

RESEARCH BRIEF

8 December 2016

90,000 new jobs for Queensland: how strong climate action creates jobs and cuts pollution

Research commissioned by the Australian Conservation Foundation and the Australian Council of Trade Unions indicates that strong policies on climate change and energy would generate an additional 90,700 jobs across Queensland by 2030 and 214,400 jobs by 2040.

The research is based on comprehensive modelling undertaken by the National Institute of Economic and Industry Research.

Many of these jobs would be in regional areas, from Longreach to Mareeba. The myth that clean energy costs jobs is flat out wrong and peddled by those that make profit from keeping things the way they are. Right now, employment in the mining industry is falling.¹ In contrast, embracing clean energy will create new jobs, safeguard the 70,000 jobs that already rely on a healthy Great Barrier Reef and improve the lives of everyone in Queensland.

Table 1: Examples of existing projects that are consistent with strong action on climate change.

Project type	Area	Description	Stage	Investment
Renewable energy	Dalby	Darling Downs Solar Farm - 106.8MW large scale solar PV, part funded by ARENA	Securing additional funding	\$216.7 million 650 jobs
	Kidston	Kidston Solar Project - Joint 50 MW solar farm pumped hydro project, part funded by ARENA and the Queensland Government	Securing additional funding	\$126.2 million 379 jobs
	Collinsville	Collinsville Solar Power Station - 42MW solar farm, part funded by ARENA	Securing additional funding	\$95.9 million 288 Jobs
	Collinsville	Whitsunday Solar Farm - 52.8 MW solar farm, part funded by ARENA and Queensland Government	Securing additional funding	\$122.4 million 367 jobs
	Oakey	Oakey Solar Farm - 25 MW solar farm, part funded by ARENA and the	Securing additional	\$47.5 million 143 jobs

¹ Christopher Kent, RBA, [Australia's Economic Transition – State by State](#), 22 November 2016

		Queensland Government	funding	
	Longreach	Longreach Solar Farm - 15 MW solar farm, part funded by ARENA and the Queensland Government	Securing additional funding	\$28.7 million 86 jobs
	Mareeba	Mount Emerald Wind Farm - 170 MW wind farm part funded by Ergon	Under construction, full commercial use Sept 2018	\$188.7 million 155 jobs
Public transport	Brisbane	Cross River Rail - Passenger rail connection to and through Brisbane CBD	Securing funding	\$5.2 billion
	Gold Coast	Gold Coast Light Rail 2 - Light rail to Brisbane, heavy rail at Helensvale	Confirmed August 2016	\$420 million
	Beerburrum to Nambour	Rail upgrade to improve the level of service of rail to the Sunshine Coast and improve rail freight efficiency and service	Business case development	\$600-700 million
	Mount Isa – Townsville	Rail upgrade	Business case development	\$600 million
	Moreton Bay	Dual-track passenger rail line between Petrie and Kippa-Ring with six new stations	Opened Oct 2016	\$988 million
	Lawnton - Petrie	Deliver additional tracks on the Caboolture rail line	In construction	\$167.6 million
	Coomera - Helensvale	Duplicating the final section of single track on the Gold Coast line	In construction completion by late 2017	\$163 million

Queenslanders are already feeling the heat of climate change through more extreme weather events and changed rainfall patterns.² Global warming has the potential to damage communities already under the pump as the mining sector contracts at a rapid rate. Without change, Queensland could be left with ghost towns and the ghost of a reef as global warming fuels coral bleaching events and puts pressure on communities and landscapes.

Making the right choices today and backing good policies on climate change and energy would create a stronger Queensland and leave a legacy of natural beauty, fresh air and clean water for future generations.

² Department of Environment and Energy, [Climate change impacts in Queensland](#)

This research brief shows how the Queensland Government, by setting a target of 50 per cent renewable energy generation by 2030, has taken an important first step in the preservation and renewal of towns across regional Queensland – but that its continued backing of Adani’s massive Carmichael coal mine threatens the 70,000 jobs that need a healthy reef.

Queensland in flux

Missing the opportunities strong climate action presents should be unacceptable for Queensland. In May 2016 Kristy Harling, a former Rio Tinto employee, captured the challenge well in a question to politicians on ABC TV’s Q&A:

“I have lived in Central Queensland which encompasses towns such as Emerald, Blackwater & Moranbah for a number of years, working in the local mining industry. Today, we see the aftermath of the mining boom after 21,000 jobs have been lost in the region. It breaks my heart, to see local families struggling to put food on the table & to see hundreds of houses empty because of foreclosure with no one to fill them. The people of Central Queensland need help now, and are suffering due to a lack of transition planning for the region. With all of this talk of “jobs and growth”, what are your plans for the next industry in Central Queensland, to ensure it is not left littered with ghost towns?”

Kristy’s question did not just capture an isolated concern, but what is rapidly becoming a reality for many towns throughout regional Queensland and is set to get worse. In recent years, investment in the mining sector has effectively halted.³ With China transitioning to a services economy and critically away from coal as a fuel source,⁴ the decline in global demand for coal is structural rather than cyclical. A recent report by Bloomberg indicates thermal coal is now in a state of structural decline and gas will not have its promised golden age⁵ with export prices plummeting and several key projects now under threat.⁶

Queensland jobs under strong climate and energy policies

ACF’s recent collaboration with the Australian Council of Trade Unions, [Jobs in a clean energy future](#), used dynamic integrated economic modelling to show that different carbon abatement scenarios (business as usual, medium action and strong action) would have very different results for jobs in Queensland. The results are as follows:

Scenario	Description	Abatement methods	Additional Qld jobs by 2030	Additional Qld jobs by 2040
BAU	Current policy without further intervention.	Current	None	None

³ [Minutes of the Monetary Policy Meeting of the Reserve Bank Board](#), 2 February 2016

⁴ The Guardian, [China’s coal peak hailed as turning point in climate change battle](#), July 2016

⁵ Bloomberg, [New Energy Outlook 2016: Executive Summary](#), June 2016, p.2-3

⁶ ABC, [LNG boom turns to bust as falling oil price hits exports](#), July 2016

Medium	CO ₂ abatement budget of \$10 billion per annum in real terms funded by the revenue from a modest carbon price.	Increased renewable energy generation and battery storage, expanded public transport, reduced traffic congestion through strategic road investments and carbon pricing	46,900	78,000
Strong	80% reduction on 2005 carbon emission levels by 2040.	As above with additional investment in general energy efficiency and the development of biofuel or biodiesel.	90,700	214,400

Strong climate policy de-couples economic growth and climate pollution, it creates new jobs, improves industry efficiency and boosts Australia's overall economy.

Many of these jobs would be in regional areas. Many of the communities that are at present dependent on emissions-intensive industries enjoy some of the world's greatest renewable energy resources. Nurturing the renewable energy industry will be one of the keys to renewal for the environment and these communities alike.

There will be new construction jobs to build renewable energy facilities and public transport infrastructure. Engineers, electricians and crane operators will be needed, among many others. Services industries will continue to grow, meaning more jobs for accountants, chefs and other restaurant staff, mechanics, plumbers and IT specialists. More teachers, doctors and nurses will be needed in regional areas too.

But these jobs and investment in renewable energy will only come to Queensland with ambitious and consistent climate and energy policies.

Queensland energy policy

Encouragingly the Queensland Government is implementing policies that will help capitalise on the jobs potential of strong climate action. It is assessing and establishing a credible pathway for up to 50 per cent renewable energy generation by 2030 and it has committed to a target of one million solar rooftops or 3,000 megawatts of solar generation capacity by 2020.

The 50 per cent renewable energy target will help build an industry that could secure the futures of many Queensland communities.

To drive the transition and create reliable economic conditions, it will be critical the Queensland Government legislates its 2030 target and backs it up with credible, scalable policy commitments, five yearly reviews and a plan for replacing domestic fossil fuel generation.

The Queensland Government has also helped guarantee the futures of people who work in directly affected regions by offering support and assistance to workers and communities dependent on mining to transition to sustainable industries.⁷

Uncertain policy slows renewable investment

The solar sector has been considerably stunted by uncertainty over and the lowering of the national Renewable Energy Target (RET), which caused investment levels to fall to nearly half the average annual investment in renewables 2010-13 in 2014-15, with \$5-6 billion of foregone investments in total.⁸

The Newman government didn't help by withdrawing funding from key renewable energy initiatives and breaking its election promise not to repeal the 44c feed-in tariff for rooftop solar. Under the Newman government the number of systems installed fell rapidly from over 130,000 in 2012 to just over 40,000 in 2015 and has never recovered.⁹ By 2014-15 the Newman government's policies had nearly halved the number of people employed in the state's solar PV industry with thousands of jobs lost from the peak of renewable energy employment in 2011-12.¹⁰

Construction is underway

Under the current government there are positive signs.

- The Labor government has more than doubled its support for large scale solar, now pledging to support 150MW of utility scale PV, which could be enough to attract \$250 million in investment and create 761 jobs.¹¹
- This is additional support for the six projects ARENA recently confirmed funding support for in regional Queensland.¹² The six projects equate to over 300MW, which will attract \$637 million of investment and create around 1,912 jobs directly, with many more indirect jobs. Another four viable projects, which could create 846 direct jobs remain unfunded.
- A recent Clean Energy Finance Corporation (CEFC) tender process for large scale solar PV investment received more than 980 MW of proposals for Queensland, which could create up to 6,214 jobs directly, although some of these will overlap with the ARENA proposals.
- State-owned Ergon energy put out a tender for 150MW of renewable energy and received an incredible 2000MW worth of proposals.¹³ Again some of these will

⁷ Queensland Labor, [Queensland Labor State Policy Platform](#), 2015

⁸ Climate Council, [Game On: The Australian Renewable Energy Race Heats Up](#), May 2016, p.6

⁹ Clean Energy Council, Clean Energy Australia Report 2015, June 2016, p.39

¹⁰ ABS, [4631.0 - Employment in Renewable Energy Activities Australia 2014-15](#), March 2016

¹¹ Based on total investment amount for recent ARENA shortlisted projects of \$1.6 billion and jobs per million figures (3) from Tim Buckley, IEEFA, July 2016, assumes \$100,000 wage rate and 30% labor + services

¹² ARENA, [Historic day for Australian solar as 12 new plants get support](#), September 2016

¹³ ReNew Economy, [Ergon's renewable energy tender swamped by 2,000MW of proposals](#), November 2015

overlap with ARENA proposals, though the quantity here is far greater. The power purchase agreement was ultimately awarded to the 170 MW Mount Emerald wind farm, which should generate \$188.7 million of investment during construction, \$426.2 million direct and a further \$513.5 million (indirect) injected into the local Far North Queensland region's economy over its lifetime and up to 155 jobs.

The good news is large scale renewable energy projects are best suited to regional areas. ARENA's short-listed projects in Queensland were in such areas, near towns like Dalby, Baralaba, Kidston, Prosperpine, Collinsville, Oakey, Hughenden, Collinsville and Longreach.¹⁴

Solar PV could become one of the keys to Queensland's future exports too, driving a solar energy hydrogen export economy that could even rival coal and gas.¹⁵ There is an anticipated surge of demand for renewable energy in Asia and Queensland has the solar resources needed to supply it. This could be an important opportunity for communities that have become reliant on the polluting LNG industry for jobs and growth.

These opportunities listed above just relate to large scale solar PV. There are rich pockets of wind, opportunities to grow crops for biofuels (which could potentially become a major Queensland export of the future)¹⁶ and the potential growth of the domestic solar PV industry, which has the potential to create jobs wherever there are rooftops.

Stored potential

Energy storage is essential for energy security. As storage technology matures, it will eliminate the need for expensive peaking gas plants, increasing the opportunities for regional areas. A project in Kidston is converting a former gold mine into a solar farm with its own pumped hydro storage facility, using the old mine shaft.¹⁷ This ground breaking project could just be the start, with the potential for many mining communities to become renewable energy hubs.

Solar thermal will also be increasingly critical as Australia shifts towards renewable energy, providing another storage option and a dispatchable energy source. Regional Queensland has the solar resource potential to support a rich solar thermal industry.

Jobs in energy efficiency will cut Queenslanders' electricity bills

Strong policies means jobs beyond renewable energy. There would be significant growth in jobs in making our buildings use energy more efficiently. These are jobs for electricians, shade installers, carpenters, passive cooling designers and more.

¹⁴ [ARENA](#), January 2016

¹⁵ ReNew Economy, [Solar fuels could be Australia's biggest energy export](#), October 2015

¹⁶ Queensland Government, [Giant step forward for new biofuels industry in Queensland](#), March 2016

¹⁷ ReNew Economy, [No batteries required: pumped hydro for solar energy storage](#), May 2016

According to the modelling behind the *Jobs in a clean energy future* report as many as 618,000 Queensland homes could benefit from energy efficiency measures under the medium scenario and nearly 760,000 under the strong one, saving those households money on electricity bills while creating long-term stable employment.

The impact could be significant with a Climate Works report finding that energy efficiency measures in the home and in vehicles could save households \$63 million a year in Brisbane alone, reducing emission by 584,000 and 867,000 tonnes a year respectively.¹⁸

There is already a strong set of recommendations from a 2010 parliamentary review.¹⁹ This could help stimulate the growth of an energy efficiency industry and help lower income households overcome the initial cost barriers, allowing them to access the considerable financial benefits that flow from living in energy efficient housing.²⁰

Public transport driving growth up and pollution down

Public transport is another key source of clean jobs and Queensland has great potential to expand in this area.

Public transport infrastructure minimises car and commercial vehicle use and travel times and associated pollution, and helps solve congestion in cities. Encouragingly Infrastructure Australia already has some key Queensland public transport initiatives in its list of priority projects.²¹

The most recent Queensland infrastructure program also contain a number of public transport projects, acknowledging the need to develop infrastructure to help support the rapid growth of South-East Queensland and mitigate carbon emissions state-wide.²²

Project	Purpose	Stage	Potential cost
Cross River Rail	Brisbane CBD public transport capacity - Passenger rail connection to and through Brisbane CBD	Securing funding	\$5.2 billion
Gold Coast Light Railway - Stage 2	Gold Coast transport capacity - connecting existing Gold Coast light rail to Brisbane heavy rail at Helensvale, 3 new stations	Confirmed 6th August 2016	\$420 million
Beerburrum to Nambour rail upgrade	Improve the level of service of rail to the Sunshine Coast and improve rail freight efficiency and service	Business case development	\$600-700 million

¹⁸ ClimateWorks Australia, [Opportunities for low carbon growth in Brisbane](#), 2012

¹⁹ Queensland Parliament, [Energy Efficiency: Queensland First Energy Resource](#), February 2010

²⁰ QCOSS, [Queensland Parliamentary Enquiry into Energy Efficiency](#), 2009

²¹ Infrastructure Australia, [Infrastructure Priority List](#), September 2016

²² DILGP, [State Infrastructure Plan - Part B: Program](#), March 2016

Mount Isa–Townsville rail corridor upgrade	Mt Isa – Townsville rail capacity	Business case development	\$600 million
Moreton Bay Rail Link	Dual-track passenger rail line between Petrie and Kippa-Ring with six new stations	Opens 3rd October 2016	\$988 million
Caboolture rail line–Lawnton and Petrie third track	Deliver additional tracks on the Caboolture rail line between Lawnton and Petrie Stations, also providing capacity for passenger services from the new <u>Moreton Bay Rail Link</u> .	In construction	\$167.6 million
Gold Coast rail line–Coomera to Helensvale duplication	Duplicating the final section of single track on the Gold Coast line, between Coomera and Helensvale stations.	In construction completion by late 2017	\$163 million

Table 2: Upcoming public transport projects in Queensland. Sources: Infrastructure Australia QG

Projects such as the Cross River Rail project, which would be the largest transport project ever built in Queensland, demonstrate a commitment to delivering infrastructure that has the potential to improve quality of life, reduce emissions and create thousands of construction and ongoing jobs. The flow-on impacts are potentially even larger, with a project like the Cross River Rail projected to create around 100 different economic development opportunities in proximity to the rail network. These opportunities are projected to contribute more the \$70 billion to the gross state product and 84,000 ongoing jobs making the initial investment of \$5 billion a wise one economically, socially and environmentally.²³

Projects like this could just be the start. With more funding available for public transport through a federal commitment to strong action on climate change, regions and cities have a real chance to flourish with the opportunities these projects bring.

The global challenge

Under the Paris Agreement 195 nations agreed to work towards limiting the world’s temperature rise to well below 2 degrees and to continue to pursue efforts to limit the temperature rise to 1.5 degrees.²⁴

The world has responded accordingly with a shift in energy investment. More than 70 per cent of investment – over \$290 billion – in new power plants is going towards renewable energy sources. This investment, combined with the falling price of renewables, made 2015 the first year investment in renewable energy generated enough power to cover global electricity demand growth.²⁵

²³ Brisbane Times, [Cross River Rail: Massive economic benefit 'if we take right steps'](#), August 2016

²⁴ UNFCC, [Historic Paris Agreement on Climate Change](#), December 2015

²⁵ ReNew Economy, [Seven charts show new renewables outpacing rising demand for first time](#), September 2016

Unfortunately, Australia is dragging its heels. As part of the Paris Agreement, the federal government committed to reduce Australia's emissions by 26 to 28 per cent (from 2005 levels) by 2030.²⁶ Yet, the federal government's own figures show Australia's total annual greenhouse pollution grew by more than 2 million tonnes since December 2013.²⁷ Although pollution levels fell upon the introduction of the carbon price, they are back on the rise, suggesting the federal government's replacement climate policies are not working.

A recent report by Reputex found that on the current policy trajectory instead of achieving a 26 to 28 per cent decrease in carbon emissions, Australia's pollution levels are set to *increase* between now and 2030.²⁸ This trajectory has led to Australia being rated as "very poor" on the annual Climate Change Performance Index,²⁹ which ranks us the fifth worst of the world's developed countries on climate action.³⁰ The only nation to undo policy that was working to cut pollution, Australia's failure to take effective action has caused frustration in the international community. The Australian Government recently received more than 30 questions at the UN from key trading partners like China and the US on why a downwards trend has become an upwards one and how Australia plans to meet its 2030 targets.³¹

Our inaction is unacceptable given the scale of the threat – one that is fast becoming a reality, with 2015 being the warmest on record and 2016 set to be warmer still.³² If this continues severe bushfires will become more frequent, agriculture will suffer and the Great Barrier Reef, which was this year badly affected by coral bleaching and currently supports 70,000 jobs,³³ will become a ghost of its former self. The impact on livelihoods would be catastrophic.

Australia is still stuck in the dark ages on renewable energy, while the rest of the world is set to invest US\$28 trillion in renewable energy and energy efficiency by 2035.³⁴ Australia should be a renewable energy superpower. Instead we are missing the chance to create thousands of new jobs.

The right choices for Queensland

The Queensland Government needs to make the right choices for Queensland. It needs to make choices that don't kill reef jobs and don't keep Queensland stuck in the jobs of last century – jobs that are making people sick and will end suddenly as the world moves away from coal.

²⁶ Climate Transparency, [Brown to Green: G20 Transition to a Low Carbon Economy - Australia](#), August 2016, p.4

²⁷ Department of the Environment, [Quarterly Update of Australia's National Greenhouse Gas Inventory: December 2015](#), p.34, May 2016. CO₂-e is CO₂ equivalence of emitted gases.
<https://www.environment.gov.au/climate-change/greenhouse-gas-measurement>

²⁸ Reputex, [Framing Australia's 2030 Energy and Climate Policy Mix](#), September 2016, p.4

²⁹ CAN Europe, [Climate Change Performance Index Results 2017](#), November 2016, p.13

³⁰ The Guardian, [Australia ranked among worst developed countries for climate change action](#), November 2016

³¹ UNFCCC, [Session SB145 \(2016\)](#), October 2016

³² NASA, [Climate Trends Continue to Break Records](#), July 2016

³³ Deloitte Access Economics, [Economic Contribution of the Great Barrier Reef](#), March 2016

³⁴ BZE, [Renewable Energy Superpower](#), October 2015, p.VI

For our communities and for our future, it's time the Queensland government to detach itself from the polluting and declining energy sources of the past and the certain job losses that come with it, and choose a jobs rich clean energy future.

The Queensland Government recently designated Adani's Carmichael coal mine as 'critical infrastructure' in a bid to fast track approvals for the largest coal mine ever proposed in Australia. If a first mine is built – bringing rail, power, water and other infrastructure – it potentially unlocks up to nine other coal mining projects proposed for the Galilee Basin.

Considering the size of this mine, any positive action to address Queensland's contribution to climate pollution through the growth of renewable energy, public transport and energy efficiency will be undermined by the damage done by the coal mining and the pollution from the coal when it is burnt in Australia or overseas.

This puts at risk the Great Barrier Reef and the 70,000 jobs that rely on the reef's ongoing health. It is a sad reality that new coal mines will kill tourism jobs. Queensland can't have both.

The Reserve Bank of Australia recently credited Queensland's tourism sector with cushioning the state's transition away from mining. There weren't as many job losses as occurred in the other 'mining boom' state of Western Australia.³⁵ Queensland's tourism is largely based on its natural beauty. Anything that threatens tourism in Queensland threatens the economic health of the state.

Conclusion

Strong action on climate change isn't a threat to jobs and growth, it's the future of jobs and growth and the future of communities throughout Queensland.

On one hand the Queensland Government understands this and is making investments now that will yield good, sustainable jobs in the future, breathing life into communities and our rich natural heritage in the same stroke.

On the other hand, the Queensland Government's ongoing promotion of new coal mines undermines opportunities in renewable energy and other sectors and undercuts the huge Queensland tourism industry, which relies on a healthy environment.

³⁵ Christopher Kent, RBA, [Australia's Economic Transition – State by State](#), November 22 2016