.

There are many opportunities to leverage digital technology and Labor will engage Australia's burgeoning start-up industry in this process.

The Liberal Government recently launched the Quality Indicators for Learning and Teaching website ([www.qilt.edu.au](http://www.qilt.edu.au)). Labor welcomes this initiative, but we believe that there is more that can be done to improve the depth of information, and user experience.

More informed students and parents will mean better decisions and improved outcomes.

A similar approach has recently been announced in the United States by President Obama in the form of a College Scorecard.<sup>4</sup>

Labor is committed to ensuring that students have the best information available when deciding to enrol into a specific course and will work with students, parents, universities, professional career counselling bodies and business to embrace new technology and forms of transparency.

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<sup>4</sup> United States Department of Education, *College Scorecard*, <https://collegescorecard.ed.gov/>.

## COMMONWEALTH INSTITUTES OF HIGHER EDUCATION

Labor has a plan to expand access to higher education and support local jobs in outer suburban and regional Australia.

Investing in education and training is the single most important thing we can do to maintain Australia's prosperity and secure the jobs of the future.

Labor is committed to opening up access to higher education to more Australians and supporting universities as critical drivers of innovation across the economy – not just because it is the fair thing to do, but because our future prosperity depends on it.

In government, Labor will work to establish Commonwealth Institutes of Higher Education to deliver new higher education qualifications in the outer suburbs and regional areas where existing universities struggle to give Australians access.

A network of pilot sites, with universities working together with TAFE, will address acute need in areas of under-participation while trialling approaches tailored to local conditions and designed to give students options.

### EXCLUDING SOME IS BAD FOR US ALL

In some parts of Australia unemployment is stubbornly high at more than twice the national average.

Tens of thousands of Australians are without work in many regions around the country. Too many people in our community are struggling to find work because of a mismatch between their skills and the opportunities that are available, or because there simply aren't enough jobs to go around.

The unemployment rate for young people who do not finish school is now above 18 per cent, while there are more than 140,000 people aged between 55 and 64 on the Newstart Allowance. The latest *Closing the Gap* report also shows that little progress has been made against the target of halving the Indigenous unemployment rate.

In these communities the rates of participation and attainment in higher education remain stubbornly low.

While Australians in major cities – especially the inner cities – are accessing higher education at record rates, in the outer suburbs, regional cities and regional areas the participation rate has hardly budged, despite measures introduced by Labor when we were last in government.

Hurdles preventing access to education vary from place to place, from transport problems (long distances, road congestion and poor public transport), relatively low incomes, low access to part-time work to help pay their way through study, lack of affordable childcare, low cultural expectations and experience of higher education, and low preparedness for the leap into the standard first year university experience.

The failure to ensure that young and re-training Australians access higher education locks them out of new opportunities and better paying jobs. This limits their career options and denies the nation a rich pool of talent. New approaches are needed. New knowledge and skills are required to take advantage of innovation opportunities.

The digital transformation of the marketplace and increasing connectivity is reshaping the Australian economy. Trade in ideas, innovation and services will rival trade of real products.

Artificial intelligence and machine-learning, robotics, nanotechnology, 3-D printing, genetics and biotechnology is giving rise to new business models and opportunities, but also hold the potential to significantly disrupt the operation of the labour market and change the skills needed for work.

Australia needs to be better positioned to take advantage of the changes it is facing.

Australia should achieve more from its education systems. The Global Competitiveness Index ranks Australia's higher education and training system as 8<sup>th</sup> in the world,<sup>5</sup> yet Australia is ranked 23<sup>rd</sup> on innovation and 27<sup>th</sup> on business sophistication. We need a new approach to leverage greater returns from our world-class tertiary education system.

Many advanced economies have technology universities or polytechnic institutions as a strategy to bring together higher education and technical skills to explore new areas of technology and innovation.

Recent research by the Committee for Economic Development of Australia (CEDA)<sup>6</sup> highlights the forces impacting on the jobs and skills we need to continue to grow and diversify the Australian economy.

The report highlights the high probability that 40 per cent of Australia's workforce, more than five million people, could be replaced by automation within the next 10 to 20 years. The next wave of the industrial revolution will fundamentally reshape business activity and jobs. New jobs will emerge, but Australia needs to be ready for them.

A new approach to tertiary education is required to make sure Australian businesses can explore the opportunities created by automation, while all Australians have the skills and knowledge to take advantage of new job opportunities.

Ideas do not turn into reality without targeted intervention and support. Higher order technical skills are vital in developing and refining ideas.

The VET sector has played a strong role in developing practical higher order technical skills, and these will be vital in supporting new production and services enabled by automation.

## **NEW APPROACHES TO IMPROVE PARTICIPATION**

Labor will establish a national network of Commonwealth Institutes of Higher Education by:

- Funding the establishment of a network of pilot Institutes in areas of demonstrated policy need and existing vocational training, higher education and industry collaboration.
- Increasing the availability of Commonwealth supported places at the advanced diploma and associate degree levels to support the development of new pathways to work that combine academic learning and technical skills. These places will be funded at 70 per cent of the full university rate, consistent with established policy expectations for sub-degree places (to which the notional research premium does not apply).

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<sup>5</sup> The Global Competitiveness Report 2015–2016, World Economic Forum.

<sup>6</sup> Committee for Economic Development in Australia, *Australia's future workforce?*, June 2015.

- Conducting feasibility studies in every State and Territory where Commonwealth Institutes should be located to expand access to higher education and work-ready high-skill vocational training.
- Conducting progressive impact assessments of the pilot Institutes and encouraging the sharing of best practice and shared challenges.
- Shaped by the outcome of the assessments and the feasibility studies, opening the program for bids to established new Institutes in areas of identified need and capability. Consortia of universities, TAFEs or other tertiary education providers will be encouraged to apply, in concert with industry and local and State Governments.

While the Institutes model is a new form of collaboration, it is not a new kind of a university. Commonwealth institutes will be joint ventures between universities, TAFEs, industry and in many cases local and State governments. They will deliver a mix of higher education with technically focussed vocational education specifically designed to drive innovation and productivity growth in industry and enterprises. The applied nature of learning and the close link between theory and practice will offer a unique student experience compared to universities or in training.

Many students eligible for tertiary education are seeking a practical vocational approach to learning. Commonwealth Institutes will be the specialist providers in the delivery of hands-on, work-integrated learning. Applied real world learning will be its distinguishing feature.

Commonwealth Institutes will deliver Advanced Diplomas and Associate Degrees, as specified by Australian Qualifications Framework Level 6. Students will have a tradeable exit qualification and the option to continue on to bachelor-level study at university.

As a condition of funding, Commonwealth Institutes will be required to demonstrate engagement with industry and links to regional labour market need, give instruction that leads to real economy jobs, and offer an articulation pathway to higher study at a university.

For the first time Australia will have a network of tertiary education institutions which bring together the best of applied higher education and high order technical and vocational skills to deliver an innovation and technology driven boost to the Australian economy.

Demographic analysis shows regions of persistent low participation and attainment, particularly in outer metropolitan and regional Australia. In a number of these areas, local communities, businesses and institutions have already identified their needs and opportunities, and progressed plans to work together to address them. Many of these collaborations are very well advanced, and leverage off existing infrastructure and relationships. Some require capital investment, while others require funding only for development, staffing and student load.

An initial pilot project at two sites has already been announced: the University of Tasmania's Northern Transformation Project, targeting Launceston and Burnie, to which Labor committed \$150 million in April 2016. The project is set to create 3,110 jobs, including 265 additional academic and professional staff jobs and support 12 000 new students into higher education in North and North-West Tasmania. The plan is estimated to deliver \$1.1 billion economic output during the construction phase alone and an additional \$428 million a year in economic activity.

A total of ten pilot sites will be established in all States, in locations where need is demonstrated, and where institutions, industry and local communities are ready to implement locally tailored pilot Institutes.

# SCIENCE AND RESEARCH

Australia's economy is in transition, and our future prosperity will depend on harnessing the talent of our resourceful and hardworking people.

Labor has developed a plan for science and research that enlists the best and brightest from across Australia and around the world – to the national project of keeping Australia at the forefront of discovery and innovation.

We will link our scientists and researchers with leading colleagues abroad, and with companies and entrepreneurs looking to develop their discoveries and take them to market. We will entrench vital research specialisation in the national interest, such as biosecurity and marine research.

We are determined to equip our researchers with the best kit the nation can afford, and to ensure that our national investments in infrastructure are fully utilised.

In government, Labor delivered the framework for Australia's comprehensive innovation policy – enshrined in a 10-year innovation agenda. Under our leadership, funding for science, research and innovation grew by 50 per cent to over \$10 billion in 2013-14, including record levels of funding for the CSIRO.

Labor's positive plan to drive an innovation nation contrasts with the Liberals' trail of destruction in science and research – all to fund a tax cut to big business. Their unprecedented and unjustified attacks on the integrity and independence of scientific expertise have done just as much harm as their cuts to funding.

The Liberals have taken us backwards, but Labor knows we can get back on track. And we must, if Australians are to enjoy a safe and prosperous future.

That's why Labor has put science, research and innovation at the centre of our policy agenda, to help create the jobs and industries of the future. The jobs that will sustain our children and their families, doing work we cannot yet imagine.

Labor's plan for science and research is the right one for Australia, and for our future.

## **SAVING CSIRO**

For 100 years CSIRO has been a world leader in scientific discoveries and innovation – from the invention of Aerogard and polymer banknotes, to the development of 100 varieties of cotton and the invention of Wi-Fi.

But Australia's flagship science agency has suffered under the Abbott-Turnbull Government, which has openly questioned the science of climate change and attacked renewable energy instead of investing in it.

Labor believes we cannot grow the jobs of the future without strong investment in science. A properly-resourced, independent CSIRO is essential for building a smarter, fairer Australia. That is why we will restore CSIRO's capacity to help drive the national science, research and innovation agenda.

### **THE LIBERALS' ATTACK ON CSIRO**

In the unfair 2014 Budget, the Abbott-Turnbull Government slashed CSIRO's budget by \$115 million, resulting in the loss of one in five jobs – the biggest staff cut in the organisation's history. The Liberals also cut \$84 million out of National ICT Australia (NICTA) when they forcibly merged it into CSIRO as Data61. Even after realising the short-sightedness of this decision, the Liberals returned only around half of that funding in their National Innovation and Science Agenda plan.

The impact of these Liberal cuts continues to buffet the science agency. CSIRO now plans to cut well over 300 additional jobs from across the organisation, including the Oceans and Atmosphere, Land and Water, Agriculture, Manufacturing, Minerals, Food and Nutrition and Data61 divisions. This includes the loss of up to 100 climate scientists, whose world-leading research has been so critical to our understanding of climate change and its effects both in Australia and around the globe.

### **LABOR'S PLAN TO RESTORE CSIRO'S CAPABILITY**

The extensive job cuts under the Abbott-Turnbull Government have weakened the agency and put at risk its capacity to do high quality, public good research.

A Shorten Labor Government will provide CSIRO with a funding boost of \$249 million over four years, which will reverse the Abbott-Turnbull cuts and provide an additional investment to secure the agency's research capability in the years to come.

This investment will support CSIRO to operate essential national research facilities that are currently threatened with closure, such as the 'The Dish' at Parkes and to make full use of under-utilised research capabilities like the *RV Investigator*.

Additionally, Labor will protect the future of the Great Barrier Reef by investing \$50 million in CSIRO to conduct essential climate and reef research.

### **ENSURING CSIRO'S FUTURE**

The scale of the job losses at CSIRO is reaching crisis point, which is why Labor has announced we would not allow the latest round of over 300 cuts to go ahead. The Science Minister has the capacity

to direct the CSIRO board on key issues of its operation that affect the national interest, and we believe these cuts are so serious as to trigger the use of this power.

Given Labor's intent to stop these cuts, we have called on the Government to put them on hold until after the election. This will prevent further damage to CSIRO's reputation and the morale of its hard-working scientists.

The current crisis within CSIRO has also raised serious questions about its governance and ability to operate independently of Government. Labor will address this by commissioning an independent review of CSIRO's structure, management and functions.

It has been almost 30 years since CSIRO has had such a review, and Labor believes it is time to modernise CSIRO's management and consultation processes.

## **RESTORING UNIVERSITY RESEARCH**

The Abbott-Turnbull Government has used university resourcing as a piggy bank, making massive cuts to the teaching and learning budget, cutting equity programs and slashing schemes to improve the quality of teaching and learning. Labor is committed to restoring funding in the teaching program, but it is only part of the picture.

The Liberals have plundered research block grants by reducing funding to research students and stripping support for the indirect costs of research. They have attempted to charge fees for postgraduate research study, a measure that Labor has prevented and will continue to oppose. They have allowed successful collaboration programs to languish, failing to recognise the value of developing research expertise in less research intensive universities, in industry and in the public and community sectors.

This damage will take some time to repair. Over the medium term, Labor will pursue two objectives for research funding: to ensure university funding adequately reflects the full cost of research; and to maintain globally competitive success rates in grant funding.

Labor will make a positive contribution to these objectives in the short term, by identifying areas of need and making a start on fixing the Liberal's mess.

## **RESEARCH TRAINING FOR THE FUTURE**

The Turnbull Government wants to hike up student fees for PhD and research Masters students to make up for slashing the Research Training Scheme. This is yet another attack on higher education from a Government that seems determined to make it harder for middle and working-class Australians to go to university.

Other than international recruitment, supporting students through higher degrees by research is the sole pathway to supply the scientists and academics that we need to conduct cutting-edge research and to teach the university students of the future.

Equally important is the role that graduates with research higher degrees play in industry, across the private, public and community sectors. The importance of research-qualified workers will only increase as technological advances continue to open up opportunities and present challenges that demand high-tech skills and advanced knowledge.

Labor will not proceed with this unfair plan because we believe higher education should be accessible to all, regardless of their income. This is a basic matter of social justice, but it is also smart policy. Australia needs more, not fewer, young people pursuing advanced degrees to drive innovation.

Labor's investment of \$182 million over the forward estimates will underpin our current and future success as a knowledge-intensive advanced economy.

## **SUSTAINABLE RESEARCH FOR THE FUTURE**

In recent years, Australian universities have been forced to cross-subsidise essential research costs from other sources, including domestic and international teaching and learning revenues, as the full costs of research outstrip conventional research revenues, including block grants and direct competitive project grants.

In government, Labor acted to reduce these pressures and mitigate the associated risks by introducing the Sustainable Research Excellence (SRE) program, designed to help meet the indirect costs of research and thereby relieve pressure on other revenue sources.

The Abbott-Turnbull Government has cut the program's funding by more than \$250 million over the period 2014-2019, with ongoing ramifications beyond. While the reduction did not discontinue the scheme, it reduced its effectiveness to a dangerous level. This regressive step reimposed impossible pressures on research budgets, with the knock-on effect of reintroducing an unacceptable level of risk to other aspects of university operations.

The Liberals clearly intend to force universities to make up the difference by transferring the Government's responsibility to undergraduate students under their misconceived fee deregulation agenda, despite the fact that it had already been rejected by the Senate and the Australian public.

Labor will reverse the Abbott-Turnbull Government's cut to the Sustainable Research Excellence scheme. This will assist universities to fulfil their missions to the quality the community expects and Australia needs, to continue to improve their international standing, and to apply appropriate levels of teaching revenues to teaching and learning activities.

By relieving unsustainable pressure on university research budgets, this measure supports Labor's plan for sustainable funding for university teaching and learning, and reduces the sector's exposure to volatile international student markets and the Australian dollar exchange rate.

## **COLLABORATIVE RESEARCH NETWORKS**

Australia's regional and outer metropolitan universities do great research, but too often they lack the critical mass and established research networks to make the most of their discoveries.

The Collaborative Research Networks (CRN) program established under the former Labor Government showed that connecting these universities to their research-intensive counterparts helps to open new doors for regional researchers and places all Australian science in a stronger and more effective position. Working with larger universities that have a depth of research excellence enables a less research-intensive university to access new knowledge, facilities and networks.

A Shorten Labor Government will invest \$85 million over six years to deliver two new rounds of CRN, so that regional, outer metropolitan and non-research-intensive universities get a fair go when it

comes to research funding. The program will fund collaborative research projects that aim to boost research capability in regional, outer-metropolitan and smaller metropolitan universities and help them build research partnerships with more established, research-intensive institutions.

We know this program works. The Regional Universities Network has described the program as transformational for regional universities – which drive regional innovation and are often the backbone of local economies. CRN has proved to be a cost-effective way to achieve one of the key priorities in research policy – boosting collaboration between universities, and with international counterparts and end-users.

Labor’s policy will deliver more opportunity for PhD students and researchers in regional and outer metropolitan universities to build their skills and networks, and to undertake excellent research that addresses local and regional needs.

The CRN initiative complements Labor’s \$16 million Regional Innovation Fund, which will support entrepreneurship and start-ups through the establishment of accelerators, incubators and innovation hubs in regional Australia.

## **OUR PRECIOUS MARINE ENVIRONMENT**

Australia is the world’s largest marine nation, with our waters extending from the tropics to the Antarctic coast. The enormous diversity of our marine environments includes delicate coral reefs, deep undersea canyons and polar ice-shelves. These worlds host astonishing natural ecosystems, support burgeoning industries and influence our global climate in ways we have only begun to comprehend. We are living in the great age of marine research, and Australia is at its centre.

### **THE PRICELESS GREAT BARRIER REEF**

Labor recognises the environmental, social and economic importance of the Great Barrier Reef, to current and future generations of Australians. We also recognise that this incredible natural wonder is a delicate ecosystem that needs careful study, management, investment and preservation.

The Great Barrier Reef is the largest coral reef ecosystem on earth and one of the best known marine areas in the world. The Reef attracts more than 2 million visitors each year, contributes \$5.7 billion to the economy, and supports approximately 70,000 jobs.

But the Reef is in trouble. Since 1985, there has been a 50 percent loss in hard coral cover across the Reef, as it has been impacted by multiple pressures such as climate change, poor water quality (nutrients, sediments and pesticides), coastal development, extreme weather events, including freshwater inundation, ocean acidification and outbreaks of Crown of Thorns Starfish.

To seriously address all the pressures being faced by this great natural wonder, we need a long-term, well-coordinated and well-resourced strategy. Labor’s plan for the Great Barrier Reef will be supported by a fund of \$500 million over 5 years, representing a down payment on Labor’s commitment to protect this great national treasure and the industries and jobs it supports.

Labor understands that in order to protect and sustain the Reef, and protect the 70,000 jobs it supports, we need to expand our knowledge of the Reef and the environmental and climate

processes that pose significant threats to its viability. The Science and Research pillar of our plan will consist of two components:

- A \$50 million targeted funding boost to CSIRO to conduct Reef-specific science, including climate research; and
- Up to \$50 million for Reef research, to be allocated through a merit based process between Australia's Great Barrier Reef researchers at institutes such as: the University of Queensland, the Australian Institute of Marine Science, the Bureau of Meteorology, James Cook University and others.

### **NEW RESEARCH VESSEL FOR AIMS**

The Australian Institute of Marine Science (AIMS) is a global leader in tropical marine science with strong national and international research links. The Institute has highly developed research capabilities in marine biodiversity and its use, impacts and adaptation to climate change, water quality and ecosystem health. In particular, its ongoing discoveries in marine microbiology are providing new insights into how marine life adapts to environmental change.

AIMS currently has two research vessels – the *RV Solander* and the *RV Cape Ferguson* – which were built in 2007 and 2000 respectively. There is substantial excess demand from Australian and international researchers for time on these vessels, something which hampers our national research effort into marine and reef health, resilience and adaptation.

At 35 metres long and 415 tonnes, the *RV Solander* is capable of operating in both coastal and continental waters. However there is a clear need for a larger vessel to take over research in continental waters, relieving pressure on the *RV Solander* and allowing it to focus on coastal research.

Labor will invest \$60 million over four years to commission a new research vessel for the Australian Institute of Marine Science. The continental research carried out by this new vessel, and the additional coastal research conducted by the *RV Solander* once the new vessel is operational, will contribute to the preservation and sustainable development of our unique marine environment. This includes improving our understanding of the Great Barrier Reef so that we can better care for it, with significant benefits to the communities and industries that rely on it, like tourism, fisheries and bio-manufacturing. Our investment will help Australia meet its international scientific obligations in climate monitoring and research, and extend opportunities to work with and learn from international researchers.

Labor will commission the construction of the new research vessel through limited tenders involving Australian shipyards. This will create jobs for Australian shipbuilders and suppliers during the building phase from 2017 to 2019. The ongoing operating and sustaining capital funding after delivery in 2019-20 will also support more local jobs while strengthening Australia's national marine science capability.

### **RV INVESTIGATOR**

In government, Labor commissioned a new blue water research vessel to replace the ageing *Southern Surveyor* which had been sadly neglected under the Howard Government. The Marine National Facility, *RV Investigator*, was delivered in 2014 but the Abbott-Turnbull Government chose

to fund it to operate for only 180 days a year, when it is designed to spend 300 days a year at sea. This means the most advanced research vessel Australia has ever seen spends half the year tied up in Hobart, for want of operating funds.

Short-changing the state-of-the-art *RV Investigator* is the very definition of a false economy. As part of our new investment in CSIRO, Labor will deliver \$17 million a year to enable the *RV Investigator* to conduct critical research to support our marine economy and environment at sea for 300 days a year.

## **TROPICAL MARINE AND AQUACULTURE RESEARCH**

Labor will contribute \$31.7 million to drive deeper collaboration between the Australian Institute of Marine Science and James Cook University, with these funds to go towards the establishment of JCU's \$100 million Australian Tropical Marine and Aquaculture Centre.

This new industry-oriented aquaculture research and commercialisation facility in central Townsville presents an unparalleled opportunity to forge closer collaboration between two of the nation's most respected marine and aquaculture research organisations, with the close engagement of key industry partners.

Townsville is one of the world's pre-eminent marine science research hubs, and there is also a significant opportunity to develop the aquaculture industry to significant scale in the north to grow more local jobs. Research capability in this growing and profitable industry has outgrown the existing facilities at James Cook University's Townsville campus, sparking demand for the new Centre.

Labor's investment will leverage Townsville's significant scientific expertise in marine science and aquaculture, helping to grow the industry and deliver new discoveries in sustainable food production and marine resource management. Growing the aquaculture industry will not only create jobs, but also support the development of a more skilled workforce, the ability to transfer knowledge and skills to the Asia Pacific region and the potential flow-on effects to educational and science tourism.

This high-profile project will see north Queensland's world-leading marine and aquaculture research project assume a central presence within a new pedestrian and tourist precinct. The research facility will not only take our research capacity to the next level – to the benefit of environmental, fisheries and biological research – but will also constitute a living science experience for tourists, school children and the general public.

The Australian Tropical Marine and Aquaculture Centre is part of the same master plan for the revitalisation of central Townsville as the new Townsville Stadium, to which Labor has committed \$100 million in partnership with the Queensland Labor Government. The Centre will integrate with the stadium and other town planning elements to completely reshape the centre of the capital of the north.

## **SCIENCE EDUCATION**

International research suggests that 75 per cent of the fastest growing occupations now require skills in the fields of science, technology, engineering and mathematics (STEM). Employment in STEM occupations is projected to grow at almost twice the pace of other occupations. The Australian

Industry Group has identified the shortage of STEM graduates to meet demand as a major challenge for business.

In 2014 the former Chief Scientist Ian Chubb urged the Federal Government to “Support the national interest by maintaining the pipeline of STEM graduates, and increase the recognition of STEM education and careers as a public good.” He called for “mechanisms to encourage student uptake into STEM courses, with particular regard to presently less popular core STEM courses and subjects.”

That call fell on deaf ears under the Liberals, but Labor has paid attention and will respond, in the national interest.

## **SCIENCE TEACHING**

The pipeline begins in schools – we know that unless students are interested and engaged in STEM at an early age, they are unlikely to pursue a career in those fields. It is vital to ensure that STEM teachers are equipped to teach with expertise and enthusiasm to encourage students to pursue STEM subjects through to Year 12.

Currently this isn't the case, with more children dropping out of STEM subjects with every additional year of study. Many general science and maths teachers do not have a tertiary qualification in those areas. We need to do more to support Australia's great teachers so that they can deliver STEM courses in a way that will inspire and engage young Australians.

Labor has a two-part plan to upskill teachers as an urgent priority, and create a pipeline of future STEM qualified teachers to join the teaching ranks.

Labor will establish a five-year STEM teacher training fund that will support 5,000 primary and secondary teachers a year to undertake professional development in STEM disciplines, including coding and programming.

The scheme will upskill around 25,000 existing STEM teachers in primary and secondary education, taking their new skills straight to the classroom. Labor will work with teaching bodies, TAFEs and state governments to develop criteria for access to the scheme, and the eligible courses and uses of the grants. We will invest \$127 million in reskilling teachers over four years, kicking off in the 2017 school year.

Labor will also provide 25,000 teaching scholarships over 5 years to new and recent graduates of STEM degrees to encourage them to continue their study and become a STEM teacher. Our Teach STEM will provide an incentive payment to attract more STEM graduates to become teachers. Students that have just completed a STEM degree, or graduated within 5 years, will be able apply for the incentive payments. The payment of \$15,000 is structured so that \$5,000 is paid upon commencement of the course of study, with the remaining paid after their first year in the classroom.

## **STEM HECS WRITE-OFF**

Labor will offer 20,000 STEM Award Degrees a year for 5 years. Upon graduation, the entire HECS-HELP debt will be written off, meaning these students can graduate debt free. This financial incentive for students to complete a STEM undergraduate degree recognises the significant public benefit of

growing Australia's STEM capacity. At present, an average science graduate will take eight years to pay off the \$44,000 HECS debt they leave university with.

In government, Labor will give the next generation of Australians an incentive to undertake STEM degrees and offer them a head start in their working life, free of student debt. This policy will take effect in the 2017 school year, and is costed at \$45 million over the next four years.

## **GIRLS IN SCIENCE**

At university, women remain under-represented in many STEM courses - just 20 per cent of enrolments in engineering, for instance – and this underrepresentation feeds into the workforce.

In 2008, the participation of women in science, technology and engineering jobs was 45.1 per cent, representing an increase of just 2.8 per cent increase since 1992.

Since 2001, the rate of women enrolling in an IT degree has actually fallen from about one in four to just one in 10. Currently only 28 per cent of workers in the ICT are women; and only one in five tech entrepreneurs are women.

Labor's STEM HECS write-off will target women and other under-represented groups, but like other aspect of this pipeline challenge, a comprehensive approach must include a focus on school-level engagement.

Labor will launch Girls into Code – a \$4.5 million grants program to support organisations that promote, encourage and inspire girls to learn code. The program will facilitate mentoring and access to role models, connect coding programs to schools, and create opportunities for girls to build up their confidence and showcase their talent in coding and ICT skills.

## **CODING IN SCHOOLS**

Labor will invest \$9 million to establish a National Coding in Schools centre (NCIS) so teachers in Australia have the opportunity to develop their skills, and every student can have access to exciting ways to learn coding.

NCIS will collaborate and link with industry and experts to develop the materials and content to support coding in schools. This will boost the number of girls engaged from an early age in coding.

To ensure teachers and students benefit from cutting edge virtual programs that set students up for success at school and in the workplace NCIS will:

- Develop and promote innovative teaching of coding in our schools; ensuring teachers in every school can access practical hands on training in coding and its integration into the classroom;
- Partner with business and industry leaders to connect them with the teaching of coding in schools to help establish a culture of innovation and creativity while equipping students with the skills that will be in-demand in the future, including hands-on experience; and
- Provide ongoing engagement with teachers across the country, to support the integration of coding into their teaching with confidence.

## **A MORE ACCESSIBLE QUESTACON**

Questacon is Australia's premier science museum, catering for the general public with an emphasis on science education for the young and very young.

Government funding constitutes 55% of Questacon's annual operating revenue, the rest coming from ticket sales, retail sales, exhibition hire and sponsorship.

Labor is concerned that the high current admission prices – \$23.50 for adults and \$17.50 for children – present an unfair barrier to learning about science to many in our community. This is not only a matter of social equity, but also an impediment to harnessing our entire national talent.

Labor will provide \$14.8 million to allow Questacon to reduce prices by \$7.50 per ticket, without any loss of service. This will bring the price of admission down to \$16 for adults and \$10 for children.

## **RESEARCH AND INDUSTRY**

Labor has always understood that research is critical to sustaining modern industries and transitioning to the jobs of the future. We know that a systems approach, seeking to build cultural change and transform every firm, provides the best security for long-term job creation.

Science and research can help businesses develop new ideas, new technology, new markets and new jobs. That's why the previous Labor Government invested in a targeted suite of measures aimed at delivering against our National Innovation Priorities, as outlined in the 2009 National Innovation Strategy, *Powering Ideas*.

One of these priorities was that "the innovation system encourages a culture of collaboration within the research sector and between researchers and industry". Labor delivered on this priority with programs that worked – including university-based Collaborative Research Networks, the Industrial Transformation Research Program, Researchers in Business, Enterprise Connect, Commercialisation Australia and more.

Building a culture of collaboration takes time, but Labor's approach was working. More universities were coming together to collaborate on research, while businesses were learning the capabilities and value that Australian science and research has to offer.

This progress was undermined by the savage cuts imposed by the Abbott-Turnbull Liberals ever since their 2014 Budget. Labor is determined to undo this damage to the collaborations between industry and research by restoring proven measures.

## **COOPERATIVE RESEARCH CENTRES**

Labor established the Cooperative Research Centre (CRC) program in 1990. Since then, 211 CRCs have been funded, with the Federal Government committing more than \$4 billion over 26 years. CRC participants – research organisations and end-users – have committed a further \$12.3 billion in cash and in-kind contributions.

The CRC program has a global reputation as one of the most successful mechanisms for bringing researchers and end-users together to build sustained collaborations that deliver significant real world impacts. Yet the Abbott-Turnbull Government has badly mismanaged the program, stripping it

of \$107 million, cancelling and delaying rounds, removing public benefit from the assessment criteria and applying an arbitrary maximum 10 year lifespan on even our most successful CRCs.

A Shorten Labor Government will invest \$180 million over 10 years – \$39 million over the next four years – to deliver two additional CRC rounds. This funding will be sufficient to support six new CRCs for ten years each, building knowledge and skills for the jobs of the future.

Labor will also restore the public benefit criteria for the CRC program, which will enable CRCs to be established with non-commercial end-user partners, such as public health organisations and national security agencies. In addition, we will remove the arbitrary 10- year limit on funding to ensure that the best CRCs can be supported, regardless of their age.

This initiative will support a program that has demonstrated success in building collaboration between researchers and end-users since it was established under the Hawke Government 26 years ago.

### **INDUSTRIAL TRANSFORMATION RESEARCH HUBS**

In government, Labor established the Industrial Transformation Research Hubs (ITRH) program to bring researchers and industry together to design and engineer commercially and technically viable solutions to some of our most pressing industrial problems.

The ITRH supports collaborations of up to 5 years duration between university researchers and end-users to undertake cutting edge research on new technologies and economic and social transformation.

The ITRH program has been successful and has potential to grow and support transition and modernisation across a wider range of industries. However limited funding is discouraging industry partners from participating in the development of future project proposals, with the number of proposals received by the Australian Research Council falling in 2015.

To address this, Labor will invest \$24 million to boost the Industrial Transformation Research Program, to support at least four additional collaborative research projects each year for 5 years. This will ensure Australian industries can take advantage of new opportunities, and that new industries can emerge through the application of the excellent research produced by Australian universities.

### **AUSTRALIAN INSTITUTE FOR BIOSECURITY**

Maintaining a strong biosecurity system is critical to ensuring the long-term health of Australia's agricultural sector, animal industries and natural environment. Australia has a strong record in biosecurity science and research, and it is vital that we maintain and build on this capability to meet future challenges.

In 2014-15, plant and animal production in Australia was worth more than \$53 billion and supported the employment of around 280,000 people. Australia's competitive advantage in the food sector relies heavily on our reputation as a provider of clean, green, safe and high quality produce. Protecting that reputation is an important economic priority, as is addressing the cost to farmers and graziers of tackling invasive weeds, animal pests and plant diseases. Lost agricultural productivity and

the cost of control measures for pest animals and weeds alone currently represent a \$5 billion a year hit to the economy.

Hundreds of native wildlife species are at risk of extinction and whole ecosystems are threatened when invasive species such as cane toads, pigs, cats, rabbits, dogs and European carp gain a foothold in Australia. Further, the risk of social impacts of biosecurity failures such as threats to human health will only increase, as climate change and globalisation expose more people and industries to imported pests and diseases.

Australia's biosecurity challenges can only be addressed through strong biosecurity research coordination. Yet funding for the Invasive Animals CRC and the Plant Biosecurity CRC is due to expire within two years, with no eligibility for renewal, and the Abbott-Turnbull Government has done nothing.

In government, Labor will establish a permanent Australian Institute for Biosecurity to manage the challenges of pest animals, weeds and plant disease incursions on the land and in our waterways and oceans. The Institute's primary role will be to maintain and build on the existing network of research and industry partners across plant, animal, aquaculture and marine biosecurity, while securing critical research programs that are delivering real benefits on the ground.

Labor's Biosecurity Institute will work closely with leading university scientists, biosecurity researchers and industry. It will also work with the CSIRO's world-renowned Australian Animal Health Laboratory where there is crossover with animal disease threats. It will also ensure that farmers, ecosystem managers and other end-users are fully engaged in establishing research priorities, participating in research, and feeding their knowledge back through extension activities, boosting their competitiveness and local jobs. Local communities will be engaged in citizen science, including measuring and monitoring incursions and outcomes.

# MANUFACTURING

Advanced manufacturing is critical to our nation's future. Through links with innovation and research, education, services and other sectors, manufacturing fosters the high-skilled, high-waged jobs across the entire economy that help sustain a good life and a diversified advanced industrial base.

The Liberals view manufacturing as a low value, low productivity, non-competitive and non-innovative industry, destined for terminal decline. Nothing could be further from the truth.

Labor sees an innovative sector of incredible resilience; a cornerstone of the Australian economy that weathered the Global Financial Crisis, which employs almost 900,000 workers, contributes around \$100 billion to the Australian economy and more than a quarter of business expenditure on R&D.

If we want Australia to remain an advanced economy with people employed in quality jobs, the choice is not whether we need manufacturing. The choice is about what kinds of manufacturing we should do.

We know that it is difficult to compete on price with low-wage countries producing for mass markets. But we also know that Australian manufacturers can compete in discerning markets where quality matters, just like other advanced countries do.

There are very serious challenges on the horizon with the shutdowns in the automotive industry. While the shutdowns will be felt most keenly in Victoria and South Australia, the implications are national.

At the same time our local metal industries, particularly steel and aluminium, are under significant pressure. Low international prices, high-cost raw materials, the dumping of products from overseas and weak domestic demand are all challenging their long-term viability.

Throughout a number of manufacturing sectors, a lack of investment and inability to finance capital improvements makes it difficult for many Australian manufacturers to improve the efficiency of their operations and increase employment.

There are also broader, global challenges we must address. For the first time since the industrial revolution, increases in technological capacity are leading to increases in productivity but not necessarily to increases in employment.

The continued development of robotics, information and communications technology (ICT), the development of 3D printing and the 'Internet of Things' are all changing the nature of manufacturing.

We are in a new age of automation and digital technologies and we do not have the option of ignoring it.

But balanced against the threat is the opportunity: the opportunity created by our talents, our skills and our ideas. We know we can harness technology to create new jobs and modernise our economic base so that we can win a competition based on quality, rather than lose one based on wages.

Labor has a clear understanding of the challenges facing manufacturing and that is why we see phenomenal potential that is more than capable of attracting the investment needed to flourish.

## AUSTRALIAN INDUSTRY PARTICIPATION

Australian businesses do not always find it easy to connect with opportunities in major projects and international supply chains.

This is not because Australian industry is not competitive; on the contrary. It is largely due to the now well-established practice of multinational companies using global engineering, procurement and construction managers who use default global supply chains because they may not have sufficient knowledge of Australian companies and their capabilities. This is particularly exacerbated if the Australian company is not part of any established global supply chain.

In 2001, the Commonwealth, State and Territory Governments signed an Australian Industry Participation (AIP) National Framework to develop a national approach to maximising opportunities for Australian industry to participate in major investment projects.

In 2002, the Commonwealth introduced voluntary tariff concession measures on eligible goods not produced in Australia for major projects. To qualify, project proponents had to implement an AIP Plan outlining how the project will give Australian industry full, fair and reasonable opportunity to win work on the project.

### A LABOR REFORM AGENDA

Labor built on these reforms steadily throughout our time in government.

In 2009 we released an *Australian Government Procurement Statement*. This included a national Procurement Coordinator to oversee Commonwealth procurement practices and AIP plan requirements for government procurement contracts worth \$20 million or more. These measures were set up so that not only did Australian SMEs have more opportunities to supply goods and services to government projects, but also to ensure that tender specifications were not written in such a way as to exclude Australian suppliers.

We introduced Supplier Advocates across a range of key industries to facilitate access to domestic and global opportunities for Australian SMEs, in partnership with AusTrade, and connect them to existing programs to improve their competitiveness, like Enterprise Connect.

In 2010, Labor introduced the *Buy Australian at Home and Abroad* suite of measures. This included funding for the Supplier Access to Major Projects (SAMP) program to support the State-based Industry Capability Network, additional funds for Enterprise Connect, a Resources Sector Supplier Advocate and the Resources Sector Supplier Advisory Forum, to help Australian SMEs take advantage of the unprecedented opportunities for work arising from major projects in the resources sector.

We continued to build on this strong track record with the \$1 billion *Plan for Australian Jobs* in 2013, with additional measures to strengthen Australian industry participation.

New AIP plan requirements meant that any domestic project worth \$500 million or more had to demonstrate how it would provide full, fair and reasonable opportunities for Australian industry to win work at all levels of the project's supply chain. AIP plan requirements continued to apply to federal projects (including grants and payments through State and Territory Governments) worth \$20 million or more, including Clean Energy Finance Corporation investments.

We increased funding for the Supplier Advocates program, establishing Supplier Advocates across a range of industries, including: steel; rail; water; clean technologies; information technology; textiles clothing and footwear; and resources.

We enshrined these changes in 2013 in legislation through the Australian Jobs Act and set up an Australian Industry Participation Authority to approve AIP plans, publish AIP summaries and monitor and report on the implementation of these reforms.

The 2013 regulation impact statement (RIS) for Australian industry participation measures in the *Plan for Australian Jobs* estimated that, at the time, there were about 23 major projects that did not have a formal AIP plan in place each year. When the RIS was published, the average size of these projects was \$1.4 billion, bringing the total value to around \$32 billion.<sup>7</sup>

The Industry Capability Network (ICN), which has over 20 years' experience engaging local suppliers, suggests that a well-executed AIP plan can increase local content by between 5 and 20 per cent. Based on the conservative estimate of a 5 per cent increase in local content, having a well-executed AIP plan for these 23 projects valued at \$1.4 billion could therefore increase the level of local content by about \$1.6 billion per annum.<sup>8</sup>

It is clear that increased Australian industry participation brings significant benefit to the community and the economy and Labor sees a clear role for Federal Government in turning that opportunity into a reality.

### **HALVE AUSTRALIAN INDUSTRY PARTICIPATION THRESHOLDS**

Labor acknowledges that the previous AIP plan thresholds were set at a different time in the domestic economy; with a much higher rate of investment in the private sector in major mining and resources projects.

Today, our economy is in transition and the number of major projects has dramatically decreased as the investment phase of the mining boom declines.

In light of these changes, we need to ensure Australian industry participation measures have the right thresholds and administrative arrangements in place, so that they continue to provide opportunities for Australian industry to win work on public and private projects.

That is why Labor will halve the threshold for private projects required to prepare an AIP Plan, from \$500 million to \$250 million. We will also halve the public sector threshold from \$20 million to \$10 million.

This will significantly increase the number of projects that will need to have an AIP plan in place, increasing the number of opportunities for Australian business to participate in major bids and win work on both private sector and government projects.

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<sup>7</sup> Strengthening Australian Industry Participation RIS, February 2013, available at <http://ris.dpmc.gov.au/2013/02/27/strengthening-australian-industry-participation-regulation-impact-statement-department-of-industry-innovation-science-research-and-tertiary-education/>.

<sup>8</sup> Ibid.

## **DOUBLE FUNDING FOR THE AUSTRALIAN INDUSTRY PARTICIPATION AUTHORITY**

Labor established the Australian Industry Participation Authority under legislation. We also made provision in the Act for an AIP Board, to work with the Authority, advise Government and ensure the AIP process strikes the right balance in identifying opportunities and building more effective supply chains.

Despite the clear economic benefits of increased local industry participation, the Liberals slashed funding for AIP measures by \$82.3 million in the 2014-15 Budget. They never established an AIP Board and the administrative capabilities of the Australian Industry Participation Authority has been greatly diminished, with the Authority operating with just 8 full-time equivalent staff as at April 2016.<sup>9</sup>

The Liberals have a terrible record on jobs. Unlike Labor, the Liberals are ideologically opposed to government playing an active role to increase full, fair and reasonable opportunities for Australian industry.

Labor will double the current funding envelope for the Australian Industry Participation Authority and appoint an AIP Board, investing \$6.7 million over the forward estimates to ensure there are suitable resources in place to increase opportunities for Australian industry participation.

## **NATIONAL SUPPLIER ADVOCATES IN KEY SECTORS**

Labor will re-establish a network of Supplier Advocates in key industry sectors, starting with the National Automotive Supplier Advocate and the National Steel Supplier Advocate.

Supplier Advocates use their professional networks and expertise to increase the capacity of SMEs, identify barriers to growth and connect businesses with new export opportunities. They build on the work of government agencies including AusTrade, the Export Finance and Insurance Corporation and the Australian Industry Participation Authority.

As part of the *Buy Australian at Home and Abroad* initiative, Labor's Supplier Advocates will help coordinate Federal, State and Territory Government efforts, starting in the automotive and steel industry supply chain, on measures to attract new manufacturing investment and help Australian SMEs break into new domestic and global supply chains and win contracts.

## **MADE IN AUSTRALIA**

Goods and services made in Australia support local jobs and sustain our industrial capabilities, whether they are for domestic sale or for export.

Made in Australia also has considerable international value that benefits Australian businesses. When Australian made goods and services are sold overseas, Australian industry benefits from the price premium.

Made in Australia denotes quality and reliability, but it also means local jobs. Buying these products will see more money invested in the Australian economy, supporting local wages and investment.

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<sup>9</sup> Australian Industry Participation Authority, evidence to a public hearing of the Senate Economics References Committee inquiry on the future of Australia's steel industry, 06 April 2016.

For Labor, the Made in Australia banner is a statement of belief in our people, our businesses, and our ability to compete internationally.

### **PROMOTING AUSTRALIAN MADE GOODS AND SERVICES**

Labor will provide \$5 million over four years to expand the promotion of Made in Australia brands overseas by increasing awareness, supporting the registration of trademarks, and boosting export promotion activities. We will support branding and campaigns that target the growing Asian middle class, with a particular focus on agricultural goods.

Labor will also support an export promotion push to boost the recognition and support for Brand Australia, including promotional opportunities at trade fairs, retail and online promotions, and advertising to support the sale of genuine Australian products in key export markets.

### **ANTI-DUMPING**

Australia's anti-dumping and countervailing system is critically important to the maintenance of fair trade for our domestic producers. Industries, companies and workers are injured when goods from overseas are dumped into the Australian market and when businesses try to circumvent our anti-dumping rules.

In government, Labor strengthened and streamlined Australia's anti-dumping and countervailing system to defend Australian producers from unfair competition.

In 2011, we implemented the most significant reforms to the system in more than a decade. These included comprehensive improvements to Australia's anti-dumping system and establishing the International Trade Remedies Forum (ITRF) with representatives of industry, unions and government, to provide expert advice on anti-dumping policy matters.

In February 2013, Labor built on these reforms with further improvements to the system, including:

- Establishing the Anti-Dumping Commission;
- Making it easier for SMEs to access the system;
- Investing in the then Department of Customs and Border Protection's investigative capabilities, almost doubling the number of investigators; and
- Strengthening penalties for overseas producers that injure Australian businesses by dumping and attempting to circumvent Australia's anti-dumping rules.

Our reforms in 2011 and 2013 delivered stronger protection for Australian industry against unfair competition. The central objective was to build a prosperous economy for the 21st Century – an economy to create and support local jobs.

Labor has been frustrated by the inaction of the Liberals since they came to office, despite their 2013 election commitment to continue Labor's good work and ensure Australia's anti-dumping system remains responsive and up-to-date with the needs of Australian industry.

The result has been the suffering of material injury by Australian industries as they have faced dumping without the appropriate or in some cases, any remedy. Job losses have resulted in a number of key sectors, such as manufactured and processed metals, minerals, chemicals, food and wood products.

The Liberals also sought to abolish the ITRF, without ever having convened a meeting of this independent expert advisory group, and impose an unfair fee on Australian manufacturers seeking a review by the Anti-Dumping Review panel. Labor blocked the Liberals' attempts to impose both these measures in the Senate.

Labor will get Australia's anti-dumping reform agenda back on track and commit to the continued development of a world's best practice WTO and FTA compliant anti-dumping and countervailing system, defending Australian jobs and communities from unfair trade.

### **INTERNATIONAL TRADE REMEDIES FORUM**

To kick-start the next phase in our reform agenda, Labor will hold an urgent meeting of the International Trade Remedies Forum (ITRF).

This is consistent with Labor's policy of seeking independent expert advice from industry on what works, and what doesn't work, when it comes to complex policy issues such as anti-dumping and countervailing.

The ITRF was introduced by Labor as part of a package of reforms to improve and streamline Australia's anti-dumping system. Membership of the ITRF is drawn from industry, manufacturers, producers, importers, unions, industry associations and representatives from government agencies.

The role of this expert advisory group is to provide ongoing strategic advice to government on the implementation and monitoring of Australia's anti-dumping system. For this reason, the ITRF is enshrined in legislation to ensure that this valuable dialogue continues in the future.

Labor will work with the ITRF to consider further reforms to improve and strengthen Australia's anti-dumping system.

### **RECOMMENDATIONS FROM THE ANTI-DUMPING COMMISSION**

In April 2016 the Anti-Dumping Commission provided the Turnbull Liberal Government with advice on how its current powers and penalties could be boosted to prevent the dumping of inferior products from overseas into the Australian market. To date, the Liberals have failed to act on the Commission's recommendations.

Labor Government will use the Commission's findings to further tighten Australia's anti-dumping rules, in line with our international trade obligations.

We will work with the Commission to impose tougher penalties on businesses that ignore the Commission's rulings, just as we have proposed tougher penalties for multinational companies that don't meet their tax reporting obligations.

## **FOOD, FIBRE AND ADVANCED MATERIALS**

Global population growth and the new middle class in the Asia Pacific are leading to a surge in demand for high quality Australian food and fibre products.

As we transition away from a mining dominated economy, we have an unprecedented opportunity to diversify our export base and grow more local food and fibre jobs, particularly in regional Australia.

At the same time, new technologies and advanced materials are creating opportunities for manufacturing jobs and export growth, along the food and fibre value chain and throughout other manufacturing sectors.

Australia's world-class research and innovation in advanced materials should lead to a world-class advanced materials manufacturing industry. Labor understands that this huge opportunity needs to be fostered and supported by a government with a vision and a plan to grow advanced Australian industries.

Despite the importance of these combined industries to the economy and jobs, these sectors do not receive sufficient focus from government or support for growth.

Of significant concern is the lack of growth in capital investment, at a time when the industry needs an infusion of capital to take advantage of the latest technology and be able to compete on quality and ethical production – not a race to the bottom on wages.

A lack of investment has led to concerns about the long-term sustainability of many manufacturing businesses and an inability to finance capital improvements that would increase the efficiency of their operations and increase employment.

Without re-investment throughout the sector in new technologies, processes, equipment, skills, training and R&D, the enormous growth potential in these industries will be squandered. We need the right policy settings to keep pace with rapid changes in our region and changes in technology and the potential for growth and local job creation that comes with them.

### **MODERNISATION GRANTS PROGRAM**

Labor will establish a Food, Fibre and Advanced Materials Modernisation Grants program. This competitive merit-based grants program will match investments by manufacturers in projects to improve the efficiency of their operations and increase investment in innovation and new technologies, including energy efficient capital equipment and low emissions technologies.

These grants are a direct response to industry concerns about the difficulty in accessing finance to invest in capital improvements to manufacturing facilities that lower costs and improve the competitiveness of Australian industries.

Total funding of \$54.2 million over four years will be available to deliver the grants. The program will offer a range of flexible grants of up to \$5 million on a matched funding basis.

Along with this targeted program, Labor will continue to build industry and research linkages and ensure Australia's world-class scientific research infrastructure is deployed to best effect, to grow local jobs and investment in these critical industries, by utilising the formidable strengths of the CSIRO, our universities and the Cooperative Research Centres program.

### **METALS MANUFACTURING AND JOBS**

Australia's local metal industries, particularly steel and aluminium, are under significant pressure. Low international prices, high-cost raw materials, the dumping of products from overseas and weak domestic demand are all challenging their long-term viability.

Australian metal industries are not alone in facing these challenges. Global steel production has doubled since the early 2000s, and the OECD estimates this reached 2.2 billion metric tonnes in 2014. Global demand has been growing at a much slower rate, resulting in oversupply of almost 600 million metric tonnes in that year alone.<sup>10</sup>

Much of the steel and other metal products entering the global market does not meet Australian grade and standards. The recent Senate inquiry into Australia's steel industry heard evidence that as much as 80 per cent of products imported from some manufacturers overseas do not meet Australian standards for safety and quality.<sup>11</sup>

In the United Kingdom, Germany and other advanced economies, governments are grappling with the question of how to sustain significant industries through these challenging times and help them grow stronger for the future.

Although Australia is a small player in the global market, metal production is crucial to our manufacturing capabilities and our ability to remain a diversified, advanced industrial economy.

Global headwinds are strong, but with the right business models, good policy settings from government and investment in new technologies, metal manufacturing in Australia will have a strong future.

## **THE IMPORTANCE OF AUSTRALIAN STEEL**

According to the Australian Steel Institute, the combined Australian steel industry employs more than 100,000 people and has an annual turnover in excess of \$35 billion.<sup>12</sup> More than 33,000 Australians are employed in the production of steel alone.<sup>13</sup>

Locally produced steel is also a critical input for Australia's advanced manufacturing industries and other sectors. Whether it is contributing to the local build of major defence projects like the Future Submarines and Future Frigates, supporting the development of renewable energy projects, or reinforcing domestic construction, access to a high quality steel supply underpins many of Australia's growing industries.

In some parts of Australia, the local economies are built from steel. Australia's two main steel producers, BlueScope and Arrium, together employ around 17,000 people and generate annual revenues of approximately \$15 billion.<sup>14</sup>

The operations of these steel producers are part of a much wider value chain encompassing smaller producers like Bisalloy Steel, which manufactures speciality steel in NSW, through to downstream businesses, including steel fabricators and welders, engineers and design specialists, distribution channels, suppliers and contractors.

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<sup>10</sup> OECD, *Excess capacity in the global steel industry and the implications of new investment projects*, 2015.

<sup>11</sup> Welding Institute of Australia, submission to the Senate Economics References Committee inquiry on the future of Australia's steel industry, 2016.

<sup>12</sup> Australian Steel Institute, submission to the Senate Economics References Committee inquiry on the future of Australia's steel industry, 2016.

<sup>13</sup> Department of Industry, submission to the Senate Economics References Committee inquiry on the future of Australia's steel industry, 2016.

<sup>14</sup> Bureau of Steel Manufacturers of Australia, submission to the Senate Economics References Committee inquiry on the future of Australia's steel industry, 2016.

Securing the future for Australia's steel industry through these challenging times is a nationwide priority demanding a comprehensive plan. It requires a shared focus on industry innovation and sustainable market development from companies, their workforces and governments alike.

The Victorian and South Australian Governments have acknowledged the strategic significance of a local steel industry and are working with industry on critical procurement requirements.

It is time for the Federal Government and other State and Territory Governments to do the same.

## **LABOR'S PLAN FOR METALS MANUFACTURING AND JOBS**

Labor has a *Plan for Australian Metals Manufacturing and Jobs* to promote a sustainable future for Australia's metals industry.

Our plan includes establishing a Metals Manufacturing Innovation Council, which we will convene within 100 days of forming office. The Council will include representatives from industry, unions and governments, and will work closely with a Shorten Labor Government to deliver this package of important reforms.

Although the policies in our plan deal primarily with steel manufacturing, other metal industries face similar challenges. These industries will also benefit from having a direct line to the Federal Government through the Metals Manufacturing Innovation Council.

Australia's aluminium industry, for example, is being squeezed by low international prices and significant industry restructuring. Labor has supported the aluminium industry through this period by getting the Abbott-Turnbull Government to agree to fully exempt it from the Renewable Energy Target (RET).

Labor has developed our plan by listening to industry and being willing to act on the practical challenges holding our metal industries back. We're not just talking about keeping industries strong for the future; we're acting to make sure they can be.

Labor's *Plan for Metals Manufacturing and Jobs* includes:

- New steel procurement regulations mandating the use of steel that meets Australian standards and certification requirements on all federally funded projects.
- Assisting local steel producers and fabricators meet the cost of new certification standards through a \$15.6 million grants scheme to help cover the cost of inspection and accreditation.
- A National Steel Supplier Advocate to work with Australian steel manufacturers to help them win major contracts.
- Halving the thresholds for projects required to have an Australian Industry Participation (AIP) plan in place down to \$250 million for private projects and \$10 million for public projects.
- Doubling funding for the AIP Authority and appointing an AIP Board, restoring the resources required to create more opportunities for Australian industries.
- Developing a regular reporting system with the Australian Industry Participation Authority and the National Steel Supplier Advocate, to track the use of Australian steel in federally-funded projects.
- Making sure Australia's anti-dumping system is operating effectively and exploring tougher penalties for businesses that circumvent rulings of the Anti-Dumping Commission.

## STEEL RESERVE

Local steel is the backbone for Australia's rail, road and construction projects. The ability to make our own steel is also critical for major projects, particularly in the defence and infrastructure sectors.

Australian steel production is concentrated in a handful of major suppliers and Arrium is the only local producer of the long structural steel products needed for major infrastructure and construction projects. The company is a major contributor to the South Australian economy, in particular, and the steelworks at Whyalla is the heart of that community.

If Australia is to remain a country that can make things at home, we cannot lose our ability to produce local steel. Our steel industry can have a strong future if we act to put the right investments and policies in place.

Labor will partner with the South Australian Government to make targeted investments at Arrium to strengthen steel production at Whyalla and across the state, through a \$150 million Steel Reserve fund.

Labor will provide \$100 million in grants and financing as part of a joint Steel Reserve, which includes a \$50 million contribution from the South Australian Government.

The Steel Reserve will support Arrium make targeted investments that secure its long-term future, with financing to be made available to the administrator or future buyer on a matched funding basis. This will see up to \$300 million invested in new plant and equipment to make Arrium more productive and efficient while securing local jobs.

Federal Labor will provide up to 50 per cent of our contribution in direct grants, with the remaining 50 per cent to be provided as financing or loan guarantees through the Export Finance and Insurance Corporation.

Our contribution will be provided on the condition that funds are directed to investments that:

- Promote the long-term sustainability of Arrium, including through increasing its ability to contribute to major Australian infrastructure projects.
- Secure Arrium's operations in Australia, and particularly Whyalla.
- Assist the business in permanent cost reductions which do not cost jobs, particularly through increased energy efficiency and productivity gains.

The Steel Reserve will help modernise Arrium and improve the competitiveness of Australia's structural steel production. Financing will be made available from the Steel Reserve for specific investment projects that have an agreed business case approved by both the Commonwealth and South Australian Governments.

The Steel Reserve may not be used to pay down Arrium's debts or meet regular operating costs and Labor's commitment will be withdrawn in the event that a future buyer of Arrium does not maintain local steel production and jobs in South Australia.

## **STRATEGIC INDUSTRIES FUND**

Labor's guiding philosophy for more than a century has been that a stable job, with decent pay and conditions, is the bedrock of a decent life. Saving for a home, raising a family and having financial security in retirement is only possible when you have a decent job.

Climate change will drive the most significant economic transformation in modern history. We need a plan to address the challenges posed by a changing climate and create new opportunities for our businesses and industry to secure the jobs of the future.

Labor also recognises that there are sectors of the economy that are of particular strategic importance, like steel, cement, aluminium and others. These industries are energy intensive and trade exposed (EITE), competing with growing economies like China, India and the Asian region. Many of these industries are limited by the extent of technological change on the horizon, which constrains their ability to substantially reduce their inherent emissions intensity.

No global environmental purpose is served by such operations closing in Australia and being picked up by another nation. This 'carbon leakage' has serious and obvious economic and jobs impacts in Australian communities.

Labor understands that maintaining strong and viable local industries is important for Australia's economic development and our successful transition to a low-carbon future. That is why we will support the competitiveness of EITE that are strategically important to this country's future.

Labor will establish a Strategic Industries Taskforce to undertake in-depth consultation with EITE industries and identify options to support their future competitiveness. This work will be supported by a Strategic Industries Reserve Fund, with an initial investment of \$300 million to 2020, to support the transition of key industries to a low carbon economy.

The \$300 million Strategic Industries Reserve Fund will help EITE industries modernise and invest in energy efficient capital equipment and low emissions technologies. It will initially be capitalised up to 2020 as part of the first phase in Labor's Emissions Trading Scheme, with further investments to be negotiated through the Strategic Industries Taskforce.

Labor recognises that different industries will have different timeframes to modernisation and facilitating this change may require the use of different tools. In keeping with Labor's focus on innovation across government as well as in the private sector, the fund would seek to leverage new kinds of government/industry partnerships and innovative financing models.

## **NATIONAL RAIL STRATEGY**

The Australian public transport rail market is expected to experience significant growth in coming years. We are already one of the world's most urbanised countries on a per capita basis and the proportion of people living in Australian cities and towns is growing.

Over the next decade we will see significant investment from States in rail transport, with a pipeline of over \$46 billion already committed or planned for rail-based public transport projects throughout Australia, including light rail and rolling stock.

However, Australia's state-based public transport rail manufacturing sector is fragmented, inefficient and long overdue for reform. In addition, States and territories are not required to coordinate or benchmark their procurement efforts for rail and rolling stock.

The effect of this fragmentation has repercussions throughout the industry, the supply chain and the broader economy, including:

- Potential clashes in timing of tenders.
- Unnecessary complexities in the design and build phase.
- Unpredictable order volumes.
- No national pipeline for wagon builds.
- Difficulty in maintaining a standing workforce and tooling lines.
- No long-term strategic vision for manufacturing and procurement.

Due to a lack of coordination and no national approach, the public transport rail manufacturing sector has operated on a 'boom and bust' business cycle, with very high volume years sometimes followed with years where no orders are sought at all.

All of these inefficiencies result in dramatically reduced value for money to taxpayers and poorer services for consumers.

### **A NATIONAL PASSENGER RAIL PROCUREMENT STRATEGY**

Labor will work with the states, industry and unions to implement a National Passenger Rail Procurement Strategy, to generate significant improvements in passenger rail and rolling stock manufacturing through coordinated procurement and the harmonisation of standards.

Just as we need a continuous build and procurement strategy to maintain our strategically vital shipbuilding industry, we need a national strategy for Australia's strategically vital passenger rail industry.

The National Passenger Rail Procurement Strategy will be developed during the first 12 months of Labor forming office and will include recommendations for the next wave of reforms needed to streamline and harmonise rail-based public transport projects.

Labor will also work with the States to examine the feasibility of establishing a joint Commonwealth and State Government national public transport authority, with shared responsibilities to address fragmentation in the sector, maximise opportunities for volume and certainty as well as innovation for local manufacturers and suppliers.

Research commissioned by the Australian Manufacturing Workers' Union (AMWU) from Juturna Infrastructure and Cadence Economics has estimated that a well implemented national rail strategy could increase rail manufacturing productivity by 25 and 30 per cent, and result in:

- The creation of up to 659 full-time manufacturing jobs (avg. annual employment).
- An increase in GDP of up to \$5 billion.
- An increase in industry gross value added of up to \$8 billion.
- The birth of a rolling stock export industry worth up to \$4.6 billion.<sup>15</sup>

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<sup>15</sup> AMWU, *Reforms to save our public transport rail manufacturing sector*, June 2016.

A genuinely national and strategic approach to rail manufacturing and procurement will not only grow our passenger rail manufacturing industry, growing capability and local jobs in the sector, it will also lead to long-term savings for taxpayers through improved rail manufacturing competitiveness.

## **ADVANCED AUTOMOTIVE INDUSTRIES**

Australia's automotive manufacturing capabilities are a national asset extending beyond motor vehicle production – encompassing component manufacturing, aftermarket manufacturing, engineering and design. Together, these combined industries employ many tens of thousands of people and are a powerhouse of Australian manufacturing capability.

Our engineers and designers are at the leading edge of international automotive technologies and the industry supplies skills and technologies on which other businesses rely. Our world-class engineering and design capabilities spill over into defence equipment, rolling stock, motorsport, motorcycles, agricultural and industrial machinery.

If we want an economy that is not excessively dependent on the vagaries of commodity markets we must do everything possible to retain the industrial capabilities that automotive manufacturing sustains.

### **A CHALLENGE AND AN OPPORTUNITY**

Automotive vehicle production employs more than 48,000 people and is supported by a supply chain of around 160 businesses, involved in component manufacturing, engineering, design and tooling.<sup>16</sup> Beyond this, there are at least 260 businesses in Australia that manufacture aftermarket components and accessories.<sup>17</sup>

The combined automotive industries employ almost 930,000 people, across a value chain encompassing the manufacture of cars, trucks, buses and aftermarket accessories, as well as automotive repair, maintenance, retailing and wholesaling.<sup>18</sup>

This complex supply chain will not simply cease to exist after the announced closure of Ford, Holden and Toyota's motor vehicle production facilities in Victoria and South Australia.

Even with the departure of the carmakers, Australia will still have an automotive industry after 2017. What that industry looks like, now and into the future, depends on what we do today and how governments respond to the challenge.

Independent modelling from the Australian Workplace Innovation and Social Research Centre (WISeR) at the University of Adelaide suggests that Australia will suffer a fall in employment of around 200,000 as a result of planned closures in motor vehicle manufacturing between now and 2017, and a negative annual shock of \$29 billion or more by 2017, or around 2 per cent of Gross Domestic Product (GDP).<sup>19</sup>

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<sup>16</sup> Senate Economics Reference Committee, *Future of Australia's automotive industry interim report*, 2015.

<sup>17</sup> Australian Automotive Aftermarket Association, *Committee Hansard*, 10 March 2016.

<sup>18</sup> Department of Industry and Science, *Automotive Industry Data Card*, June 2014.

<sup>19</sup> Australian Workplace Innovation and Social Research Centre, University of Adelaide, *Closing the Motor Vehicle Industry: The Impact on Australia*, April 2014.

The shutdown of motor vehicle production by the end of 2017 was not inevitable.

It was the result of a political decision. The Liberals' selective ideological resistance to industry assistance caused them to disregard the strategic importance of automotive manufacturing for the wider economy and for local communities.

Despite the Liberals' aggressively anti-automotive policy agenda, Australia's automotive industry still has the capacity to remain part of the global market. That is beyond doubt.

Two of the motor vehicle producers will retain design centres and proving grounds in Australia after they cease production, while many of their component manufacturers have already begun to integrate into global supply chains.

But retaining these capabilities will not be easy. According to WISer's research, the actual impact of closures will depend on a number of factors, including the capacity of companies to adapt to the changing environment and the level of support for the industry.

With the right policy settings, Australia still has a chance to compete at the cutting-edge in global advances in automotive technology and product design, such as autonomous vehicles and telematics, new battery technologies, electric vehicle technologies and alternative fuels.

Maintaining capabilities and growing Australia's advanced manufacturing base is the best strategy we have to try and mitigate job losses and reduced economic activity as a result of automotive closures.

To do that, we need to ensure existing automotive suppliers have the best opportunities to access global supply chains and diversify and expand their product range.

We need to attract investment from companies that are willing to invest in Australia, employing people in high-skill, high-wage jobs, developing and commercialising new technologies.

## **MANUFACTURING TRANSITION BOOST**

Labor will invest \$56.8 million in a Manufacturing Transition Boost to assist more automotive supply chain businesses diversify their business and access new markets.

Working in partnership with the Victorian and South Australian Governments, Labor's investment will boost existing government assistance program in those regions most heavily affected by closures in motor vehicle production. This will provide pathways to new jobs for skilled workers by encouraging business investment in advanced manufacturing.

We want to ensure the regions that have the skills today, have the jobs of tomorrow.

Labor's Manufacturing Transition Boost has two elements:

- \$10.5 million to boost opportunities for existing automotive manufacturing businesses connect with international supply chains, develop new products and improve productivity.
- \$48.1 million to support new investment and new job creation in a broader range of industries, particularly in those regions most heavily affected by closures in motor vehicle production.

## **NATIONAL AUTOMOTIVE SUPPLIER ADVOCATE**

Labor will appoint a National Automotive Supplier Advocate to work with automotive supply chain manufacturers to:

- Help them secure new work and new contracts to maintain their operations.
- Work with business to identify new opportunities to expand and adopt the latest technologies.
- Identify barriers to diversification and growth and provide advice to industry and to governments on how these barriers can best be overcome.

The National Automotive Supplier Advocate will work with Australian SMEs throughout the automotive manufacturing supply chain, helping them break into new domestic and global supply chains and win manufacturing contracts, both at home and abroad.

As part of Labor's *Buy Australian at Home and Abroad* suite of measures, these Supplier Advocates will use their professional networks and expertise to increase the capacity of SMEs, identify barriers to growth and connect businesses with new export opportunities. They build on the work of government agencies including AusTrade, the Export Finance and Insurance Corporation and the Australian Industry Participation Authority.

The National Automotive Supplier Advocate will help coordinate Federal Government efforts in the automotive supply chain with complementary State and Territory initiatives, including Labor's \$58.6 million Manufacturing Transition Boost. They will also work with the Federal, State and Territory Governments on attracting new manufacturing investment, particularly in automotive manufacturing industries.

# FUTURE INDUSTRIES

Innovation is the key to Australia's future prosperity. Most of the jobs of the future will be with companies that do not exist today or in industries that have changed dramatically to keep pace with rapid advances in technology.

Nations that want to foster economic growth do not have the luxury of standing still. Without keeping pace with global progress, no nation can be confident of a secure, let alone a prosperous, future.

For Australia in particular, the challenge is urgent.

The commodities boom that sustained growth for much of the past decade is over, with iron ore and coal prices continuing to fall. The investment phase has peaked and new jobs and growth must come from somewhere else.

Automation and digital technologies are taking the place of jobs Australians were brought up to believe were secure; whilst making it easier for other jobs to be shifted overseas.

The global economy is changing and nations that refuse to innovate will fall behind.

If Australia is to remain an advanced industrial economy, we need an education system that sets our children up not only to do the jobs of the future, but to create the jobs of the future.

We need a strong research base that's tapped into the latest breakthroughs emerging from the global science enterprise, with researchers developing new discoveries here at home.

We need businesses and industries that invest in Australian enterprise, drawing on a reliable source of graduates in science, technology, engineering and mathematics (STEM) to bring new products to market and transform their operations.

We need entrepreneurs and innovators who embrace a culture of risk – turning their passions and ideas into new industries and new jobs in Australia.

For Labor, creating the new industries and new jobs of the future is a national economic priority.

## INNOVATE AUSTRALIA

Labor will establish a new independent agency called *Innovate Australia* charged with accelerating economic growth, delivering critical innovation programs and providing expert advice to governments.

For too long the policies that foster innovative businesses and support the creation of future jobs have been at the mercy of political ideologues and the vagaries of election cycles.

There is an urgent need not just for stability, but also for a strategic approach to the development and implementation of long-term, effective innovation policies.

This new, independent agency will be responsible for the administration and delivery of new innovation initiatives, along with existing programs including:

- The Entrepreneurs' Program.
- Accelerating Commercialisation grants.
- Industry Growth Centres.
- R&D Tax Incentive policy and program design.
- Startup and venture capital programs.
- The Growth Fund and associated programs.
- Manufacturing grants programs.

*Innovate Australia* will be modelled on the highly successful innovation agency in the UK – Innovate UK. It will be established via legislation by transforming the existing Innovation Australia Board.

Establishing the agency under an Act of Parliament minimises the risk of political interference and changes to government innovation policies, while bringing administration and delivery of critical innovation policies under the auspices of a single, independent agency to provide much needed certainty and strategic direction for businesses, entrepreneurs, academia and the research community.

## STARTUP YEAR

Australian startups are crucial to building the jobs of the future. The Australian tech startup sector has the potential to contribute 540,000 new jobs in the next two decades.

Labor will boost Australia's young aspiring entrepreneurial talent by providing income contingent loans to students to support their participation in university accelerators or similar incubators run by successful entrepreneurs.

Startup loans will be offered to 2,000 students and new graduates each year that want to establish a startup within a university-based (or similar) accelerator. The loan will cover the cost of the support provided to them by an accredited accelerator program and accredited non-award programs and initiatives, up to the maximum annual student contribution level under the HECS system.

Delivering new startup loans through the existing HECS system will offer final year students and new graduates the option of taking an additional business-focussed year so they can develop their innovative startup ideas.

It aims to encourage systemic change at universities through supporting the development of university accelerators and incubators. Over time this may assist in supporting more partnerships with well-established and leading facilities such as Tank Stream Labs, Blue Chilli, Fishburners, ATPi and equivalents around the country.

This program will drive a competitive market as education institutions seek and develop the best talent and draw in private sector mentors and investors. This will improve collaboration between universities and the investment and technology sectors and strengthen Australia's entrepreneurial ecosystems.

## **REGIONAL INNOVATION HUBS**

Labor understands that innovation can't be something that only happens in our big cities. If we're to compete in a 21st Century economy, we also need to support innovation in our regions.

Labor will create a Regional Innovation Fund to kick-start a range of initiatives to expand the role of Australia's regions in contribution to the national innovation effort.

We will invest in an expansion of the network of hubs and accelerators across the country, focussing on regional and rural sites. Labor will also support the continuation and expansion of existing university-based hubs and accelerators in metropolitan and outer-metropolitan universities.

While university-based accelerators are at the centre of this initiative, it will be open to other avenues to boost regional innovation activity, like an entrepreneurship hub at a local TAFE or a private consortium that has attracted demonstrated regional support across business and State/local government bodies.

Labor will fund the establishment of up to 20 new accelerators over three years. Each consortium would receive seed funding of up to \$500,000 per year for three years, which must be matched at least dollar-for-dollar with funding from the consortium or other sources.

Metropolitan universities will be eligible for grants of up to \$200,000 per year to establish or expand an accelerator or hub, which will also need to be matched dollar-for-dollar by either the university, industry or other sources.

Funded innovation hubs would also have flexibility in the amount and type of support offered to individual startups, enabling hubs to experiment and identify what works in creating new businesses in regional Australia.

Activities that could be supported by the fund include:

- Addressing skills and experience gaps by enabling established entrepreneurs from various parts of the country to team up with regional accelerators and mentor new startups.
- Enabling university-based accelerators to offer seed funding for a limited number of student-led startups on a competitive basis to support prototyping and early proof-of-concept.

Central to our approach will be a commitment to consult and work with regions to ensure that the Regional Innovation Fund provides the greatest possible benefit to a regional innovation effort.

## PROCUREMENT

Procurement policy and innovation policy are intrinsically linked. Intelligent purchasing stimulates investment and sustains industries. It nurtures innovative SMEs and fosters a competitive economy.

Federal Government procurement, in particular, is an important mechanism in advancing Australian industry. In 2014-15 the Federal Government spent almost \$60 billion in acquiring goods and services through tender processes, of which approximately \$30 billion was for non-Defence related goods and services.<sup>20</sup>

This highlights the significance of the Federal Government's role as a direct purchaser of goods and services.

However, government purchasing decisions are too often steered towards acquiring well established products and services. Conservative decision-making prevents federal agencies from engaging effectively with startups and SMEs.

This means that new technologies and the offerings of Australia's innovative SMEs are often bypassed.

Labor is announcing a two-pronged approach to attract the smartest minds to public policy problems, and to support startups and SMEs to be more competitive in selling to government.

### SUPPORTING STARTUPS AND SMES TO COMPETE IN GOVERNMENT TENDERS

Labor will do more to ensure departments and agencies better engage with SMEs and startups, to drive innovation and help Australian entrepreneurs prove the value of their ideas.

We will work with federal agencies to engage in and support pre-commercial collaboration with SMEs and startups to give them a foot in the door on procurement tenders.

This is not about targeting particular firms or pre-empting competitive tender outcomes. It is about levelling the playing field for innovative Australian businesses that otherwise struggle to compete in government procurement.

Labor's program will support pre-commercial collaboration between agencies and SMEs well in advance of tenders being released, giving firms plenty of time to develop their capabilities and address issues around finance, skills and product development.

It will be structured in a similar way to the Small Business Innovation Research program (SBIR) in the US and the Victorian Government's SME Market Validation Program.

Labor will commit \$5 million to this program over two years as an initial investment and funding will be offered at two levels:

- A phase one grant of up to \$100,000 for detailed research and development and feasibility assessment.
- Phase two funding for proof-of-concept activities, where the feasibility stage has demonstrated that the idea has strong potential for commercial development.

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<sup>20</sup> Department of Finance, *Statistics on Australian Government Procurement Contracts*, December 2015.

The previous Labor Government announced a similar program as part of its *Plan for Australian Jobs*, but the Liberals abandoned the initiative, leaving Australian innovation behind yet again.

## **CHALLENGE PLATFORM**

Labor will trial an 'AusGov Challenge Platform' to engage all Australians in the challenges that face government. Similar to challenge.gov in the US, this platform will provide a single portal for government agencies to submit challenges for the public to respond to.

The trial will initially engage a group of 10 to 12 agencies that are seeking to identify new approaches to utilising data, technology and analytics to solve their policy and management challenges.

These projects (essentially competitions) will be managed through a centralised online platform, with agencies setting reward funding or prizes based on the expected return to government from solving the problem.

In the United States, for example, the National Oceanic and Atmospheric Administration is offering \$10,000 in prizes for the creation of a system to automate the identification of endangered Right Whales using a dataset of aerial photographs.

At the other end of the spectrum, the US Department of Veterans' Affairs is offering \$300,000 in prizes to create algorithms for identifying redundancies, gaps, conflicts and interactions among care-plan items and other data.

Labor will commit \$5 million to establish the online challenge platform and build capacity in agencies that choose to participate in the trial.

If successful, the platform will be expanded and the procurement rules and processes amended to enable the challenge platform to grow and adapt as agencies develop new, more complex proposals.

## **ACCESS TO FINANCE**

According to the latest Australian Innovation System Report (2015), the greatest barrier to innovation for all young SMEs aged up to four years remains lack of access to additional funds.<sup>21</sup> Yet Australia punts more on the Melbourne Cup each year than it invests all year in innovative new startup businesses.

Not enough finance is flowing into our startup sector and future industries, which is stunting innovation in Australia, slowing the development of new ideas and new business opportunities.

Labor has announced a number of measures to improve access to capital for the commercialisation of great Australian ideas and the establishment of startup ventures. These include:

- Bringing together the superannuation, venture capital and startup sectors in an Innovation Investment Partnership to identify barriers holding back investment in Australian-based venture capital funds and early-stage enterprises.
- Improving access to finance for startups and micro-businesses through a partial guarantee scheme, Startup Finance.

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<sup>21</sup> Australian Innovation System report 2015, pg. xi.

- An Australian Angel Investment Scheme, based on the UK Seed Enterprise Investment Scheme (SEIS), to attract greater private financing support for startups in the early stage of their development.
- Fixing the Liberal Government's flawed crowdfunding laws to ensure that crucial crowdfunding reforms are actually effective at raising much needed investment capital.

However there are many gaps in early stage financing and a number of measures are required to enable startups across a diversity of sectors to bridge the valley of death.

### **\$500 MILLION SMART INVESTMENT FUND**

Labor will establish a new \$500 million Smart Investment Fund, building on the previous Innovation Investment Fund (IIF), which was abolished by the Liberals in 2014.

The Smart Investment Fund is a government-backed venture capital (VC) scheme. Through it, we will partner with venture capitalists and licensed fund managers to co-invest in early stage and high potential companies, providing a Commonwealth Government investment of up to 50 per cent of the startup capital needed to help Australian companies commercialise their smart ideas and innovations.

In addition to providing a co-investment, businesses supported by the Smart Investment Fund will gain access to expert advice in commercialisation and access to international networks.

The Smart Investment Fund is based on the IIF, created by the Howard Government in 1998. The IIF has long enjoyed bipartisan support before it was summarily abolished by the Abbott Government in the 2014 Budget.

The IIF supported the establishment of long-term VC funds to develop high-growth, globally competitive Australian companies that leveraged our strong research capabilities. Industries as diverse as manufacturing, clean technology and energy, software, medical devices and biotechnology, were supported by the IIF before its untimely abolition by the Liberal Government.

### **REFORMS TO EARLY STAGE VENTURE CAPITAL LIMITED PARTNERSHIPS (ESVCLP)**

Venture capital funds of between \$10 million and \$100 million invested in Australian businesses are entitled to preferential tax treatment through the ESVCLP program.

ESVCLP entitles a fund to flow-through tax treatment and its investors receive a complete tax exemption on their share of the fund's income (both revenue and capital).

In order to support a larger and more active venture capital industry Labor will streamline and update the requirements of the ESVCLP program, including lowering the minimum level of investment required for entry into the ESVCLP program from \$10 million to \$5 million to facilitate increased funding from angel investors.

# LABOR'S POSITIVE POLICIES FOR INNOVATION

Labor has put forward a number of policies to advance Australia beyond the mining boom by investing in our greatest resource – the creativity and capacity of our people.

## HIGHER EDUCATION

- Increase the number of students completing their study by 20,000 graduates a year from 2020.
- Deliver more information for parents and students so they can make good decisions about university.
- Introduce a new Student Funding Guarantee to deliver \$2,500 more per student than the Liberals, and remove the need for higher fees and a lifetime of debt.
- Invest \$31 million to boost the quality of teaching and resources in our universities.
- Establish an independent Higher Education Productivity and Performance Commission to ensure our tertiary institutions and our graduates meet the needs of the future economy.
- Introduce a Higher Education Access and Growth Strategy to lift equity and improve student outcomes, including completion, for disadvantaged students.
- Establish a network of pilot Commonwealth Institutes of Higher Education to expand the availability of quality associate degrees and advanced diplomas in areas of demonstrated need, where barriers to access are keeping people out of higher education and advanced training.
- Boost the number of young Australians taking up STEM courses at university, particularly women.
- Teaching scholarships for 25,000 science, technology, engineering and mathematics graduates to teach STEM in our schools.
- Boosting the skills of 25,000 current primary and high school teachers with STEM professional development.

## SCIENCE & RESEARCH

- Set a goal for Australia to lift investment in research and development as a proportion of GDP to 3 per cent by 2030.
- Reverse the Liberals' savage cuts to CSIRO with an injection of \$250 million over the forward estimates, supporting the continued operation of national research facilities such as the 'The Dish' at Parkes, and make full use of under-utilised research capabilities, like the *RV Investigator*.
- Halt the current round of job cuts at CSIRO and commission an independent review of CSIRO's structure, management and functions.

- Invest \$182 million over the forward estimates to reverse the Liberals' policy of fees for PhDs and research Masters students by slashing the Research Training Scheme (RTS).
- Reverse cuts to Science Research Excellence (SRE) block grants, providing \$172 million to support university research.
- Invest \$85 million over six years to deliver two new rounds of the Collaborative Research Networks (CRN) program, giving regional, outer metropolitan and non-research-intensive universities a fair go when it comes to research funding.
- Invest \$500 million to protect the future of our Great Barrier Reef, including \$50 million for CSIRO to conduct climate and reef research and a further \$50 million for reef research by other relevant research organisations.
- Commission a new \$60 million research vessel for the Australian Institute of Marine Science (AIMS), to be built in Australian shipyards, strengthening the research effort around our precious marine environment, including the Great Barrier Reef.
- Provide \$32 million to help establish an Australian Tropical Marine and Aquaculture Centre in North Queensland, driving deeper collaboration between AIMS and James Cook University.
- Reduce the cost of entry to Questacon, Australia's premier science museum, by \$7.50 per ticket without any loss of service – bringing the price of admission down to \$16 for adults and \$10 for children.
- Boost funding for the Cooperative Research Centre (CRC) program by \$180 million over ten years to deliver two additional rounds (supporting six new CRCs) and restore the public benefit criteria for the CRC program.
- Invest \$24 million to boost the Industrial Transformation Research Hubs (ITRH) program, which supports collaborations between university researchers and end-users to undertake cutting edge research on new technologies and economic and social transformation.
- Provide \$77 million for an Australian Institute for Biosecurity to help ensure the long-term health of Australia's agricultural sector, animal industries and natural environment.

## **MANUFACTURING & FUTURE INDUSTRIES**

- Strengthen Australian Industry Participation (AIP) measures – halving thresholds for projects required to have an AIP plan in place; doubling funding for the Australian Industry Participation Authority and appointing an AIP Board.
- National Supplier Advocates in key sectors, starting with a Steel Supplier Advocate and an Automotive Supplier Advocate, to help Australian SMEs break into new domestic and global supply chains and win contracts.
- Provide \$5 million to expand the promotion of Made in Australia brands overseas, by increasing awareness, supporting the registration of trademarks, and boosting export promotion activities.

- Kick-start the next phase in Labor’s anti-dumping reform agenda and hold an urgent meeting of the International Trade Remedies Forum (ITRF).
- Making sure Australia’s anti-dumping system is operating effectively and exploring tougher penalties for businesses that circumvent rulings of the Anti-Dumping Commission.
- Establish a \$54.2 million Food, Fibre and Advanced Materials Modernisation Grants program to drive local jobs and attract investment in manufacturing, particularly in rural and regional areas.
- Implement a six-point *Plan for Australian Metals Manufacturing and Jobs* to promote a sustainable future for Australia’s metal industries, starting with a Metals Manufacturing Innovation Council within 100 days of Labor forming office.
- Partner with the South Australian Government to make targeted investments at Arrium to strengthen steel production at Whyalla and across the state, through a joint \$150 million Steel Reserve fund (with a contribution of \$100 million from the Commonwealth).
- Provide an initial investment of \$300 million to 2020 for a Strategic Industries Fund to help emissions intensive trade exposed industries invest in energy efficient capital equipment and low emissions technologies.
- Work with the states, industry and unions to implement a National Passenger Rail Procurement Strategy to generate significant improvements in passenger rail and rolling stock manufacturing, creating more rail manufacturing jobs and rolling stock exports.
- Invest \$56.8 million in a Manufacturing Transition Boost to assist more automotive supply chain businesses diversify their operations and attract manufacturing investment.
- Establish a new independent agency called *Innovate Australia*, charged with accelerating economic growth, delivering critical innovation programs and providing expert advice to governments.
- Create a new Startup Year at universities, offering startup loans for 2,000 students and new graduates each year, helping them develop their idea, get business knowhow and connect with finance through university accelerators or similar incubators run by successful entrepreneurs.
- Accelerate innovation in our regions through a \$16 million Regional Innovation Fund, which will support entrepreneurship and start-ups through the establishment of university-based accelerators and incubators throughout regional Australia.
- Encourage government departments to engage in pre-commercial collaboration with SMEs and startups to give them a foot in the door on procurement tenders, similar to the US Small Business Innovation Research program (SBIR) and the Victorian Government’s SME Market Validation Program.
- Build a new ‘Challenge Platform’ for government to engage our best and brightest minds in solving public policy problems, based on the US Government’s challenge.gov.

- Bring together the superannuation, venture capital and startup sectors in an Innovation Investment Partnership to identify barriers holding back investment in Australian-based venture capital funds and early-stage enterprises.
- Work with banks and the finance industry to develop Startup Finance, a partial guarantee scheme to improve access to finance for Australian micro-businesses.
- Establish an Australian Angel Investment Scheme, based on the UK Seed Enterprise Investment Scheme (SEIS), to attract greater private financing support for startups in the early stage of their development.
- Ensure that crucial crowdfunding reforms are effective at raising much needed investment capital.
- Back in great ideas through co-investing in early stage and high potential companies through the \$500 million Smart Investment Fund.
- Streamline and update requirements for the Early Stage Venture Capital Limited Partnerships (ESVCLP) program, including lowering the minimum level of investment required to \$5 million to facilitate increased funding from angel investors.
- Backing our best entrepreneurs overseas by creating landing pads for Australian innovators.

# LIBERAL CUTS ENDANGER AUSTRALIA'S FUTURE

Under the Liberals, Australia's innovation system has been plunged into crisis, across higher education, manufacturing, science and research.

Since the horror budget of 2014, Australia's universities and their students have been on notice that the Liberals intend to take a massive 20 per cent cut from the teaching revenues and pass the burden of public funding onto individual students.

Huge increases in course fees and a lifetime of debt are still on the table, even though the Senate and the Australian people have unambiguously rejected the proposals.

It is hard to imagine a more economically myopic decision than to tilt the board against Australian kids getting a better education. And that's on top of other significant cuts the Liberals have made, to equity, quality, research support and collaboration.

The Liberals hounded the car makers out of this country, attacking the industry that has always been the great repository of advanced manufacturing skills and capabilities in Australia and presiding over the loss of one of our most advanced industrial capabilities.

The shutdown of motor vehicle production at the end of 2017 was not inevitable – it was the result of a political decision. The Liberals' selective ideological resistance to industry assistance caused them to disregard the strategic importance of automotive manufacturing for the wider economy and local communities.

They sought to abandon Australia's naval shipbuilding industry and only reversed their stance to try and avert an electoral backlash – too late to save the Williamstown shipyard in Victoria.

They have been dragged kicking and screaming to offer desultory support to the steel industry.

At the same time, hundreds of top researchers have fled off-shore, some due to job losses and others due to the Liberal Government's outright hostility.

Major science and research partner organisations around the world have responded with alarm at our wilful abdication of our international obligations. Talented young researchers have elected not to pursue careers in Australia due to adverse conditions and an uncertain future under the Liberals.

These are the legacies of the Abbott-Turnbull Government.

Australia cannot afford another three years of Liberal attacks and cuts that imperil our nation's future.

## FUNDING CUTS

Malcolm Turnbull talks a big game on innovation, but his record tells a different story. He supported every measure in Tony Abbott and Joe Hockey's disastrous 2014 and 2015 Budgets, which cut investment in science, research and innovation by more than \$3 billion.

His over-hyped National Science and Innovation Agenda restored only one third of this funding.

Given the chance, he plans to take a further \$3.75 billion out of the university system, and make students pick up the slack.

Under the Abbott-Turnbull Government, Australia's key innovation programs have been decimated. The cuts that have already been imposed include:

- \$115 million from the Commonwealth Scientific and Industrial Research Organisation.
- \$84 million from National ICT Australia.
- \$350 million from the Innovation Investment Fund (abolished).
- \$260 million from Commercialisation Australia (abolished).
- \$75 million from the Australian Research Council.
- \$28 million from the Australian Nuclear Science and Technology Organisation.
- \$107 million from Cooperative Research Centres.
- \$174 million from the Research Training Scheme.
- \$300 million from Sustainable Research Excellence for universities.
- \$16 million from Geoscience Australia.
- \$20 million from the Bureau of Meteorology.
- \$120 million from Defence Science and Technology.
- \$298 million from Industry Innovation Precincts.
- \$353 million from higher education equity programs.
- \$31 million from the Tertiary Education Quality and Standards Agency.
- \$50 million from the Office of Learning and Teaching (abolished).
- \$28 million committed but unutilised for its replacement university-based institute.
- \$1 billion from the R&D Tax Incentive.
- \$25 million from the Enterprise Solutions program (abolished).
- \$82 million from Australian Industry Participation Plans.
- \$25 million from the Textile, Clothing and Footwear co-investment programs.
- \$152 million from Enterprise Connect (abolished).