THE INNOVATION ECONOMY

WA Labor | Plan for Jobs
A McGowan Labor Government is committed to ensuring that there is a focus on innovation as a future driver of our economy.

As technology reshapes current industries, work practices and professions, it is estimated that within the next 20 years, more than 40 per cent of Australian jobs may disappear.¹

Western Australia is the only State to not have an Innovation and Information and Communications Technology (ICT) Strategy or apparent ministerial responsibility for IT.

A Minister for Innovation and Information and Communications Technology will provide the coordination urgently needed in this sector with the support of a dedicated Innovation Office. This will facilitate the creation of more jobs and harness the power of ICT to create a more efficient regulatory system.

• **A McGowan Labor Government will help stimulate jobs and growth in the high tech sector by appointing the State’s first Minister for Innovation and Information and Communications Technology (ICT) and establishing an Innovation and ICT Office in WA.**

An Innovation and ICT Office will work with industry to encourage collaboration to drive innovation and create new industries. It will also hone in on how technology can reduce the burden of regulation and make the business of government more efficient.

Science, Technology, Engineering and Mathematics (STEM) disciplines invariably involve ICT and computing skills. ICT provides access to a wide variety of internet resources and tools that are integral for STEM learning.

• **A McGowan Labor Government will establish a strong ICT vision and policy for Western Australia and will publish a State STEM strategy to support innovation including generating new job opportunities.**

A legacy of the mining boom is the pool of highly skilled and educated STEM workers in areas such as engineering, mining software and environmental science. The challenge is to capitalise on these natural advantages to broaden our economy and stimulate investment in innovative new enterprises.

There is also potential to develop revenue streams for the State Government through the greater commercialisation of intellectual property, as well as collaborative partnerships with industry.

• **A McGowan Labor Government will explore and develop revenue streams for government through the commercialisation of State Government intellectual property.**

It is important that any investment in STEM is targeted to meet key strategic goals, aligned with a whole-of-government strategy. This will present the best methods of encouraging collaboration between the private and public sector, industry and research institutions to commercialise research.

New Industries Fund to Drive Startups

A McGowan Labor Government will invest $14.5 million in a New Industries Fund to support and accelerate new and emerging business in the Startup and gaming sector and diversify the economy. This investment will generate jobs in a diverse range of industries and provide investment opportunities for these new companies.

• **A McGowan Labor Government will create a $14.5 million New Industries Fund providing grants to support and accelerate new and emerging businesses in the Startup and gaming sector, creating jobs in this burgeoning hi-tech industry.**

We must also support innovation in regional WA which has the effect of boosting the local economy and creating further opportunities for job growth. The New Industries Fund will include a ‘Regional Startups’ stream.

In the regions, the Regional Development Commissions will identify locations to develop business incubators to foster and accelerate regional based Startup and gaming enterprises. WA Labor’s Plan for Jobs will ensure there is a focus on innovation as a future driver of our regional economies.

The resources sector has been a major driver of new technologies and research expertise in the regions for many years. As this sector transitions to an operational phase, it is important that we retain the technology and specialist skills to drive new industries in regional WA.

• **A McGowan Labor Government will invest $4.5 million from the New Industries Fund in regional WA.**

The Startup sector in Western Australia has evolved significantly over the past ten years. As the dominance of the resource sector wanes, innovators are making good use of the available space, skills and capital to participate in the WA Startup and gaming community.

However, while WA’s digital start-ups have grown by 235 per cent in the last two years, currently two-thirds of the Australian’s Startup community operate out of Sydney.¹ Similarly 40 per cent of the games produced in Australia come from Victoria where state funding support is provided for game development.

The failure of the Liberal Government to provide support and leadership means that WA under performs in the Startup and gaming sector compared to other states. We need to do more to attract and foster these enterprises in Western Australia as future sources of economic diversity and job creation.

Funding support though the New Industries Fund will focus on early career and business development support and foster an environment where private investment does the heavy lifting for commercial production and market entry.

¹PwC; The Startup Economy; April 2013; p5
Connecting Startups and Investors

A McGowan Labor Government is committed to ensuring that government assists the WA Startup and gaming sector to attract overseas investment.

Startups provide a central point for investors, mentors and academics looking to capitalise on the next big high-tech opportunity.

“A report by surveyor StartUp Muster and backed by Google found nearly 20 per cent of Startup companies in Australia are planning to relocate overseas while around a quarter plan to undertake capital-raising overseas.”¹

Whilst many Australian Startups head to the US or UK to pursue investment opportunities, the potential of Asia should not be ignored. A role for government is to develop and foster formal networks with our regional neighbours, to enable access to wider investment markets.

- A McGowan Labor Government will utilise the Asian Business Strategy and existing trade relationships with the USA, UK and Europe to attract foreign investment to Startup and gaming businesses in Western Australia.

An initiative to develop formal networks with our regional neighbours, would involve Perth hosting an annual Association of the Southeast Asian Nations (ASEAN) Dialogue, initially at the Asia Research Centre at Murdoch University. The dialogue would run concurrently with a trade and investment show to maximise the exposure of the Startup and gaming sector.

Our commitment to a business strategy will capture important trade and investment opportunities for the Startup and gaming sector to create Western Australian jobs and business opportunities.

Gaming

The global games production industry is worth approximately $100 billion USD and is growing annually. Western Australia has a small but talented games industry. However, 40 per cent of the games produced in Australia come from Victoria where State funding support is provided for game development.²

Like the Startup sector, WA Labor’s Plan for Jobs will provide funding support through the New Industries Fund to focus on early career and business development support and foster an environment where private investment does the heavy lifting for commercial production and market entry.

¹ ABC Online; One in five Australian start-ups looking to go overseas, report finds; 9 December 2015

² Director of Games and Interactive Program; FTI WA; Submission to Senate Standing Committees on Environment and Communications, 11 Dec 2015
Skill the Local Workforce

A McGowan Labor Government is committed to having a skill ready workforce. This is critical to our capacity to capitalise on the emerging innovation economy to create local jobs.

Digital proficiency will be a foundation skill, as important as reading and numeracy and will increasingly be the determinant of employment prospects and opportunity. A STEM advisory panel will be appointed to oversee this.

The Australian Computer Society (ACS) has raised concerns that the IT Industry is opting to fill job vacancies with overseas workers through the Federal Government’s 457 Visa scheme; an initiative that sees overseas workers sponsored by Australian industry to work temporarily in Australia.

Further to this, the ACS claims that as “the ICT sector is the third largest user of 457 Visa’s by industry, it is likely that by occupation, ICT is the largest group in the 457 program.”

The Australian Bureau of Statistics released a report which demonstrated that STEM skills jobs such as scientists, ICT professionals and engineers grew 1.5 times the rate of other jobs in recent years. According to PricewaterhouseCoopers, Australia stands to gain a $57.4 billion increase in GDP by shifting one per cent of the workforce into STEM-focused jobs.

To support this shift, WA needs a collaborative approach to addressing the training needs of the future workforce. This approach needs to include ways of addressing both the current gap in the ICT and STEM skilled workforce and ensure there is a job ready workforce for future job opportunities.

The WA Technology and Industry Advisory Council has done work in the area of STEM education in schools. A McGowan Labor Government will work with the Council to ensure the objectives under the Industry and Technology Development Act 1998 (WA) are better realised to ensure there is a job ready local workforce in WA.

- A McGowan Labor Government will appoint a STEM advisory panel incorporating industry, researchers and educators, chaired by the Chief Scientist, to ensure that there is a job ready local workforce to capitalise on the creation of job opportunities.

One of the major challenges for the ICT sector is to improve the attraction and retention of young Western Australians in ICT as a career of choice. Only then will we have the specialist skills required to deliver and manage the technological change that is occurring.

This will include working with Western Australian teachers and academics so they can deliver ICT courses in a way that will inspire and engage young Australians.

“The workers of the future need to have deep computer literacy.”

Nathan Taylor CEDA Chief Economist; The industrial revolution’s next wave.

Business and industry have advocated strongly for greater emphasis on STEM on the basis of their expected future demand for these skills.
Nations which are strong in STEM have strategic STEM policy frameworks, with some using specially designed institutes and agencies to drive their agenda. Yet Western Australia doesn’t have a comprehensive STEM strategy.

• A McGowan Labor Government STEM strategy will focus on improving STEM education and identify ways of promoting the importance of the key STEM skills of problem solving, critical thinking and innovation to employers, educators, parents and students.

The STEM Strategy will initially map Western Australia’s STEM workforce, highlighting strengths and gaps in skills and expertise. It will then identify STEM growth industries with a vision to grow the local workforce.

A commitment to STEM will be a key focus of a McGowan Labor Government. We will identify ways of promoting the importance of the key STEM skills of problem solving, critical thinking and innovation to employers, educators, parents and students.

Coding

Coding is what makes it possible for us to create websites, apps and computer software.

Science and business leaders have long been calling for coding to be taught formally in schools. The Federal Government has recently included coding for primary schools in the new national curriculum to start in 2016.

A McGowan Labor Government acknowledges the importance of this step towards teaching our children the language of the future. For the student, learning coding allows a better appreciation of what can be built with technology. It also teaches students how to break down problems into solutions and carries with it all the benefits of learning a second language.

• A McGowan Labor Government recognises that coding will be the literacy of the 21st Century and will become part of the WA school curriculum.

A McGowan Labor Government will engage with the Federal Government on their plan to introduce coding activities into the WA curriculum and will engage with teachers across the State and establish practical funding to support the integration of coding into their teaching.

• A McGowan Labor Government will engage with the Federal Government and provide practical funding to implement coding activities into the WA school curriculum.

As Western Australia moves forward, digital proficiency will be a foundation skill, as important as reading and numeracy. In a global economy, we need to position kids today, to win the jobs of the future.

Former Australian Chief Scientist Ian Chubb said;

“If the digital economy is an arena, then the skills you need to play include computer programming and coding. Informatics gives us these skills and this event highlights the global nature and ferocity of the competition.”


2 Gareth Hutchens; SMH; Chief Scientist Ian Chubb says Abbott Government needs to Adopt his Policy Recommendations, 26 March 2015
Back to Primary Schools for Science

A McGowan Labor Government will invest $17 million in schools to roll out science labs and equipment in up to 200 public primary schools. This investment in science, technology and innovation is part of our vision to create a broad economy which generates jobs in a diverse range of industries.

Science labs engage students and if we are serious about diversifying our economy then we must start at a school level to prepare students for jobs beyond the resources industry. WA Labor’s Plan for Jobs is focused on science at a primary school level and that focus needs a science lab with appropriate resources and equipment.

- A McGowan Labor Government will invest $17 million to roll out science programs in up to 200 public primary schools including funding to convert existing classrooms to science laboratories and upfront grants for resources to make science a more diverse and engaging experience for students.

Most science in primary schools is not taught in a purpose built science lab, but in general classrooms or in multipurpose wet areas. Therefore the experience of science is narrower, less diverse and less engaging for the students.

The activity of observation and experiment is difficult to teach in the absence of a lab where resources and equipment are purpose built and permanent. In secondary school, science is taught in purpose designed labs where there are multiple work stations with built-in equipment.

A McGowan Labor Government will invite expression of interest from all public primary schools to apply for the program. In the initial phase, up to 200 schools will be upgraded to ensure that they have appropriate facilities.

- An allocation of $12 million will be made available to convert classrooms into science labs.
- A further $5 million will be provided in grants of $25,000 to enable schools to buy resources to equip those labs.

The teaching of science should start as early as possible in a child’s education however each school will have the flexibility to manage how they integrate the new science lab resources into their school curriculum. We will work with teachers and Scitech on appropriate professional development for teachers to focus on teaching science in schools. A focus on science will support the diversification of the economy and is an investment in the jobs of the future.
Science Fellowships

A McGowan Labor Government will introduce Science Industry Fellowships. Science Industry Fellowships have been successful in building links between our university sector and industry, expanding the science network in Western Australia.

The Science Industry Fellowships will help WA benefit from the opportunities in our global regional economic zone and continue to take WA forward in the knowledge economy.

- **A McGowan Labor Government will sponsor Science Industry Fellowships.**

Science Industry Fellowships will build the relationship between WA companies and our universities. This model is based on similar programs run by the Royal Society in the UK. It will encourage greater research and development in Western Australian companies.

Robotics

In this rapidly changing technological environment, society has grown with and embraced the development of technology and automation in our modern lives.

New technologies have always driven new job requirements and skills. Western Australia is in a prime position to raise productivity, making industries more competitive globally and increase opportunities to train and employ more workers. This can be achieved through the utilisation of information processing, automation, robotics and niche sectors like gaming and app development.

- **A McGowan Labor Government will collaborate with our State’s educators and industry to identify future job opportunities, opened up by the rapid developments in the computerisation and automation sector.**
Innovation Hubs: Knowledge, Jobs, Communities

Innovation Hubs are a vehicle to grow jobs and educational opportunities, unlock land development opportunities, foster innovation and create vibrant communities.

Opportunities exist to use our existing infrastructure, not only to diversify the economy, but to grow jobs and skills for the future and develop modern communities where there is an exchange of knowledge and innovation.

Innovation Hubs are not a new concept, but their success is being driven by the vanguard of this trend in cities such as Barcelona, Berlin, London, Medellin, Montreal, Seoul, Stockholm and Toronto.

Innovation Hubs can be defined as geographic areas where leading anchor institutions and companies come together with Startups, business incubators and accelerators. They are physically compact, transit friendly, accessible by public transport, technically wired and offer housing, office, education and retail.¹

Suitable sites with available space in Western Australia have been identified and in the case of ‘Greater Curtin’ University, are already well developed.

One of the biggest challenges we face in Western Australia is to grow and diversify the economy beyond the resources sector to provide jobs, housing, education and utilities for a population which is expected to grow to 3.27 million by 2026.

Creating the City of Innovation: A Vision for a Greater Curtin University

“Greater Curtin is an urban environment where diverse groups from the world over will come to work, study and interact with new ideas.

We welcome the incidental networks created by enterprise and business connecting with those who form the urban fabric of the city.

Our proximity to Asia means that we will interact with countless individuals, researchers and companies that can add a wealth of knowledge investment and commercial viability to the City.”

Curtin University, Creating the City of Innovation: A Vision for a Greater Curtin, 2013, p4
Support for Innovation Hubs

Innovation Hubs have the ability to grow jobs in specific areas and industries that are subject to disruptive forces, for example digital disruption.

There are opportunities to create Innovation Hubs at sites around Perth and a McGowan Labor Government will engage with businesses and institutions to explore these opportunities further.

- **A McGowan Labor Government will foster structured interactions between government, universities, business, industry and the community to drive the development of Innovation Hubs creating new industries and job opportunities.**

It is well established that collaborative facilities, shared spaces and shared use of technologies are a more cost effective way to operate a business. For example, officially known as home to the Innovation Centre of WA, the Technology Park in Bentley is also home to many leading local, national and international science and technology companies based there.¹

The Park encourages active collaboration between the private and public sector. Curtin University of Technology has collaborated with CSIRO to form the Australian Resources Research Centre. It is also home to supercomputing infrastructure, better known as the Pawsey Computer.

The Bentley campus has significant land holdings for urban infill and attracting technology focused companies and research organisations.

- **A McGowan Labor Government will provide the planning laws that allow for higher density developments within Innovation Hubs.**

Located in the heart of the Joondalup CBD, Edith Cowan University is an international leader in cyber security research and host to the annual Security Congress. The West Coast Institute of Training is co-located at the same campus. The WA Police Academy is the third element of this learning precinct and shares facilities with both institutions. This area also has a greater capacity for urban infill.

Yet another Innovation Hub development could occur with the collaboration of Fiona Stanley Hospital and Murdoch University focussing on medical research and development opportunities.

Innovation Hubs can become environmentally sustainable developments when they have an integration of energy efficient principles for water, energy and accessibility. They allow universities and other anchor institutions to unlock the value of their land to reinvest in research and technology.

- **A McGowan Labor Government will review relevant legislation to reform restrictive governance over land within Innovation Hubs to allow for commercial development.**

We know that all over the world, entrepreneurs are starting their businesses in collaborative spaces, close to state of the art facilities, where they can mingle with like-minded people. ‘Innovation Hubs foster innovation across industries by concentrating people with different knowledge and expertise in dense urbanised areas.’²

By utilising our existing infrastructure where leading anchor institutions and companies cluster and leverage our existing assets in teaching, research, technology and medicine, we can further diversify our economy and grow the jobs of the future.


² Bruce Katz and Julie Wagner; The Rise of the Innovation Districts: A New Geography of Innovation in America; p4
Renewables Industry

WA Labor recognises the importance of developing and investing in the renewable energy sector as the energy sector of the future. We understand the importance of positioning ourselves in the renewables space to take advantage of future innovation and opportunities to invest in Western Australian jobs for the future and address climate change.

In 2013-14 Western Australia recorded the lowest level of direct full time equivalents (FTE) employed in renewable energy activities of any state in Australia. This equates to 820 FTE employees or seven per cent of total employment in renewable energy activities in Australia.¹

Western Australia’s performance is in contrast with that of New South Wales, which recorded the highest level of annual direct FTE employment in renewable energy activities of any state or territory in Australia, with 2,950 FTE employees or 22 per cent of total employment in renewable energy activities in Australia. Victoria recorded 2,810 or 22 per cent of total employment in renewable energy activities, Queensland 2,520 (20 percent), South Australia 1,330 (11 per cent), Tasmania 1,450 (12 per cent).²

Between 2011-12 and 2013-14 Western Australia experienced a fall of 920 employees (from 1,740 to 820) which is a 53 per cent drop in annual direct FTE employment in renewable energy activities.³

The renewable energy sector is more labour intensive than that of fossil fuel technologies. This means that on average, more jobs are created for each unit of electricity generated from renewable sources than from fossil fuels.⁴

According to the International Renewable Energy Agency (IRENA), in 2014 the global renewable energy industry employed 7.7 million people, either directly or in service related industries. That figure does not include the hydro-energy industry, which directly employs a further 1.5 million people. IRENA expects job growth to more than double by 2030 to around 16 million jobs.⁵

- A McGowan Labor Government recognises the unique position of Western Australia with respect to renewable technologies in light of our coastal location, wide open spaces, sunshine, developed manufacturing and processing facilities and will promote local and overseas investment into renewable technology manufacturing.

²Ibid
³Ibid
In contrast to the Liberal Government, WA Labor’s stance on renewable energy will allow for innovation, technology, jobs and economic growth in the renewable energy sector to occur.

Under the Federal Government’s Renewable Energy Target (RET), every energy retailer has an obligation proportionate to the total amount of renewable energy produced under the RET scheme. They are required to either produce that renewable energy by building large scale renewable energy generation facilities – or buy the relevant obligation of renewable energy certificates. This can be done in two ways: they can buy the energy and the certificate or just the certificate and somebody else buys the energy.1

The Liberal Government has stated that it will not invest in the development of renewable energy generation facilities because the market already has an over-supply of generation capacity.

At an Energy WA Conference in October 2013, the WA Minister for Energy said “…to build additional capacity on top simply to satisfy the RET … is a sub-optimal approach and expensive for taxpayers. Western Australia can satisfy its RET requirement by purchasing certificates from projects on the Eastern States.”2

As the RET applies to large-scale renewable energy facilities, the Government’s position means Western Australia will be obliged to buy renewable energy certificates from large scale renewable generation facilities in the eastern states to meet its statutory obligations. This attitude misses the opportunity to create job opportunities in WA and address elements of climate change.

• **A McGowan Labor Government will:**

  **Encourage research intensive programs into renewable energy and battery technology at our universities which could then be marketed to attract international investment, international students and research and development opportunities.**

  **Work with technology companies, universities, TAFE and electricity utilities in a precinct to provide opportunities for emerging battery technologies.**

  **Encourage the development of off-the-grid solutions and technologies like smart-meter trials and battery storage trials for greenfield developments around the State.**

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1 For full discussion see Hansard ‘Energy Portfolio – Minister’s Performance, Motion’ 13 May 2015, Legislative Assembly.