

Climate Change Action Plan

Policy Paper

CLIMATE CHANGE ACTION PLAN

Labor accepts the overwhelming scientific consensus that human activity since the industrial revolution has increased average global temperatures, leading to climate change. Labor endorses the commitment by the world's nations to keep global warming well below two degrees Celsius.

That is why Labor has a clear plan to combat climate change by getting Australia's pollution levels back under control and ensuring that Australian business and workers are in the best position possible to benefit from the huge investment and job opportunities that come from a renewable energy and clean technology future.

Unlike previous approaches, Labor has taken a sector based approach to developing this suite of policies. This provides an overarching framework to drive our progress towards our long term international obligations, while ensuring individual policies are appropriately calibrated and responsive to the economic circumstances of the key sectors of our economy. This approach has been developed to minimise impacts on households and industry.

Importantly this policy is underpinned by Labor's fundamental commitment to fairness, ensuring that Australians are supported through this transition and no one is left behind. That's why we have taken an approach that allows us to appropriately calibrate and respond to economic circumstances, while also meeting long term environmental goals.

Our Climate Change Action Plan provides a pathway for an orderly transition to a low pollution economy through six key elements:

1. **Make Australia a Leading Renewable Energy Economy** by ensuring that 50% of the nation's electricity is sourced from renewable energy by 2030, providing the Clean Energy Finance Corporation with more certainty and more flexibility with less red tape and more technology options, and developing new community power projects.
2. **Cleaner Power Generation** by ensuring that the modernisation and diversification in Australia's electricity generation from old heavy polluting coal fired power stations to modern clean energy is an orderly transition, with meaningful support for workers and communities.
3. **Build Jobs and Industry** by maximising the job opportunities from clean energy and clean technology, while also securing the future of critical Australian industries through a Strategic Industries Task Force. This will be supported by a Strategic Industries Reserve Fund of \$300m to support the transition of key industries to 2020.
4. **Cut Pollution** through an Emissions Trading Scheme with access to international offsets, placing a legal cap on the emissions of large polluters through a cap and offsets scheme, while supporting industry by ensuring access to international carbon offsets.
5. **Capture Carbon on the Land** by reinvigorating the Carbon Farming Initiative to encourage carbon storage in agriculture, and taking decisive action to deal with broad scale land clearing.
6. **Increased Energy Efficiency** by doubling Australia's national energy productivity by 2030 and implementing new emissions standards for motor vehicles to cut pollution on our roads.

Labor will also abolish the wasteful, failed Direct Action policies of the Abbott/Turnbull Governments.

WHY IS LABOR DOING THIS

Climate change will result in longer droughts, more damaging floods, more frequent bushfires and severe storms. Extreme temperature events used to cover 0.1% of the Earth; now they cover 10%.

These flashpoints – which are becoming more common – also need to be seen against the backdrop of the creeping and incremental consequences:

- a massive decline in agricultural production
- irretrievable damage to the Great Barrier Reef
- widespread shortages of urban water supply
- spikes in global food prices
- increases in heat-related deaths and airborne disease
- heightened instability in the coastal megacities of our region.

These represent a real and significant cost to the Australian economy and our community.

For instance, a 1.1 metre rise in the sea level would see \$226 billion worth of commercial, industrial, road, rail and residential assets around Australia's coasts damaged by flooding and erosion.¹

From 2020 onwards, the predicted increase in drought frequency is estimated to cost Australia \$7.3 billion annually – reducing GDP by 1% a year.²

Most nations are taking actions today to limit emissions and modernise their economies through clean energy and decoupling economic growth from carbon pollution.³ The World Resources Institute has concluded that since the start of this century, 21 countries including the US, UK, France and Germany have decoupled their economic growth from carbon emissions.⁴ Resisting this shift or delaying the transition will only saddle future generations with greater economic costs.

It is profoundly in Australia's national economic interest to ensure there is action on climate change. The CSIRO has said that the current warming of over one degree Celsius is already costing the nation. We are seeing significant challenges to the Great Barrier Reef affecting tourism, increased annual rainfall variability and dangerous water shortages. On top of that, there are higher fire risks through changes in temperature, more heatwaves impacting our health, dangerous water shortages and large areas of agricultural land taken out of production.

We risk missing out on the global mega-trend towards clean energy technologies and renewable energy. In 2014, clean energy investment grew in China (32%), Japan (12%), the US (8%), Germany (3%) and the UK (3%). At the same time, investment in large-scale renewables dropped by 88% in Australia.⁵ In the last two years more than two million renewable energy jobs were added to the global economy; in the same period Australia lost 2,600 jobs in that industry.⁶

¹ The Climate Council (2014), [*Counting the costs: climate change and coastal flooding*](#)

² The Climate Council (2015), [*Climate Change 2015: Growing Risks, Critical Choices*](#).

³ International Energy Agency (2016) [*Decoupling of global emissions and economic growth confirmed*](#)

⁴ World Resources Institute (2016), [*The Roads to Decoupling*](#)

⁵ Bloomberg New Energy Finance 2015

⁶ IRENA; Australian Bureau of Statistics

Labor's Climate Change Action Plan will benefit all Australians, because it will foster and encourage a growing, sustainable economy that will create and secure the jobs of the future while also improving our health, wellbeing and the environment in which we live.

Importantly, this policy is underpinned by Labor's fundamental commitment to fairness and ensuring that Australians are supported through this transition, with no one is left behind.

Emissions Reduction Target

Labor accepts the overwhelming scientific consensus that human activity since the industrial revolution has increased pollution which has in turn contributed to increased average global temperatures, leading to climate change. To arrest the rise in average global temperatures and dangerous climate change, we need to act to reduce pollution to ensure that over time all emissions generated are offset, sequestered or removed.

Labor endorses the commitment by 195 nations as part of the Paris Agreement to keep global warming well below two degrees Celsius above pre-industrial levels.

To ensure that Australia does its fair share along with other nations to achieve this goal, Labor has committed to the following:

- Net Zero Pollution by 2050 consistent with the international agreement to achieve a balance between emissions generated and those offset, sequestered or removed in the second half of this century
- 45% emissions reduction on 2005 levels by 2030, consistent with the advice of the Climate Change Authority
- 2025 emissions reduction target within one year of being elected
- Five yearly reviews – which will ensure that our policy goals are continually updated to be consistent with the latest science.

That is why Labor will commit \$17.4 million over the forward estimates to reverse the Government's abolition of the Climate Change Authority and ensure that it continues to be appropriately resourced to achieve its role.

The world's leading scientists have repeatedly warned that global warming of two degrees Celsius or more above pre-industrial levels will result in irreversible and catastrophic consequences.

It is estimated that a two-degree spike in the Earth's temperature would submerge land currently occupied by 280 million people. An estimated 90,000 Sydneysiders live in areas that would eventually become ocean in this scenario, while the rise along the densely populated banks of the Brisbane River would see 92,000 people's homes go under. In Adelaide, the number of people whose homes would be underwater is 19,000, while 14,000 are living in at-risk areas in both Perth and Melbourne. Under a two-degree warming scenario, Brisbane's international airport and parts of Sydney Airport would also be inundated by seawater.

Australia has accepted the goal of limiting global warming by well below two degrees in its commitments under the United Nations Framework Convention on Climate Change. At the Paris Conference in December 2015 and in April 2016 at the UN in New York, the Australian Government joined the rest of the world in strengthening that commitment to ensure that warming was kept “well below” two degrees. That

commitment reflects the overwhelming advice of scientists that warming beyond that threshold will be particularly damaging to ecosystems and economies, and impose a huge burden on future generations.

In November 2015 Labor announced the beginning of a consultation process to assess the appropriateness of the Climate Change Authority's recommendation of a 45% reduction in emissions by 2030 (on 2005 levels). Consultations were held with industry, employers, unions and the community over a three-month period and included 46 forums in 14 cities and towns.

Following these consultations, Labor confirms that we are committed to achieving a **45% emission reduction target by 2030 (on 2005 levels)**. In committing to this medium-term target to reduce pollution, Labor has been guided by the expert advice about the two degree commitment from the Climate Change Authority, targets set by other nations, and Australia's economic and demographic circumstances.

A target of 26 to 28% by 2030 (on 2005 levels) – as proposed by the Abbott/Turnbull Government – would see Australia fall well short of the commitments made by the United States, United Kingdom, Germany, Canada and other European nations.⁷

A target of 45% by 2030 also ensures that the burden of keeping the rise in temperature well below two degrees Celsius does not fall on the next generation of Australians and that Australia still has room in its carbon budget beyond 2030.

Economic impact of 45%

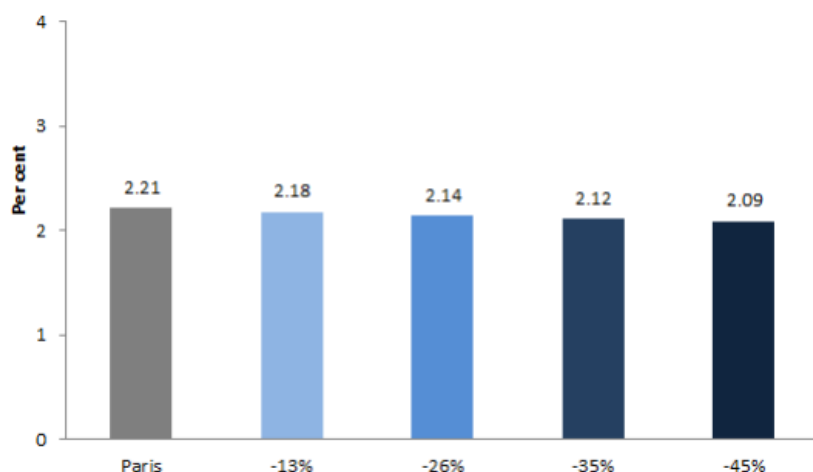
Economic modelling of different targets for climate change policies is inherently uncertain, and necessarily makes assumptions around a series of inputs without reference to the dynamic context in which they exist and their impact over time. For instance, it is important not to isolate a single sector or policy area without consideration of other policy fronts – such as significant and targeted investments in human capital and physical infrastructure. Accordingly, the way in which economic modelling has been framed and whether underlying inputs for factors such as the accumulating cost of inaction from increasing climate change events are incorporated affects the outcomes and assessments of economic impacts. The importance of understanding the economic impact of different targets was a central question in Labor's consultation process.

There is no question that a global transition from fossil fuels (especially coal) is already having an impact on many Australian communities. Ensuring that the transition to a clean energy future is just and fair for workers and communities is a central part of the Paris Agreement and is central to Labor's Action Plan.

Former Prime Minister Tony Abbott commissioned the former Reserve Board Member Warwick McKibbin to model the overall economic impact of different climate change targets. Under all scenarios Professor McKibbin found that the Australian economy will grow strongly over the longer term.

Professor McKibbin's modelling found that a range of climate change targets would have a minor impact on economic growth, concluding that the Government's 26 to 28% target would have an impact of around 0.07% of GDP growth against a baseline scenario whereas the impact of Labor's 45% target would be a modest impact of 0.12% of GDP growth against the same baseline scenario.

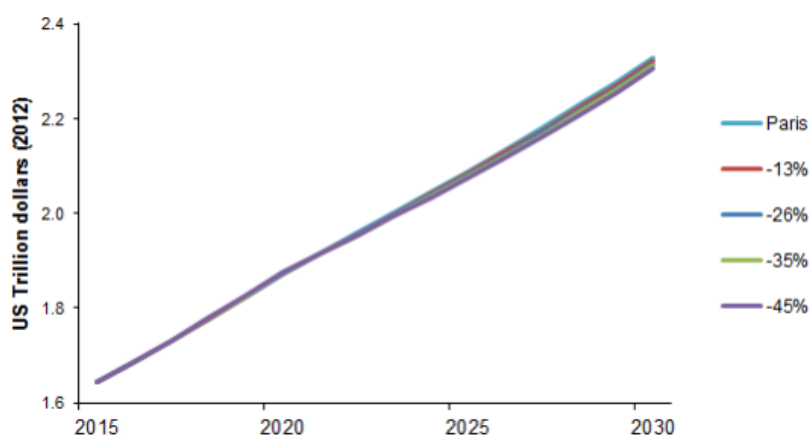
⁷ The Climate Institute, Research Brief, September 2015,



Source: McKibbin Modelling

Over the long term, the impact is minor, with growth continuing strongly to 2030.

Absolute level (2012 US trillion dollars)



Source: McKibbin Modelling

Furthermore, Professor McKibbin noted that the higher target – Labor’s – would have a substantial positive impact on investments as the economy moved more quickly to clean energy and technology.

Putting in place long term policies that ensure that Australia produces *net* zero emissions by 2050 includes setting a pathway to provide certainty.

Package financial Implications

2015-16	2016-17	2017-18	2018-19	Total ⁸
0.0	0.0	-152.9	-203.0	-355.9

This package has been costed by the independent Parliamentary Budget Office and has a budget impact of \$355.9 million over the forward estimates, and \$853 million over the decade.

⁸ Totals may not sum due to rounding

This funding will be offset, over the forward estimates and the medium-term, by existing improvements to the Budget proposed by Labor including making multinational companies pay their fair share of tax reforms to the taxation of multinational entities, reducing superannuation tax concessions for millionaires, increasing the changes to tobacco excise, abolishing the Emissions Reduction Fund, and not proceeding with the Liberals' new Baby Bonus.

Make Australia a Leading Renewable Energy Economy

Climate change is driving the most profound restructuring of the world economy this century – the transition from fossil fuel based energy to renewable energy. This is not a theoretical issue. It is happening now and it is accelerating.

A Shorten Labor Government understands the fundamental importance of this transition and the massive opportunities that come with it. A strong renewable energy sector will be at the centre of Labor's response to the challenges of climate change. With the right policies the renewable energy sector also provides immense opportunities: it will drive job creation, boost manufacturing investment and put downward pressure on power prices for families and small businesses.

A Shorten Labor Government will return Australia to being **a leading renewable energy economy** by:

- ensuring that 50% of the nation's electricity is sourced from renewable energy by 2030
- providing greater certainty and flexibility for the Clean Energy Finance Corporation, and delivering more funding for the Australian Renewable Energy Agency (ARENA) and community renewables projects
- establishing a Community Power Network
- seeing the Commonwealth lead by example as a direct purchaser of renewable energy.

The Liberal Government has done everything in its power to try and destroy Australia's share in one of the world's fastest growing industries, with devastating consequences for our country. Australia needs a clear plan for Australia to drive the renewable energy transition – it is an area we should be leading, not trailing the world.

Leveraging our competitive advantages

Australia has a competitive advantage in renewable energy: we have some of the best natural resources in the world and our research and development work in renewable energy technology is world leading. With the increased use of automation, robotics and technology, harnessing our advantage in renewable energy with lower, stable energy prices will contribute to significant improvements in Australia's competitiveness.

Our continent is blessed with some of the greatest renewable energy assets in the world. We have the highest average solar radiation per square metre of any continent in the world. We are also one of the windiest places on earth.

"Australia is lagging behind the world's major economies when it comes to renewable energy generation despite having enough renewable energy resources to power the country 500 times over." – **Tim Flannery and Andrew Stock, Climate Council**

It should also not be forgotten that the base case isn't the status quo. The economic risks of continuing a heavy reliance on fossil fuels – both in terms of our own energy generation and also our exports – are only increasing. For instance, there has been a marked slowdown in our coal exports as other countries shift to

cleaner inputs. Of course, coal exports will remain important for processes like steel-making and Australia will continue to have a competitive advantage in coal exports. But we need to expose our economy to the upside risks of this change in the global market.

We also have some of the best renewable energy researchers and research facilities in the world – having achieved the highest efficiency ever reported for converting sunlight into electricity. Australians developed the first photovoltaic system to convert sunlight to electricity with over 20% efficiency in 1989 and we hold the world record for the fastest solar powered electric vehicle over a distance of 500 kilometres.

What is needed is for the Government to provide clear signals for investment in Australia to connect our brightest thinkers with the funding need to capitalise on our natural resources.

Without such signals Australia will fall further behind the rest of the world, our brightest minds will head overseas, and ultimately we'll buy our renewable technology not from Australia but from another country.

Labor's renewable energy plans are ambitious but achievable.

Labor's target for 50% renewable energy is likely to require 1500 to 2000 MW of large-scale renewable energy generation to be built each year in the 2020s. By way of comparison, Australia built 1000MW of wind power in 2013 but for the past two years, China has added about 50,000MW of renewable energy a year. The cost of renewable technology continues to come down as these technologies are constantly improved, and efficiencies are realised.

Labor's policy will create many thousands of jobs and attract billions of dollars in investment. Labor will work with industry and other stakeholders to determine the best mechanism to achieve 50% renewables – taking account of recent developments overseas.

Legislation reflecting this decision will be introduced to Parliament in late 2017.

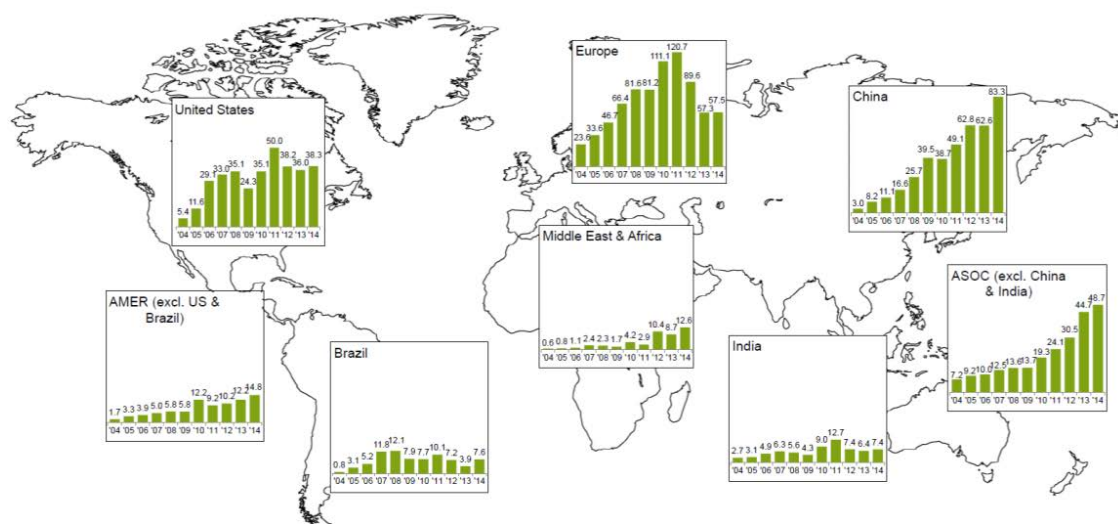
Getting our fair share of investment

With \$2.5 trillion to be invested by 2030 in renewables in the Asia Pacific region, what we need is a Government that is focussed on capturing the jobs and investments from this opportunity.

In 2015, new renewable energy investment outstripped combined investment in coal, gas, nuclear and hydro power for the first time around the world. However, in Australia there was basically no new renewables investment.

Every major economy is transitioning to renewable energy. Four of the world's biggest economies have committed to add more renewable energy in the next 10 years than Australia's entire electricity supply.

Global Renewable Investment Trends



Source: Bloomberg New Energy Finance, UNEP

We want to see Australia return to being a front-runner in renewable energy investment. Labor's policy settings will see lower power prices, carbon pollution reductions and thousands of jobs across Australia. With 20,000 Australians currently employed in the renewable energy sector, Labor has identified this as a growth industry.

Most other major countries have ambitious renewable energy policies and increased commitments – and they are meeting them. It is only under a Labor Government that Australia will have the strong leadership needed to set ambitious targets and achieve them.

Reducing carbon pollution

Transitioning electricity generation to renewable energy is critical to reducing carbon pollution. The electricity sector accounts for 33% of Australia's greenhouse gas emissions – the single biggest source of emissions.

What will Labor do?

50% renewables by 2030

Labor is committed to 50% of the nation's electricity being sourced from renewable energy by 2030.

Labor has set a strong signal for renewables to 2030 to provide certainty for the industry beyond 2020, and to drive the transition in our energy sector. The energy sector is capital intensive with investment decisions needing a long term target to provide certainty. The existing Large Scale Renewable Energy Target and Small Scale Renewable Energy Schemes will continue operate to 2020 as per the Renewable Energy Target legislation.

In the period after 2020, to achieve our target for 50% of electricity generation from renewable sources by 2030, a Shorten Labor Government will engage with the industry, stakeholders, the finance community, scientists, researchers and consumers to put in place the most appropriate policy settings for the period 2020-2030 and beyond.

In Government, Labor will announce the proposed design details by 1 October 2017 with legislation governing post-2020 arrangements to be introduced to Parliament in late 2017.

This process will ensure we implement the best mechanism to achieve 50% renewable energy.

Our largest electricity companies like AGL and Origin are increasing investments in renewable energy generation because they recognise the fundamental shift occurring in energy generation. The 50% target provides certainty for these firms to boost investment, and sends a clear signal to attract investors to finance projects in Australia.

Australian households are overwhelmingly embracing renewable energy – it is simple economics.

Last year, households in Australia installed a rooftop solar system, on average, every three minutes. There are now over 1.5 million Australian households with solar power on their roofs, up from less than 100 just 15 years ago. With lower costs and greater technological innovation in household generation – along with better battery storage and increased use of zero emissions vehicles – it will be normal for households to be using renewable energy.

The current Government has been hell bent on slowing growth in the renewable sector. The Government's Warburton review on the Renewable Energy Target, which was designed to kill off renewable energy in Australia, found that power prices would be higher if the RET was repealed. The Warburton Report found that 'by encouraging additional renewable energy generation into the market and increasing electricity supply capacity, the RET is also exerting downward pressure on wholesale electricity prices'.

Clean Energy Finance Corporation (CEFC) and Australian Renewable Energy Agency (ARENA)

A Shorten Labor Government will boost Australia's renewable energy investment industry by providing greater certainty, more flexibility and support throughout the innovation chain and the project life cycle – from research and development, through the seed, early stage (start-up), formative (pre-commercial), commercial and refinancing stages, as well as in investments that support the orderly exit and rehabilitation of older, polluting power plants.

We will restore a functioning market that has been demolished by Tony Abbott and Malcolm Turnbull, and partner with our scientists and inventors to support new ideas and technologies.

When last in Government, Labor established the Australian Renewable Energy Agency (ARENA) to drive investment in the renewable energy sector. ARENA has been highly successful in supporting the renewable revolution in Australia by providing essential grant funding to emerging technologies.

At the end of the 2014-15 financial year, ARENA had supported 232 projects, 42 of which had already been completed. ARENA committed \$1.1 billion, for projects worth a total of \$2.7 billion.

These projects included:

- The largest solar farm in the southern hemisphere
- The world's first wave farm
- Cheaper and more dependable electricity through renewables in more than 30 off-grid indigenous communities.

Consistent with the Government's continued attacks on the renewable energy industry, the Government's cuts to ARENA have left it without the capacity to provide grant funding to support the next big idea or the

next renewable energy technology. Grant funding is important because it can provide the necessary capital buffer that enables a project to secure debt finance. Labor supports the need for increased co-investment in projects, but the Government's approach has created a gap in the development cycle, cutting support for pre-investment ready projects.

Given the turmoil created by the Liberal government for ARENA over the past three years, including significant changes to the funding trajectory, Labor will work with the new Board based on the core principles **and** original intent of ARENA, while ensuring the benefits from upside windfalls are captured by the taxpayer.

To drive the next generation of renewable projects, and to make up for the lost time under the Abbott/Turnbull Government, Labor will inject an additional \$206.6 million over four years for a specific Concentrated Solar Thermal round.

In addition to further investments in ARENA, Labor will also restore flexibility to the Clean Energy Finance Corporation (CEFC) by broadening the Investment Mandate to make it **technology neutral**. By reducing unnecessary red tape, this will empower the CEFC to drive further investment in Australia.

In addition, Labor will establish **realistic benchmark returns** based on analysis of CEFC return and risk profiles for investments by Professor Bob Officer and Dr Steven Bishop in November 2014.⁹

Labor will also provide **certainty** in the Investment Mandate by locking it in for the full course of the next term of Parliament following the proposed reforms outlined above.

Community Power Network

Labor believes that all Australians should be able to benefit from renewable energy solutions in their home.

That is why we will work with the State and Territory Governments to develop a Community Power Network that will draw from the skills and expertise around the country to support the delivery of renewable energy solutions in social and community housing, rental properties and apartment-style living.

The Network will oversee the development of up to ten Community Power Hubs across Australia that will work in communities to support the development of local projects to address local issues. Their mandate will be coordination, capacity building, networking and connecting and problem solving.

The Network will develop an online community to ensure that ideas, models, business plans, implementation strategies and case studies are freely available to all community energy groups. The Network will be a solution broker and bring legal and technical expertise to the passion of community ideas.

Community Power Hubs will provide legal and technical expertise and start-up funding to help kick-start clean energy projects across Australia. Projects eligible for funding in communities across Australia could include:

- 'Solar gardens' for renters
- low-income energy efficiency (including retrofits of existing social housing stock)
- solar programs using innovative finance like council rates programs

⁹ Dr Steven Bishop & Professor Bob Officer, EMCS, [Return and Risk Profiles for Investments](#), November 2014

- community wind farms
- pilot community solar projects with social housing providers
- rates financing for low-income pensioners.

Labor will provide \$98.7 million over four years to establish the Community Power Network which will support communities to implement energy solutions in social and community housing.

This funding includes over \$16.0 million per year in competitive grants for community groups to pilot new approaches and demonstration projects in community housing, providing lessons that can then be rolled out nationally through the Network.

This approach is an effective way of improving energy use, with modelling undertaken by Marsden Jacobs and Associates finding that, given time, community energy projects could leverage \$17 of community funding for every \$1 of government funding.¹⁰

Leading by example

From 2020 when the Large Scale Renewable Energy Target and Small Scale Renewable Energy Schemes come to an end, a Shorten Labor Government will also show leadership in driving this transition to renewable energy by facilitating a process through which the Commonwealth bundles its total energy demand into Power Purchase Agreements (PPA).

PPAs are a key financing mechanism to drive new investment in renewable energy.

The Government is a significant energy user and it can play a role in expanding Australia's renewable energy industry. To directly drive investment in renewable energy, the Government would, from 2020, work with energy providers to enter into PPAs equal to bringing Commonwealth energy use up to 50% renewable energy by 2030.

These would be 10 to 15 year contracts, and would provide the certainty needed for long term investment in the renewable energy sector.

Labor will consult with the energy industry and regulators in finalising the design of this proposal.

Financial Implications

2015-16	2016-17	2017-18	2018-19	Total¹¹
0.0	0.0	-76.2	-76.2	-152.4

¹⁰ McKenzie, P. (2013), ['Community Renewable Energy Fund'](#), Report by Marsden Jacobs and Associates for the Coalition for Community Energy

¹¹ Totals may not sum due to rounding

Cleaner Power Generation

Labor's renewable energy policies will drive billions of dollars in new investment in renewable energy in Australia - boosting our generation capacity and re-shaping the energy mix that powers our businesses and households.

This step up in renewable energy capacity will mean that the very old, heavy polluting power stations will become less and less a feature of Australia's energy future. This shift will require a framework to ensure that the transition is orderly, so that the hand over from old to new sources of generation is in the best interests of the economy and consumers. This framework will need to be designed to strengthen and modernise the National Electricity Market (NEM).

Labor is proposing a standalone approach for cutting pollution in the electricity sector. Labor recognises that the electricity sector is unique to the economy, and so this package of measures has been structured to best meet our climate change targets in the most efficient way. Labor has designed policy settings to strengthen energy security, put downward pressure on power prices, and drive the transition to clean sources of power.

To achieve this, Labor will:

- ensure the National Energy Market meets the needs of 21st century consumers through an Electricity Modernisation Review
- develop a plan to ensure the orderly transition of Australia's energy generation from polluting coal-fired power stations to renewable and clean energy, with a core focus on supporting workers and communities
- implement an electricity emissions trading scheme.

A transition is needed to modernise our energy sector. Labor's plan will kick start this transition and set out a methodical and structured pathway for the energy sector in Australia to become the modern sector we need.

Australia's electricity generation sector is the largest source of carbon pollution in the economy, producing around one third of the nation's pollution. You can't make climate change promises unless you acknowledge this.

Australia has one of the most emissions-intensive electricity sectors in the world, with more than 75% of electricity generated from coal. Australia is also an energy-intensive economy with relatively high rates of economic activity in sectors like steel and aluminium smelting.

Australia performs poorly in energy productivity, with other G20 and OECD nations improving their productivity at rates much higher than Australia. Moreover, it is critical that Australia complete this diversification and modernisation to secure energy that is reliable, competitive and sustainable to deliver on the needs of industry and households.

Australia needs a modern energy sector – one that is consumer focussed, clean and efficient. Quite simply, the current sector is failing against these benchmarks.

Our energy sector is defined by investment decisions made in the 1950s in heavy polluting generation assets, fragmented network arrangements, poor investment signals, and high energy prices. Some of our oldest power stations have been in operation for over 50 years.

A modernisation is needed to secure our energy sector. Labor's plan will kick start this while securing the reliability of continuous supply by:

- boosting productivity and efficiency
- setting the right signals to provide Australia with a clean energy mix
- guaranteeing continuity of supply
- addressing oversupply issues.

What will Labor do?

In Government, Labor will initiate a broad review of the National Electricity Market to ensure that its *Objective*, law, rules and operations are consistent with the needs of Australian consumers in the 21st century.

Specifically, the review will seek to:

- ensure the lowest possible cost power for all Australian households and businesses
- ensure the system takes proper account of the need to reduce carbon pollution levels in electricity generation and of modern trends in electricity, including distribution and storage
- ensure that significant growth in renewable energy is transitioned into the energy mix in an orderly manner as old and heavily polluting coal power is withdrawn and replaced.

Labor will consult with the COAG Energy Council, National Energy Market agencies, industry, unions and energy users about the conduct of the Electricity Modernisation Review.

The Review will commence by the end of 2016 and will report within 12 months on:

- the NEM framework – the Objective, the law and rules – to ensure it is consistent with the needs of consumers and takes proper account of the objectives of decarbonising the electricity sector consistent with national emission reduction targets
- a framework to ensure the transition to modern, clean power sources – particularly renewable energy – and the withdrawal of old, heavily polluting generation in an orderly way.

A Labor Government will ensure that the implementation of those reforms through Commonwealth law and the COAG Energy Council is ready to commence in 2020 to coincide with the commencement of the 2020 Emissions Trading Scheme and legislation relating to the 2030 target of 50% renewable energy generation.

National Electricity Objective

At present, agencies in the National Electricity Market such as the Australian Energy Market Operator (AEMO), the Australian Energy Market Commission (AEMC) and the Australian Energy Regulator (AER) are required to make decisions in accordance with the National Electricity Objective (the Objective).

Neither the overarching Objective of the National Energy Market, or its rules, reflect the imperative to reduce pollution.

The current Objective requires these agencies to "promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to the price, quality, safety, reliability and security of supply of electricity" but it does not include any reference to the reduction of carbon emissions from the sector.

It means these agencies effectively have their hands tied when it comes to playing their part in dealing with the challenge of decarbonising Australia's electricity industry.

Labor will amend the Objective to include a reference to reducing carbon pollution, so that our electricity market agencies can properly include this policy objective in their day-to-day operations, rule-making and decision-making for the first time.

Labor will work with state and territory governments through the COAG Energy Council to ensure this important amendment is implemented and our energy sector can get on with the job of transitioning away from old coal-fired generation and into new low emissions technologies such as renewable energy.

Boosting productivity and efficiency

The traditional business model of large generators dominating the system is being disrupted by innovations in rooftop and other small-scale and distributed generation, as well as emerging storage options. That disruption will continue to unfold over the years to come.

Electricity has been one of the worst performing industries when it comes to productivity – a key ingredient for economic growth.

The Productivity Commission has noted that between June 2007 and December 2012 electricity prices rose by a staggering 70%, not due to the carbon price, but rather due to spiralling network costs as a result of significant inefficiencies and flaws in the regulatory environment.

In large part electricity price rises have been due to overinvestment in electricity networks – so-called “gold-plating”. Excessive investment in electricity networks over and above what is needed leads to unnecessary price increases and misallocation of resources that are best used elsewhere in the Australian economy.

Poor demand management is also contributing to investment in electricity infrastructure that is inefficient and unnecessary. For example, in New South Wales, some 25% of retail electricity bills are required to meet a few (around 40) hours of very high (‘critical peak’) demand.

This is a much needed microeconomic reform. If Australia wants to compete and get the most reward from the growth in our region, having an efficient electricity network will be a critical factor.

The Productivity Commission states that reforms associated with the transmission network could generate large efficiency gains in the order of \$2.2 billion to \$3.8 billion over 30 years. If carefully implemented, critical peak pricing and the rollout of smart meters could produce average savings of around \$100 to \$200 per household each year in regions with impending capacity constraints (after accounting for the costs of smart meters).

The years following the establishment of the National Electricity Market were good for electricity consumers. The competition reforms drove prices down at precisely the time that household consumption was rising due to the spread of air conditioners. Household consumption rose by 10% as the proportion of households with air conditioners rose from one-third to two-thirds. Price reductions at the same time cancelled out that increase in average demand, meaning that bills were flat in real terms over that period. As wages continued to grow, electricity bills dropped from 1.8% to 1.5% of average weekly earnings.

2007–2015: “Gold Plating”

Over the past eight years, by contrast, power bills have skyrocketed. Electricity bills raced ahead of wages and pensions. From 2007 to 2013, average retail electricity prices in Australia soared by almost 80% above inflation, while staying steady in real terms in comparable countries like the US and Europe.

These increases were driven overwhelmingly by massive investments in networks (poles and wires) that ran to tens of billions of dollars and saw network costs climb to 50% of the average household bill. Gold plating was the key

driver in household electricity prices over this period. Between 2001 and 2005, aggregate capital expenditure on electricity networks in New South Wales and Queensland was \$7 billion. In the period between 2010 and 2014, the same expenditure increased to \$30 billion. As a result of this capital expenditure, network prices roughly doubled.¹²

The impact of “Gold Plating”

For example, in NSW power prices increased from \$1,100 a year for an average household to a peak of \$1,900 (2013) in real terms as a result of gold plating.

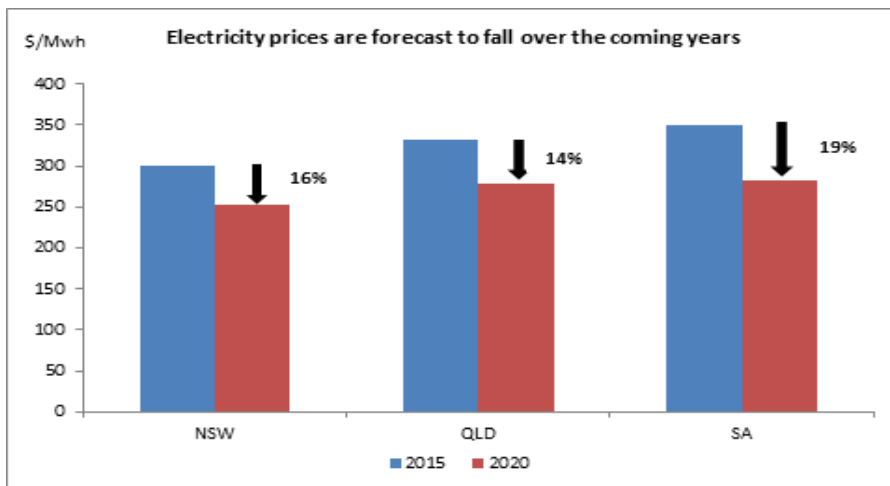
2015–2020: Projections on Electricity Bills

In Government, Labor introduced important reforms to the electricity sector to minimise the rises in power prices. Over the five years to 2020, AGL projects that household bills will drop in real terms by between 11% and 25%, depending on whether household consumption rises or falls in the face of more efficiency measures.

These reductions are largely driven – in New South Wales, South Australia and Queensland – by mandated reductions in network charges ranging from 25 to 33% (in real terms). Overall – in those markets – standard electricity prices will drop by 14 to 19% in real terms, leading to a reduction in average household bills of:

- 11 to 15% if demand picks up
- up to 25% if households adopt further energy efficiency measures.

¹² **ELECTRICITY PRICES** - F. Orton, T. Nelson / Economic Analysis and Policy 48 (2015)



The impact of these Labor electricity market reforms are significant and will continue to yield benefits for Australian households. Furthermore, it means that even with the introduction of the measures in this package to transition Australia's energy sector, Australian consumers will be paying less for their power over the coming years.

To demonstrate our commitment to minimising the impacts on families and low income households, we will establish a panel of consumer and families advocates to work with us on the final details in Government including the ACTU, ACOSS, CHOICE, COTA and National Seniors.

Provide Australia with a clean energy mix and address oversupply issues

Transitioning to a clean energy future requires a holistic policy response that recognises the current energy supply issues, and provides a structured and staged framework for ageing and heavy polluting generators to be replaced by clean energy assets.

To achieve this Labor will introduce two market mechanisms that will work in tandem to cap emissions and support the orderly transition to cleaner sources of energy:

- capping emissions through a electricity-generation emissions trading scheme
- delivering a clean energy transition mechanism.

These policies will be carefully calibrated to recognise the unique position of the generation sector in the Australian economy, and the need for reliable energy.

Emissions Trading Scheme – electricity

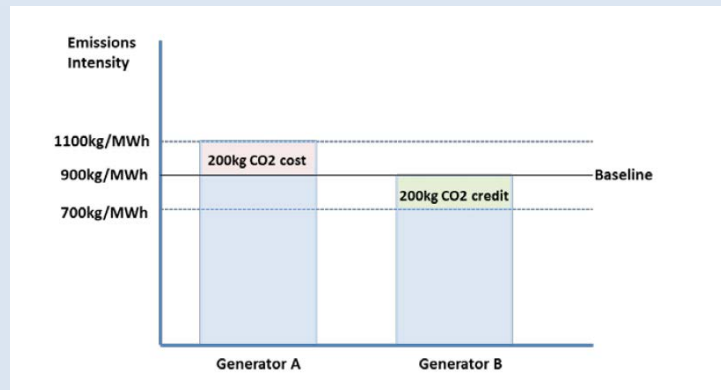
From 2018 energy generation will be covered by a separate and closed scheme, ongoing. This will ensure that reducing carbon pollution from generation can be internalised and managed in a manner that strengthens energy security and protects consumers.

The framework for this mechanism is modelled on the approach advocated by the Australian Energy Market Commission (AEMC) in 2015 in the consultation process for the Government's Safeguard Mechanism. The AEMC recommended this model as a superior option to the proposed Government policy, and it is understood that these measures are under consideration by COAG.

This model provides for 'dispatch and investment efficiencies, while providing flexibility for the mechanism to evolve'.¹³

Australian Energy Market Commission Model (2015)

In broad terms, '[g]enerators with an intensity below the baseline would create CO₂e credits ... equal to the difference between their emissions intensity and the baseline for every MWh produced. The demand for credits comes from generators above the baseline who purchase AESCs required to reduce their intensity to the baseline, as illustrated below.'



Source : AEMC

The AEMC notes that:

'Overall, wholesale electricity prices, and the resultant effects on consumers, are minimised under this approach. This is because low emissions generators are rewarded with an additional source of revenue every time they generate, which will be reflected in lower offer prices due to an incentive to ensure they are dispatched in order to create credits. Importantly, however, high emissions generators are only penalised to the extent their emissions intensity is above the baseline, which minimises the cost of meeting the safeguard mechanism target'.

Importantly, the Australian Energy Market Commission advises that such a system would operate 'without a significant effect on absolute price levels faced by consumers'.

Under Labor, electricity generation will be covered by a 'cap' on carbon pollution that reflects a proportional share of the overall emissions reduction task set for the broader Emissions Trading Scheme. Each generator will be allocated a baseline that is calculated according to a sector-wide emissions intensity baseline.

Following the December 2015 meeting of the COAG Energy Council officials have been tasked by the Federal and State Governments to develop this model further to facilitate better integration between carbon policies and the energy sector.

Clean energy transition

¹³ AEMC, [Submission to the Australian Government](#), Consultation on Safeguards Mechanism, 28 April 2015

A significant boost in renewable energy and a cap on emissions will drive the transition in our energy sector from high emissions production to clean energy generation, however experience to date indicates that this transition is unlikely to occur in an orderly way.

Labor's plan will guide the orderly transition of generation from old coal fired power stations to new clean energy.

There are some key dynamics in the generation sector that require addressing:

- a significant proportion of Australia's existing generation assets are old coal fired power generators which have significant barriers to exiting the market
- overcapacity is dampening price signals to new investments
- risks to energy security exist because there is no framework for managing the transition in an orderly way.

These market forces are already at work, and it is the responsibility of the Government to implement a strategy that de-risks the energy sector and guides the transition to a clean energy future. The reliable supply of electricity to households and businesses is an essential input to our economy and way of life.

Labor believes that governments should adopt a framework to facilitate the transition in our energy generation market, including the retirement of an appropriate amount of Australia's existing coal-fired generation withdrawn from the market.

Given the excess capacity in the market, the age and emissions intensity of some generators, and the need to reduce pollution levels from the electricity sector, the electricity sector itself is increasingly supportive of such a framework being developed and implemented.

Case study:

An example of disorderly process is Alinta's announcement of the closure of its two power stations at Port Augusta in South Australia and the associated coal mine at Leigh Creek.

This announcement involved minimal notice, no broader planning, and little consideration of the community and worker impacts. It took months for the Turnbull Government to respond at all to that announcement and, in the end, its response amounted to a Structural Adjustment Package capped at just \$1.3 million for 450 workers.

A “Just Transition” Out of Coal-Fired Power

Labor is pursuing an ambitious expansion in renewable energy to take advantage of our natural resources and strong research capability. Labor supports the expansion of renewable energy generation, and will develop policies to see 50% of Australia’s electricity generated by renewable energy by 2030. As renewable energy ramps up there will need to be an orderly transition as heavy polluting coal-fired power is withdrawn from the energy mix.

If Australia is to achieve its international commitments to reduce carbon pollution levels – and to achieve net zero emissions by 2050 – it is essential to develop an orderly process to decarbonise the electricity sector. This process requires an orderly transition from heavily polluting coal-fired power to modern, clean power sources – particularly renewable energy. By modernising our electricity sector, we will be reducing reliance on 50 year old coal fired power.

Labor will introduce a framework to kickstart the closure of the older, heaviest polluting generators consistent with the principles set out below. Labor will also develop a longer term framework to drive that transition, based on advice from the Electricity Modernisation Review.

Labor considers that such a framework should include the following principles, to be developed further with the industry, unions, user groups and State Governments, as part of the Electricity Modernisation Review.

1. Labor considers that any withdrawal of an existing generation plant should be subject to an **orderly process** that focuses in particular on;
 - the emissions intensity of that plant, and
 - the overall reliability and affordability of supply in the market.
2. Consistent with the decision of the COAG Energy Council of December 2014, Labor **will not use taxpayers money to pay companies** to withdraw generation from the market. Labor’s focus in government will be on supporting workers and communities affected by any such closures.
3. Labor prefers a **market-based approach** to ensuring an orderly process of closure. Various ideas are currently being explored and advocated within academic and industry circles. One example is set out in the 2015 ANU Working Paper by Frank Jotzo and Salim Mazouz, which while requiring further development and consideration:
 - Avoids the pitfalls of government payments for closure and the information asymmetries inherent in such a payment system; and
 - Places the responsibility of funding the costs associated with such closure on the industry (which benefits ultimately from this orderly approach) and not taxpayers through the Federal Budget.
4. A central principle of the Paris Agreement – signed by Malcolm Turnbull on behalf of Australia – is that Government must ensure that the transition to a clean energy future is a **“Just Transition”** for impacted workers and communities.
 - The “Just Transition” commitment is consistent with Labor’s longstanding approval to dealing with the impact of economic change on workers and communities, exemplified by the Hawke and Keating governments.
 - Labor will establish a Just Transition Unit in the Department of Environment to co-ordinate the work of different Commonwealth agencies to the implementation of that element of the Paris Agreement.
 - The unit’s work will focus initially on transition in the electricity sector, and will draw on advice from a tripartite Council that brings together governments (including local government), industry and unions.

5. The management of an orderly process of withdrawing a generation plant and any directly-associated assets (such as mines) should be seen as a matter for the entire industry within an identifiable region; rather than just for individual companies and their separate workforces.
 - In the same way that the framework for determining an orderly approach to closure should be an industry-wide framework, so too should be the approach to dealing with the employment and community consequences of such closure.
6. As part of the “Just Transition” commitment Labor intends to develop a regional approach to employment issues associated with the withdrawal of generation capacity, which groups all generators within each identifiable region. Where there is a closure under a market mechanism developed as part of Labor’s proposals in a particular region, Labor’s approach would see the employment impact of withdrawn generation pooled or brokered in a way that deals with the impact on a regional basis, rather than just as an impact on an individual workplace. Such an approach could see;
 - opportunities for redundancies arising from any closure spread across all generators/mines in the region with a pooled or brokered process and funding arrangement.
 - ongoing staff from the closing generator/mine offered redeployment to the remaining generators consistent with the overall impact on job numbers, and with pooled or brokered arrangements dealing with matters such as continuity of service.
7. Other employment impacts associated with Labor’s plan to transition our energy mix (such as access to retraining and relocation and the impact on superannuation and pension entitlements) would be considered by Government on the basis of advice from the Just Transitions Advisory Council, consistent as far as possible with the principle of shared obligations and opportunities.
8. Just Transition also demands a proactive program of economic diversification for impacted regions and communities.
 - Labor will work with relevant State and Local Governments and business to develop these programs – which will be factored into the market-based approach to orderly closure described above.

Financial Implications

2015-16	2016-17	2017-18	2018-19	Total ¹⁴
0.0	0.0	0.0	0.0	0.0.

Consistent with the Energy White Paper, the National Electricity Market Review will be managed from within existing departmental resources.

¹⁴ Totals may not sum due to rounding

Build Jobs and Industry

Climate change will drive the most significant economic transformation in modern history.

But there is an important choice for governments the world over – do they support this transition, ensuring their countries and citizens benefit from the change? Or do they ignore the shifts, consigning their countries to laggard status in the global race for growth and jobs?

The heightened awareness of climate risk is driving rapid and accelerating innovation in our energy sector, resulting in falling costs for clean technology and renewable energy. Furthermore, the increasing market for low-carbon products, new patterns of international production and trade and technological advances have dramatically altered the shape of the global economy over the last two decades.

‘Business as usual’ is no longer an option. Structural change is inevitable, but we need to act now so that we can capitalise on these shifts to build a stronger, fairer and more resilient economy.

To achieve this we need a plan to position Australia to succeed from this rapid restructuring of the global economy, address the challenges posed by a changing climate and create new opportunities for our businesses and industry – all to secure the jobs of the future.

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 are only possible when you have a decent job.

The transition of Australia’s economy to a clean energy future is not negotiable.

Labor knows that we need to chart a course to dramatically reduce our carbon pollution levels along with the rest of the world to keep global warming to well below two degrees Celsius. All serious economic modelling demonstrates that this can be done in a way that continues Australia’s economic prosperity.

We do recognise that there will be uneven impacts across Australia with some industries and regions impacted by change, especially those with a heavy reliance on fossil fuels like the Latrobe Valley, Illawarra, the Hunter and the Collie River Valley, along with other emissions intensive trade exposed sectors.

Intelligent policy architecture will not only de-couple emissions from growth, it will transform and modernise existing industries, raising competitiveness as well as supporting the growth of whole new industries.

Over the last 30 years, millions of Australians have reaped the benefits of strong jobs creation and good wages. This has been the driver of our growing economy. Yet today in Australia, unemployment is too high. Underemployment and insecure work are also on the rise, putting more pressure on living standards and economic security. Current jobs are disappearing and being continually replaced by new jobs, requiring new skills.

That’s why Labor has put full employment at the centre of its economic plan for the nation. For Labor full employment means every Australian working to their full capacity.

We will achieve this by:

- enhancing Australia's capacity with needs-based funding for schools and affordable, accessible higher education
- lifting capacity through boosting the participation opportunities of hundreds of thousands of people with disability, and their carers
- broadening capacity with strong TAFEs, training young people and re-training adult workers
- boosting capacity by making smart investments, and attracting good investments: in infrastructure, renewables, manufacturing, tourism, food and fibre
- securing capacity with the great Australian safety net: fair wages, decent pensions, universal healthcare and compulsory superannuation.

Australia has repeatedly committed to taking action necessary to keep global warming below two degrees Celsius. At the Paris Conference in December 2015, the Turnbull Government joined the rest of the world in strengthening that commitment to ensure that warming was kept 'well below' two degrees Celsius. This will have a significant impact on industry development and jobs into the future.

Labor believes that a strong Australian economy has diverse sources of growth across a range of sectors. We understand that to build a balanced and resilient economy requires careful management and deliberate choices to support Australians dealing with major global trends. Climate change does not discriminate against the sectors it affects; it touches all parts of the economy, albeit to differing extents.

What will Labor do?

Labor will focus on the jobs of today and the jobs of tomorrow by investing in the skills and knowledge that will underpin our future industries.

Labor also recognises that there are sectors of the economy that are of particular strategic importance, like steel, cement, aluminium and others. These strategic industries are energy intensive and highly trade-exposed – competing with growing economies like China, India and the Asian region. Many of those industries are limited by the extent of technological change on the horizon that place constraints on their ability to substantially reduce the inherent emissions intensity of the activity.

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.

That is why Labor will support the competitiveness of emissions intensive industries that are strategically important to this country's future. This will be central to Labor's policy on reducing carbon pollution levels. We understand that maintaining strong and viable local industries like steel and aluminium is important for Australia's economic development and our successful transition to a low-carbon future. Labor will work to see the emergence of stronger, renewables based emissions intensive, trade exposed industries.

Labor will establish a Strategic Industries Taskforce to undertake in-depth engagement with emissions intensive, trade exposed industries and identify options to support their future competitiveness.

The Taskforce will engage with individual firms, peak bodies and research groups to explore the specific challenges and opportunities in each industry, and systematically review both the domestic and global markets they operate within. This will ensure that the Taskforce provides advice to government which is grounded in practical industry thinking and tailored to the unique needs of each sector.

This would include:

- delivering targeted assistance to enable firms to:
 - invest in energy efficient capital equipment and low emissions technologies
 - invest in processes and products to reduce their carbon emissions
 - maintain their international competitiveness
 - manufacture new products and supply new markets
- pursuing a clean energy procurement policy that maximises local content in clean technologies and the renewables sector
- investing in science and research to ensure we are in a position to create and commercialise the next wave of innovation in renewables and clean technology
- coordinating existing government programs to assist in the transition, including (but not limited to):
 - Training and skills (tertiary and vocational education)
 - Existing research priorities and incentives
 - Infrastructure, and regional planning
 - Employment policies.
- maximising Australian content in government funded services.

The recommendations of the Taskforce will also help inform the design process and rules for the Emissions Trading Scheme commencing in 2020. During the period leading up to 2020 Labor will support the competitiveness of strategic industries through a cap and offsets scheme with full access to international offsets.

To demonstrate our commitment to working with businesses and communities to transition to more sustainable, long term industries, Labor will establish a Strategic Industries Reserve Fund with an initial funding profile of \$300m over three years from 1 July 2017 to 2020. This Fund will initially support emissions intensive industries modernise and diversify to deal with structural change and seize the opportunities of clean technology and the transition to clean energy. This Fund will initially be capitalised up to 2020 as part of Phase One of the Emissions Trading Scheme (as set out in the *Reduce Pollution* section of this paper). Further investments in the Fund beyond that period will form part of the work of the Strategic Industries Taskforce will undertake to inform Phase Two of the Emissions Trading Scheme commencing in 2020.

This Fund will support the ongoing competitiveness of our strategic industries during Australia's transition to a low-carbon economy. This type of fund would be one of the mechanisms for delivering on the recommendations of the Strategic Industries Taskforce, for example in relation to support for affected workers in emissions intensive regions, targeted assistance to modernise and invest in low emissions technologies, additional research and development, new market identification and measures to improve efficiency and productivity. Labor recognises that different industries will have different timeframes to modernisation and the facilitating and support this change may require the use of different tools. In keeping with Labor's emphasis 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. Labor will also assist workers to transition into clean technology industries through investments in vocational education. We have announced our TAFE Funding Guarantee and FutureSmart Unis policies to drive 100,000 STEM graduates over the next five years, and we will deliver funding certainty for students and unis through our Positive Plan for Unis.

We will also work with local TAFEs, universities and chambers of commerce on employment and retraining programs to assist communities through Australia's transition to a cleaner, more sustainable economy. Labor will also support small business owners to access the finance and capital they need to seek new opportunities as this transition gets underway.

Financial Implications

2015-16	2016-17	2017-18	2018-19	Total¹⁵
0.0	0.0	-50.0	-100.0	-150.0

¹⁵ Totals may not sum due to rounding

Cut Pollution

If climate change continues unmitigated over the coming years, it will cause serious and damaging economic dislocation across the world, with Australia set to suffer some of the worst consequences. For Australia, unmitigated climate change will come at a huge economic cost, not least of which will include severe and damaging impacts to the nation's infrastructure and the death of ecosystems such as the Great Barrier Reef.

But it is not just the nation's ecosystems and infrastructure at risk. The costs will be more real and wide-ranging. Unabated climate change will cause huge upheaval in financial markets across the world, markets which underpin the wealth of Australians and the retirement incomes of Australia's ageing population. Recent studies have put the cost of unmitigated climate change to investors around the world at between US\$2.4 and US\$24 trillion.¹⁶

Ambitious global mitigation action is necessary to avert this pending environmental and economic crisis. Recent global agreements have been positive. At the Paris climate change meetings, governments around the world, including Australia, agreed to limit temperature rises to well below two degrees Celsius while also acknowledging the need for global emissions to peak as soon as possible.

Addressing climate change requires enduring and sustainable market based policy solutions. Consistent with the long term nature of this policy objective, it is important that policies can be calibrated over time to meet Australia's international emission reduction obligations while having the least impact on the economy.

We know that unabated climate change will cause huge upheaval in financial markets across the world, markets which underpin the wealth of Australians and the retirement incomes of Australia's ageing population.

There is a long-standing consensus amongst economists and public policy experts that market based mechanisms such as emissions trading schemes should be part of any climate mitigation policy toolkit. This is because they provide an incentive for businesses to adjust their behaviour and switch to producing their goods and services with cleaner technologies and processes.

This is why a Shorten Labor Government will introduce an emissions trading scheme as part of its suite of climate change initiatives. A domestic emissions trading scheme will cap the nation's carbon pollution levels, allowing business to work out the cheapest and the most cost effective ways to reduce their emissions.

Labor's Emissions Trading Scheme (ETS) will sit alongside the other policies in the framework approach, including the separate scheme for electricity and energy efficiency.

This approach will be in stark contrast to the Abbott-Turnbull Government's discredited Emissions Reduction Fund that sees billions of taxpayer dollars paid to polluters without achieving any additional and enduring emissions reductions.

An emissions trading scheme will drive more investment in clean technologies and renewables and ensure that Australia joins the growing list of countries and jurisdictions using carbon pricing, while also allowing

¹⁷ <http://www.environment.gov.au/minister/hunt/2015/mr20151007.html>

Australian businesses to access low cost international offsets and permits – ultimately lowering the cost of achieving Australia’s emissions reduction targets.

Australia needs a long term market based mechanism to meet our emissions reduction obligations, and to drive a clean energy transition in our economy.

Under the Abbott-Turnbull Government, Australia became the world's first developed nation to repeal carbon laws that capped greenhouse-gas emissions. As other countries are moving forward, Australia has become increasingly isolated when it comes to laws which cap carbon emissions.

Under a Malcolm Turnbull-led government, emissions will continue to rise because there will be no meaningful, binding cap. This is evident in the most recent carbon reporting.

Worse, the Government is doing nothing to provide an enduring long term solution to Australia being able to achieve the deep cuts in emissions necessary to meet our international obligations. The Government’s taxpayer-funded Emissions Reduction Fund will continue to expose the Federal Budget to substantial long-term fiscal risk, or, more likely, Australia will simply fail to achieve our carbon reduction obligations.

The Abbott-Turnbull Government’s discredited Direct Action policy has seen Australia’s pollution levels start to rise again for the first time in a decade. The Government’s own data confirms that pollution will continue to rise under their failed policy. If Malcolm Turnbull’s Direct Action policies were kept in place to 2020, emissions would increase by 6% between 2013 and 2020, having declined by 8% during Labor’s last term in Government.

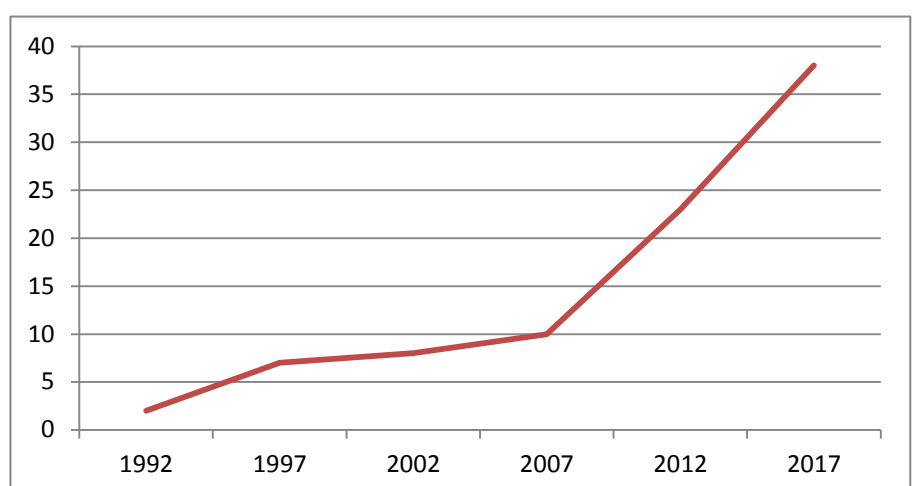
Why is Labor doing this?

There is a strong growing trend for countries or other jurisdictions using emissions trading to combat climate change. The European Union introduced their emissions trading scheme over a decade ago, with many countries following their lead.

The graph below shows the significant growth in carbon pricing instruments implemented or scheduled for implementation, with significant growth over the period 2012-2017.

Accessing global carbon markets through mechanisms like emissions trading schemes allows businesses to access cheap international offsets and permits which can be used to satisfy domestic emissions reduction obligations.

While Australia has gone backwards when it comes to using carbon pricing as part of its policy mix, China, Australia’s largest trading partner, has been powering ahead.



China has piloted seven emissions trading schemes since 2011 and recently committed to introducing a nationwide emissions trading scheme by 2017. China understands that unless it is part of the growing

global carbon market, this will be to the detriment of its people and the Chinese economy. Around one billion people and more than 40% of the world's economy have already embraced the opportunities of emissions trading schemes.

Given Australia is one of highest per capita emitters in the developed world, accessing these emissions units helps ensure that Australia can achieve its emissions reductions at least cost to the economy, which is good for jobs and growth.

What Will Labor Do?

Labor is committed to introducing an Emissions Trading Scheme. Our scheme will cap the nation's carbon pollution levels, but allow business to work out the cheapest and most effective way to operate. Importantly too, it will not involve taxpayers handing over billions of dollars to Australia's large polluters.

Labor's ETS will operate in a way that protects the jobs and overall competitiveness of Australia's trade-exposed industries – because no environmental purpose is served by those industries simply shifting their operations to other countries.

Labor's domestic scheme will have two distinct phases. The first phase is to establish the architecture for an enduring ETS, and the second to then drive the long term transition in our economy.

It is important to note that electricity isn't covered by the ETS, but will instead be covered by a separate, targeted scheme.

Labor will boost the Clean Energy Regulator's funding by \$36.1 million over the current forward estimates to properly manage this transition.

Phase 1 Emissions Trading Scheme: 2018-2020

Labor will introduce phase one of the ETS to operate for two years, from 1 July 2018 until 30 June 2020 to align with the second (and final) commitment period of the Kyoto Protocol.

The first phase of the ETS will cover facilities emitting more than 25,000 tonnes of carbon pollution per year ("liable entities"), returning to the scope of coverage reflected in the Clean Energy Act. The phase one scheme will impose a 'cap' on carbon pollution produced by liable entities. This 'cap' will reflect an appropriate proportion of the limits on pollution required to achieve the bipartisan commitment to ensure that carbon pollution levels in 2020 are 5% lower than 2000. These arrangements will be finalised in Government and implemented by the Clean Energy Regulator (CER).

Phase one of Labor's ETS is a "cap and offsets" scheme, a form of an emissions trading scheme. This blends design elements from both 'cap and trade' schemes and 'baseline and credit' schemes. Like cap and trade schemes, there will be pollution caps to ensure Australia meets its emissions reduction targets. And like baseline and credit schemes, big polluters will be required to offset emissions above their caps by purchasing carbon credits or offsets.

Phase one of Labor's ETS has been designed to ensure Australia achieves the bipartisan target to reduce carbon pollution by 5% on 2000 levels by 2020 – while protecting jobs in strategic industries like steel and aluminium.

Key to achieving this outcome is access to international permits and offsets. Under Labor's ETS, all industries and firms will have access to international permits, providing for cost-effective abatement. Strategic industries in emissions intensive, trade exposed (EITE) sectors will be able to offset their abatement task with 100% international permits. Companies outside these sectors will be able to access a percentage of international permits, with the percentage to be determined through the consultation process. While the percentage of international permits allowed will be substantially higher than under Labor's Clean Energy Future reforms, a limit helps to support the development of a domestic offsets market in Australia, with resulting jobs here.

Under phase one of the ETS there will be no carbon price imposed on liable companies that have emissions below their caps. These liable entities will not be required to purchase or receive permits to operate. Where a liable entity exceeds its 'cap', it will be required to provide the Clean Energy Regulator with an equivalent amount of carbon offsets for that year. In this phase, companies will only be liable for emissions in excess of their pre-determined cap.

Any emissions intensive, trade exposed company that exceeds its pollution cap will be able to purchase carbon offsets on the international market, at minimal cost. Where a firm exceeds their cap, there would be a very low 'effective carbon price' per tonne of total carbon pollution.

The ETS will operate alongside the other policies in Labor's climate change response, including the clean energy plan and our approach to renewable energy. Again, Labor will put in place a separate and specific scheme – as detailed in the *Cleaner Power Generation* section of this paper. factsheet.

A Labor Government will finalise the design details of the first phase in consultation with industry and stakeholders to ensure a smooth transition from the current Government scheme.

Phase 2 ETS: 2020

Labor will introduce an ongoing Emissions Trading Scheme from 1 July 2020. Under this ETS, pollution levels will be capped and reduced over the course of the decade in line with Australia's international commitments under the Paris agreement and any additional Government policy to reduce pollution levels.

The design of the post-2020 ETS will be finalised during the 2016-2019 Parliament, to commence after the 2019 election. Those details will include rules governing the allocation of caps to liable entities, access to international markets (including the possibility of formal linkage to other schemes), the operation of the domestic offsets market and other details. The design process will also take account of the impact of the 2020 ETS on households, industry (especially emissions intensive, trade exposed sectors) or "EITES") and Australia's overall competitiveness.

Labor's Phase Two ETS will be underpinned by a series of policy principles:

- Environmental benefits: delivering a trajectory to net zero pollution by 2050 through reductions in carbon pollution informed by the latest science and our international obligations
- Economic efficiency: a reducing cap on pollution that ensures cost-effective pollution reductions in an efficient and informed investment market
- Competitiveness of Australian industries: appropriately account the impacts on the competitiveness of all Australian industries and support these industries in transitioning to clean technology

- Securing our energy needs and delivering reliable, competitive and sustainable energy to households and industry
- Fairness and flexibility: putting in place an orderly and managed transition for families and business to adjust while evolving and amending incentives to change behaviour and reduce pollution
- Transparency and integrity: ensuring clear accountability and scheme rules to establish and maintain business and community confidence in carbon pricing.

Over the course of the next Parliament, Labor will work with other Parliamentary parties, business and stakeholders on the design of an Emissions Trading Scheme to cover the Paris Commitment period from 2020.

Access to international and domestic offsets

The Clean Energy Regulator will publish rules governing the types of offsets that are eligible under Phase One of the ETS. This will include access to international offsets approved under the UN's Clean Development Mechanism as well as Australian offsets approved through mechanisms like the Carbon Farming Initiative (CFI).

In order to support a vibrant domestic offsets market, Labor will work with relevant stakeholders in Government to develop arrangements around limits on access to international offsets. Given that Australia's emissions intensive, trade-exposed (EITE) sector competes in global markets, it is appropriate that those companies be allowed full access to approved international offsets under Phase One of the ETS.

The Carbon Farming Initiative was a Labor initiative that created a market supplying offsets from a diverse range of carbon reduction projects in the land sector – including re-forestation, savannah burning and much more. We are committed to reviving that market.

Emissions Intensive, Trade Exposed (EITE) Industries

Labor's ETS will take account of the competitiveness of trade exposed industries with high emissions. Labor's approach allows us to appropriately calibrate and respond to economic circumstances on a sector-by-sector basis.

We recognise, for instance, that emissions intensive, trade exposed industries operate in global markets and therefore need to have greater access to international offsets and permits which for Phase One of the ETS will be 100%.

As outlined above, Labor's policy development process will include arrangements that support the competitiveness of these industries. Final details will be determined once in government, following an extensive consultation process to transition these sectors to a low carbon future, while maintaining important capacity in strategically important industries.

Coverage exclusions

During Phase One Labor will exempt certain industries including; Agriculture, Road Transport and Refrigerants. This will be reviewed to ensure appropriate exemptions for phase two of the ETS.

Agriculture – Carbon emissions from agriculture have declined by about 10% since 2000. The Government projects they will return to about 2000 levels by 2030 – from around 80mt to 90mt. About three quarters of agricultural emissions are from livestock – mainly beef cattle which accounts for almost one half of the total. These sectors are expected to expand, given enhanced export opportunities in Asia. While there have

been substantial reductions in emissions intensity in those sectors in recent years, research into achieving transformational reductions in emissions from livestock is still at an early stage.

The farming sector has made the most substantial contribution to emissions reduction in Australia over the past 20 years, largely through the land clearing restrictions placed on the sector at the state level as well as the successful Carbon Farming Initiative implemented by the last Labor Government.

It is in the national interest that the sector be able to exploit the new, enhanced export opportunities in a way that is consistent with responsible land management. The land and agricultural sector represent Australia's largest opportunity in coming years to sequester carbon pollution – through soil carbon methods, re-forestation, avoided deforestation and more. In Government, Labor will continue to support the sector in these areas.

Transport - The availability of more and better data can improve the effectiveness and efficiency of our transport systems. The traffic on some road and rail networks is already centrally controlled on the basis of real time information. These technologies are spreading into options on personal devices and are driving changes in our decisions about travel mode, time and route. Labor's National Information Policy and Labor's cities agenda both support these objectives.

Australia has an opportunity to reduce greenhouse gas emissions and lower fuel bills for Australian motorists by making light vehicles more efficient. Improving the efficiency of light vehicles is one of the least costly emissions reduction options available to Australia. (Light vehicles are defined as all road vehicles under 3.5 tonnes gross vehicle mass.)

Labor's plan to reduce pollution on our roads is to introduce pollution standards for cars in line with the rules being introduced in the United States. Not only will those standards cut pollution, they'll also cut fuel bills – resulting in a net saving over the lifetime of an average car of \$7,000 according to the Climate Change Authority.

Refrigerants - The Government is fast tracking work to reduce Australia's domestic HFC emissions by 85% by 2036. This is in line with the HFC phase-down proposals under the Montreal Protocol on Substances that Deplete the Ozone Layer.

The Ozone Protection and Synthetic Greenhouse Gas Management Review is looking at new ways to reduce emissions from ozone and synthetic greenhouse gases whilst reducing regulatory compliance costs for business.

Following public consultation,¹⁷ an options paper was released for public comment in October 2015. The review is expected to be completed in early 2016 – it has not been released as of 27 April 2016. Labor will consider the results of this review and use this to inform our final approach.

Financial Implications

2015-16	2016-17	2017-18	2018-19	Total ¹⁸
0.0	0.0	-18.0	-18.1	-36.1

¹⁷ <http://www.environment.gov.au/minister/hunt/2015/mr20151007.html>

¹⁸ Totals may not sum due to rounding

Capture Carbon on the Land

Climate change will severely impact on those families, farmers and businesses that depend on natural resources like agriculture and forestry for their livelihoods.

That's because climate change means longer droughts in parts of Australia which are estimated to cost Australia \$7.3 billion annually from 2020, reducing GDP by 1% a year. Such droughts will be broken by more damaging floods, more frequent bushfires and more severe storms.

Beyond the flashpoints of these events, there are the creeping, incremental consequences:

- a massive decline in agricultural production
- irretrievable damage to the Great Barrier Reef
- widespread shortages of urban water supply
- spikes in global food prices
- increase in heat-related deaths and increased airborne disease
- heightened instability in the coastal megacities of our region.

How does the agriculture sector contribute to this transition?

The farming sector has made the most substantial contribution to emissions reduction in Australia over the past twenty years, largely through the land clearing restrictions placed on the sector at the state level as well as the successful Carbon Farming Initiative implemented by the last Labor Government.

It is in the national interest that the sector be able to exploit the new, enhanced export opportunities in a way that is consistent with responsible land management. The land and agricultural sector represents Australia's largest opportunity in coming years to sequester carbon pollution – through soil carbon methods, re-forestation, avoided deforestation and more.

That is why Labor in Government will continue to support the sector in these areas and will exclude agriculture from our proposed Emissions Trading Scheme.

Responsible management of our land sector

Australia achieved our first commitment under the Kyoto Protocol to restrain carbon pollution (to 108% of 1990 levels by 2012) because of a significant reduction in land sector emissions. These are known technically as 'land use, land use change and forestry' or LULUCF. The Kyoto Protocol only set binding targets for pollution reduction on developed nations, and most of them had stopped land clearing a long time ago. Australia lobbied hard to allow reductions in land sector emissions to be counted within the Kyoto Protocol. As a result, that provision is generally described as the 'Australia clause'.

Many other developed nations resent such emissions changes being counted, but it was critically important to Australia's achievement of our first Kyoto commitment. Excluding LULUCF (which many nations do in counting emissions), Australia's emissions averaged 130% of 1990 levels (rather than the 103% target) over the first commitment period from 2008 to 2012.

Australia's land sector emissions were around 135 million tonnes CO₂e in 1990 or around one quarter of the national total; in 2014, they were just 14mt. That huge reduction was overwhelmingly due to land clearing restrictions introduced in Queensland over time between 1999 and 2009. Some of these were supported by John Howard, who understood the benefits in achieving the Kyoto commitment. Not only was this reduction enormously important from a climate perspective, but it also had a huge impact on biodiversity in the region.

This table demonstrates the impact of LULUCF on Australia's emissions for the Kyoto Period, as well as projections beyond 2020.

	Total Emissions	LULUCF Emissions
1990	564mt*	136mt*
2000	560mt	64mt
2005	611mt	80mt
2014	542mt	10mt
2015	560mt	23mt
2020	593mt	21mt

Sources: *Department of Environment 2030 Emissions Projections, March 2015
Department of Environment 2020 Emissions Projections, December 2015.

Queensland is the main focal point for this issue in Australia, with policy settings coming in several waves:

1999-2003:

- Premier Beattie introduced restrictions on clearing 'remnant vegetation' - intact or mature forest and bushland. Before these laws took effect, 500,000ha was released by way of ballot, along with around \$150 million in structural adjustment funding from the Commonwealth.
- This led to a spate of clearing in the interim period that saw LULUCF emissions in 2005 end up some 20mt higher than they had been in 2000 – accounting for about 40% of the overall 50mt difference in national emissions between the two years.

2009

- The Bligh Government built on the Beattie reforms by restricting the clearing of 'high value regrowth' - bushland and forest that had previously been cleared, but had been re-growing for at least 20 years in areas including wetlands, watercourse buffers and steep slopes prone to erosion. This delivered a further emissions and biodiversity benefit.

2012-2015

- While the Newman LNP Government had promised, before its election, to retain the land clearing laws, it reneged on that promise shortly after coming to office. Clearing in Queensland had been around 750,000ha in 2000 and dropped to 78,000ha by 2010.

- But by 2014, clearing had returned to 280,000ha. The Queensland Auditor-General reported that clearing in the Great Barrier Reef Catchment areas had increased from 31,000ha in 2009 to 102,000ha in 2014 (up 230%), with obvious implications for run-off onto the Reef.

2015 – Present

- Palaszczuk Government announced in November 2015 that it would be seeking to re-instate the Beattie/Bligh laws; confirming that land clearing in Queensland had doubled in just the first two years of the Newman Government (from 150,000 to 300,000ha), leading to the release of 35 million tonnes of CO₂ in 2013/14 alone.
- Legislation was introduced to the Queensland Parliament in March 2016 to that effect – this is in committee until 30 June 2016.

While Queensland has been focal point in this policy area, land clearing laws are also an issue in New South Wales, Western Australia, Victoria and the Northern Territory. Groups like ClimateWorks advise that the achievement of net zero emissions by 2050 will depend on Australia's land sector moving from a source of carbon pollution in net terms to a 'sink', a process that would need to start as soon as the 2020s and 2030s.

The reduction in land sector emissions in Queensland underpinned a substantial part of Australia's international commitments under the Kyoto Protocol. The unpicking of those reforms by the Newman Government had a direct impact on those treaty obligations the Commonwealth undertook on behalf of the nation.

This would allow the Commonwealth to regulate broad-scale land clearing to prevent a repeat of the fiasco under the last LNP Government in Queensland. Labor in Government will also explore other ways of ensuring that State land clearing laws are consistent with Australia's international obligations and commitments; including by re-invigorating COAG's National Vegetation Management Framework. In part, that will require the adoption of consistent reporting of land and tree clearing across States and the Commonwealth, in line with best practice in this area – which has traditionally been the Queensland SLATS Scheme verified by field reporting.

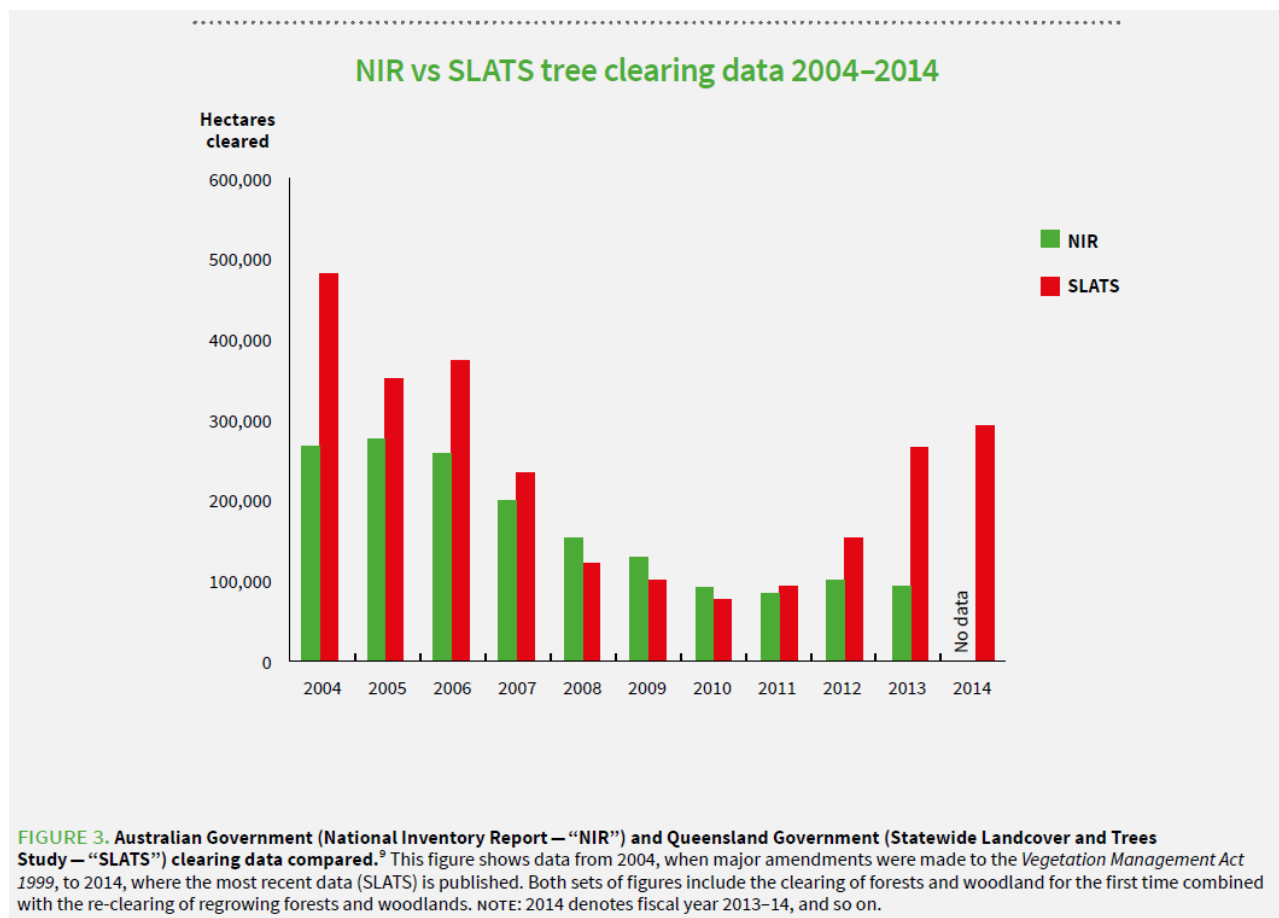
Australia's land sector emissions were around 135 million tonnes CO₂e in 1990 or around one quarter of the national total; in 2014, they were just 14 million tonnes. That huge reduction was overwhelmingly due to land clearing restrictions introduced in Queensland over time between 1999 and 2009 (some of which were supported by John Howard who understood the benefits in achieving the Kyoto commitment). Not only was this reduction enormously important from a climate perspective; it also had a huge impact on biodiversity in the region.

What will Labor do?

Labor will introduce a 'climate trigger' in federal legislation to allow the Commonwealth to regulate broad-scale land clearing to prevent a repeat of the fiasco under the last LNP Government in Queensland.

In Government, we will also explore other ways of ensuring that State land clearing laws are consistent with Australia's international obligations and commitments; including by re-invigorating COAG's National Vegetation Management Framework. We will work with State and Territory Governments to update the Framework to set clear targets for tree clearing reductions.

In part, that will require the adoption of consistent reporting of land and tree clearing across States and the Commonwealth, in line with best practice in this area – which has traditionally been the Queensland SLATS Scheme verified by field reporting.



This is in stark contrast with the Coalition who both at a Federal and State level (specifically QLD and NSW) have not taken any action to reduce land clearing.

In early 2016, Greg Hunt gave approval for ‘ecological thinning’ trials in a new national park on the Murray River. Under Mr Hunt, the Environment Department approved selective logging over five years in 44 plots within the Murray Valley National Park in NSW.

Financial Implications

2015-16	2016-17	2017-18	2018-19	Total ¹⁹
0.0	0.0	0.0	0.0	0.0

These policies will be administered from within existing resources.

¹⁹ Totals may not sum due to rounding

Increased Energy Efficiency

For Australia to build a strong economy we need to lift productivity across the board. Energy is a key input and significant, growing driver of costs in our economy. That is why we need to put in place strategies to ensure that energy - like labour, capital and other economic inputs - is used efficiently and productively.

We need to have an energy system that is secure, reliable and sustainable while also being efficient and affordable. Boosting our energy productivity helps lift our overall competitiveness. It will reduce costs for business, improve profitability of enterprise and free up capital for investment and job creation. Improving energy productivity is also key to decarbonising Australia's economy while maintaining economic growth.

Australia remains a relatively energy-intensive economy by OECD standards. Energy productivity improvements in recent years have been poor, against both OECD and G20 averages. Over the past two decades, for example, China has improved its energy productivity twice as fast as Australia. We currently sit in the bottom quartile of OECD nations on this important economic measure.

Australia's relatively poor performance has been exacerbated by large increases in energy costs in recent years – electricity in the past decade and gas more recently. Energy costs grew by two-thirds in the decade to 2011-12 – from \$72 billion to \$120 billion, which is close to the total private sector labour costs for the whole of Queensland. Over that same decade, average energy prices rose by 38%, while productivity only increased by 16%.²⁰

In December 2015, the Turnbull Government announced a weak plan to improve Australia's national energy productivity by just 40% from 2015 to 2030. Such a target would see productivity improve by less than 1% more than the 'business as usual' projections each year and see Australia slip even further behind our global competitors. President Obama, by contrast, has introduced a plan for the United States to double its energy productivity between 2010 and 2030.

An Alliance of Australian business groups and NGOs has called for Australia also to have an ambitious plan to double productivity over that period (2xEP). That Alliance includes some of Australia's most important business voices, such as the BCA, ACCI, AIG, AGL, Lend Lease and others.

What will Labor do?

Improving energy productivity can make a significant difference to improvements on overall economic productivity. Strong performance in energy productivity has multiple benefits. It reduces pollution while shrinking costs for households and business and driving growth in the national economy.

That is why Labor is committed to doubling Australia's energy productivity by 2030 (on 2010 levels) by building on the COAG Energy Council's National Energy Productivity Plan 2015-2030 and drawing on the work of the 2XEP Alliance, Local Government and other groups.

Around two-thirds of the potential improvements to energy productivity can be achieved by better use, such as:

20

http://climateworks.com.au/sites/default/files/documents/publications/climateworks_energy_productivity_report_20150310.pdf

- energy efficiency: adoption of more efficient technologies and processes
- structural change: shifts in the economy towards less energy intensive activities
- electrification: a shift to electricity for certain activities, such as electric vehicles.

Around one-third of the potential improvements to energy productivity relates to the way energy is supplied, through:

- energy distribution: reducing losses from distribution of energy to end users
- energy conversion: switching to more efficient forms of energy generation.²¹

There are three key sectors of focus for Labor in achieving these energy productivity goals:

- Vehicles standards and transport
- Cities policy
- Infrastructure.

Vehicle standards and transport

One clear way of improving energy productivity is through improving energy efficiency in our transport sector. Australia has an opportunity to reduce greenhouse gas emissions and lower fuel bills for Australian motorists by making light vehicles more efficient. (Light vehicles are defined as all road vehicles under 3.5 tonnes gross vehicle mass.) Improving the efficiency of light vehicles is one of the least costly emissions reduction options available to Australia.

Australia is now one of the very few OECD nations without mandatory vehicle emission standards. Those standards – designed to reduce pollution levels – are now in place across North America and Europe, and are driving huge change in vehicle manufacturing on a global scale. Australian motorists are now sold dirtier versions of global brands than can legally be sold in the US, Canada and Europe.

Transport accounts for 16% of Australia's emissions, 10% of which is from light vehicles. Australia has lagged behind other developed countries in setting mandatory vehicle emissions standards.

In June 2014 the Climate Change Authority released a comprehensive report on the matter. Labor will introduce standards that align with the Climate Change Authority recommendations. The proposed standard would broadly bring Australia into line with the United States, although will not be as stringent as European Union targets. This reflects the greater comparability between the Australian and the United States fleet rather than Europe.

Labor is committed to the introduction of mandatory light vehicle standards. We will reduce the emissions intensity for all light vehicles from the current 192g CO₂/km to 105g CO₂/km in 2025 through the implementation of mandatory standards. These standards will be phased-in from 2020.

The Climate Change Authority predicts that such changes would:

- save \$8,500 in fuel costs over the life of the car (Net saving of \$7000 over the life of a car)

²¹http://climateworks.com.au/sites/default/files/documents/publications/climateworks_energy_productivity_report_20150310.pdf

- increase the cost of a new car by \$1500 in 2025
- deliver fuel savings of \$830 in the first year
- reduce emissions by 59 Mt by 2030
- save Australia \$580 for each tonne of CO2 avoided.

Promoting the growth of low emissions vehicles

In addition to developing light vehicle standards, a Shorten Labor Government will put in place policies to promote and encourage the growth of low emissions vehicles such as those powered by electricity or hydrogen. These would include policies such as:

- working with the states to provide incentives such as registration fee holidays
- accelerating the development of standards to harmonise charging stations and billing methods
- reducing barriers to electric vehicle charging in homes
- coordinating efforts with State Governments, Councils, and the private sector to roll out required infrastructure in high traffic areas such as public transport park and rides, car parks, shopping centres, playgrounds and sporting venues.

Efficient transport systems

The availability of more and better data can improve the effectiveness and efficiency of our transport systems. The traffic on some road and rail networks is already centrally controlled on the basis of real-time information. These technologies are spreading into options on personal devices and are driving changes in our decisions about travel mode, time and route. Labor's National Information Policy and our cities agenda each support these objectives.

The increasing electrification of transport systems will likely have significant impacts on existing energy supply systems and infrastructure. There is significant scope for renewable electricity generation to contribute to energy productivity improvement in the passenger transport sector through renewable electricity for train networks, biofuels for farm vehicles, or distributed solar systems powering electric cars, renewable energy is central to improving efficiency, lowering costs and reducing emissions.

The Turnbull Government has a process in place to discuss the introduction of such standards. But that process is not scheduled to present even a draft plan until 2017.

Cities and built environment

A Labor Government will support policies that reduce per capita environmental impacts in our cities, including more efficient building design and public transport systems. This consideration of planning and design principles will encourage energy efficiency, and optimal use of natural resources.

A coordinated and integrated approach to urban policy development can improve the productivity, sustainability and liveability of major cities in Australia.

We support investing in active transport solutions which connect up with public transport, education and employment hubs. We also believe in supporting renewable energy including buildings and precincts that produce their own power in new developments. Increasing the resilience of our cities does more than simply prepare them for the potentially devastating effects of climate change. It also ensures they play their part in addressing the shift to a carbon-constrained economy.

Infrastructure

A Labor Government will broaden Infrastructure Australia's role, adding new assessment criteria of smart infrastructure and sustainability to increase value for public money and take action to improve the liveability of major cities.

It makes sense that projects submitted to Infrastructure Australia demonstrate sustainable infrastructure. Commercial and residential buildings alone are responsible for approximately 23% of our greenhouse gas emissions.

Labor has already announced that sustainability would be considered by new projects submitted to Infrastructure Australia under a Labor Government.

In March 2016 we announced that a Labor government would toughen assessment of proposed major infrastructure projects by Infrastructure Australia and require the incorporation of smart infrastructure technology and sustainability measures before projects qualify for Commonwealth funding.

Under current arrangements, Infrastructure Australia provides independent advice to the Commonwealth on major projects in terms of cost-benefits analysis and whether they fit in with existing infrastructure.

Financial Implications

2015-16	2016-17	2017-18	2018-19	Total ²²
0.0	0.0	0.0	0.0	0.0

These policies will be administered from within existing resources.

CASE STUDY

In the United States, price reductions in LED bulbs have transformed the economics of the industry. Adoption of standards and incentives are helping to drive up LED deployment and drive down costs. Since 2008, cost per lumen has dropped almost 90%. Current LED bulbs are up to seven times more efficient than incandescent bulbs while lasting about 25 times longer.

In 2009, fewer than 400,000 LED lights were deployed as replacements for standard household light bulbs across the U.S. But by the end of 2013, deployment had grown nearly 90 times to 34 million – almost all of these in applications that would have once used energy-intensive incandescent bulbs. By 2013 LEDs accounted for about 5% of lighting sales and 1% of total lighting installed nationally. This represents a significant foothold in the U.S. lighting market, but also an enormous opportunity for growth.

Reference -

<http://www.cleanenergyministerial.org/Portals/2/pdfs/CEM6Portal/CEM6-RT1-EnergyProductivityBackgroundMaterials.pdf>

²² Totals may not sum due to rounding