



# A technology-led plan without a destination

Submission by the Australian Council of Trade Unions on  
Australia's Technology Investment Roadmap: discussion paper

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## About the ACTU

Since its formation in 1927, the ACTU has been the peak trade union body in Australia. The ACTU consists of affiliated unions and State and regional trades and labour councils. There are currently 43 ACTU affiliates. They have approximately 1.8 million members who are engaged across a broad spectrum of industries and occupations in the public and private sector.

## Introduction

The ACTU and Australian unions have been engaged in Australia's climate and energy policy settings for over 3 decades. Our consistent position has been that Australia needs ambitious and coherent climate and energy policy to limit the impacts of global warming, and that we also need industry planning, support and resources to ensure that no workers or communities are left behind as we make the shift to net zero emissions.

In March 2020, the ACTU Executive, meeting in bushfire-affected southern NSW, reiterated:

*"The international community, through the Paris Agreement, has committed to limiting the rise in temperatures to below 2°C above preindustrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees.*

*The best scientific evidence is that the world needs to achieve net zero emissions by 2050 to meet the climate goals of the Paris Agreement, to which Australia is and should remain a signatory.*

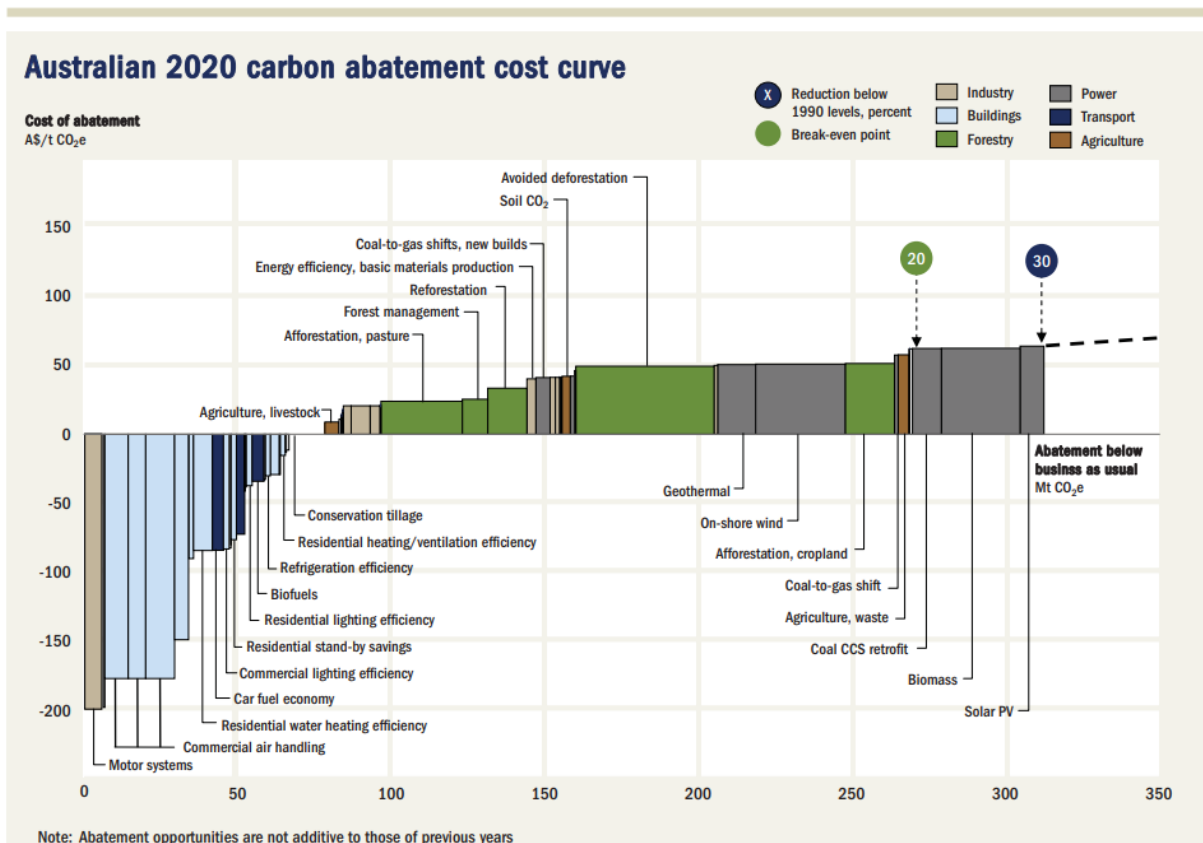
*The ACTU supports a national target of net zero emissions by 2050, and shorter term targets consistent with that trajectory, to ensure Australia meets its obligations under the Paris Agreement.*

*Government and corporations must ensure secure jobs and industry policy are placed at the heart of successful planning and implementation. As a nation we must ensure we deliver justice & employment opportunities for impacted workers, their families and the communities in which they live."*

Inherent in this statement is an understanding that successful efforts to cut emissions are not just about technology costs and pathways. Other essential ingredients include industry policy, training and workforce development, legislation and standards, price signals and incentives, cultural norms, and perhaps most importantly, government leadership.

Australian unions therefore approach this latest Technology Roadmap with some apprehension, given the persistent absence of a coherent framework for climate and energy policy. While the document may be a Roadmap for technology development it has no clear objective or destination and lacks the urgency that would make it consistent with the Paris Agreement objectives of limiting warming to less than 2°C or to 1.5°C.

A carbon abatement cost curve for Australia was developed as part of the Garnaut Climate Change Review as early as 2008 (see below). One of the key recommendations of this work was that a carbon price or emissions trading scheme would be required to deploy technologies that had an abatement cost greater than zero, and that regulation would be the best tool to accelerate energy efficiency and productivity measures that have a negative abatement cost.



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Given that Coalition parties have spent a decade opposing any form of carbon pricing (unless it is paid for by taxpayers eg Emissions Reduction Fund), or regulation, the Technology Roadmap risks being regarded as the latest attempt to craft a climate policy that is acceptable to a Coalition party room hostile to climate action<sup>2</sup>.

Despite this strong sense of déjà vu, the ACTU is committed to contributing to the development of a coherent Australian climate and energy policy so below we provide feedback on the key questions posed in the Discussion Paper:

**a) challenges, global trends and competitive advantages we should consider in setting Australia's technology priorities**

Key challenges that need to be addressed include:

- 1) **Transmission modernisation:** Our electricity grid was built to support highly centralized thermal generation, and now needs to be reconfigured for low emissions technologies. While low emissions technologies like wind and solar may be the lowest cost forms of new generation, AEMO has identified that significant investment in transmission upgrades is needed to facilitate new connections of renewable energy projects and to maintain energy security. Public ownership of much of the transmission system makes it possible for

<sup>1</sup> McKinsey and Co, An Australian Cost Curve for Greenhouse Gas Reduction, 2008

<sup>2</sup> Previous policies have included the Clean Energy Target and the National Energy Guarantee, both opposed by the Coalition party room.

government to accelerate and lead investment in upgrades and extensions of the transmission system.

- 2) **Planning the energy transition to protect the livelihoods of workers and communities:** The blinkered technology focus of the Roadmap fails to consider the impacts of technology adoption on workers and communities. If not managed carefully the exit of fossil fuel generation and energy supply and associated jobs losses could impose significant social costs for workers and their communities, and social services more generally. The Federal Government needs to join with the 46 countries globally who have committed to developing a Just Transition plan as part of its commitment under the Paris Agreement<sup>3</sup>. This will be an essential element of the government's upcoming long-term emissions reduction strategy. The issue needs immediate attention however with forthcoming power station closures at Liddell, Muja C and Torrens Island. A key demand of affected workers and unions is for there to be no forced redundancies at retiring power stations, with the opportunity for workers to be redeployed to other sites, support for any retraining required, and government and company investment in economic diversification of communities affected by closures. The Government's technology roadmap will hit significant roadblocks in terms of community support if attention is not paid to the social dimensions and impacts of the energy transition. Similarly, new technologies that are replacing emissions-intensive plant need to demonstrate that they have social licence, can manage their environmental and social impacts, and will deliver good jobs with decent conditions and economic benefits for host communities.
- 3) **Accelerating deployment of cost-neutral and cost-negative technologies:** Figure 4 in the Discussion Paper identifies a number of technologies that can be implemented at zero or negative cost including passive design in building construction, heat recovery and heat pumps in industrial and residential settings and plug-in hybrid electric vehicles. In all but the last of these examples the technologies are reasonably mature. The main barriers to greater uptake are higher upfront costs, split incentives between landlords and tenants and the lack of regulatory measures or a carbon price to drive greater utilization. Heat pumps for instance could be most effectively supported through building regulations and accompanying apprenticeship and training programs for plumbers and electricians to ensure the industry can support greater uptake.

Accelerating the uptake of energy efficiency and productivity retrofits would create work in plant upgrades, reduce energy bills and reduce emissions. There is no technology barrier to undertaking this work in most business sectors. Rather, there is an absence of a trigger for an investment decision by management. Previous government programs like the Energy Efficiency Opportunities program (introduced by the Coalition in 2006) required large energy users to undertake energy audits and implement measures that had a short payback time. This program was highly successful in saving large energy users money and energy, and reducing emissions. The program was cut once a price on carbon was introduced to reduce duplication of regulations, however with no carbon price in place there is a strong argument for reintroducing energy efficiency targets or incentives for large energy users. New drivers for industrial and commercial energy efficiency should be a priority of the Technology Roadmap and COVID recovery and subsequent policy development and investment.

- 4) **Built environment challenges and opportunities:** The Discussion Paper lists zero emissions buildings as a 'medium term' opportunity through to 2030. Given that most buildings built

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<sup>3</sup> Just Transition Pledge UN Climate Action Summit 2019

in the next decade will still be operating in 2050 this is a missed opportunity. We need to accelerate the achievement of zero emissions building standards and already have the technology and know-how to build zero emissions buildings. We now need mass deployment of zero emissions buildings through increasing building standards and providing skills and training programs for architects and designers, builders, carpenters, electrician, plumbers and other trades involved in building construction. This should include reinvigorating apprenticeship programs and increasing experience in and exposure to zero emissions buildings for workers in the industry.

5) **Manufacturing:** The Discussion Paper states that:

*“By the 2030s, Australia may have realised a competitive advantage in energy intensive manufacturing by capitalising on its low-cost renewable capacity and harnessing carbon capture, use and storage (CCUS). This will be achieved by having low-cost renewable capacity matching industrial energy demand by 2030.”*

Setting a target for achieving low emissions manufacturing in the 2030’s will be akin to shutting the gate after the horse has bolted. Without immediate action to guarantee a predictable trajectory of falling emissions, Australian metals manufacturing and fabrication industries risk continued decline and will be extremely difficult to re-establish. All 4 of Australia’s aluminium smelters for instance are currently under review (there were 6 smelters operating until 5 years ago), partly as a result of growing international demand for aluminium produced with renewable energy and partly as a result of energy security concerns and electricity price fluctuations.

**Table 1: Australia’s remaining aluminium smelters as at January 2020.**

Smelter location	Company	Production	Number of jobs
Boyne Smelters, Gladstone, Qld	Boyne Smelters Ltd, managed by majority owner (59%) Rio Tinto	570,000 tonnes/year	1050 direct, 120 contractors
Portland smelter, Portland, Vic	Alcoa	358,000 tonnes/year	460 direct, 120 contractors
Tomago smelter, Newcastle, NSW	Majority owned by Rio Tinto (51%)	585,000 tonnes/year	950 direct, 190 contractors
Bell Bay, Tasmania	Rio Tinto 100% owners	190,000 tonnes/year	440 direct, 60 contractors

The absence of a credible emissions or energy policy nationally jeopardises the future of all of these smelters and many other manufacturing and processing businesses. These and other asset owners will need much more immediate steps to match their energy usage profiles with declining emissions sources in order to continue operations and remain internationally competitive. If we lose these manufacturers it will be very difficult to entice them back. While the confidence in hydrogen and low emissions manufacturing in the Roadmap is welcome, it cannot be a ‘future vision’- we need immediate action and policy support to expand and futureproof our existing manufacturing base and the jobs these industries support. Australia may well have a competitive advantage in renewable energy powered mining, metals processing and manufacturing, but it will not be realised if we have to start rebuilding our manufacturing industries from scratch.

## **b) the short-list of technologies Australia could prioritise for achieving scale in deployment through its technology investments**

Most of the technologies shortlisted are viable and could help achieve greater emissions reductions and improve Australia's competitiveness, though some are unproven at scale and very high cost. In many cases the technologies are already mature. Again, what is preventing their greater adoption is the lack of an overarching net zero emissions objective, the lack of government leadership or ambition on emissions reduction, the lack of education, skills, training and apprenticeship programs to accelerate uptake, the lack of policy and regulation to drive low emissions technology adoption, and the lack of support and assistance for communities impacted by the energy transition.

Onshore and offshore wind are at significantly different stages of technology maturity and deployment and should be treated as two distinct technologies requiring different policy approaches.

The Discussion paper's transport focus is largely confined to vehicle transport. Greater consideration needs to be given to low emissions and zero emissions shipping and aviation.

## **c) goals for leveraging private investment**

Private investment will follow clear government direction and objective setting, policy and regulations and tax incentives or subsidies for low emissions technologies and disincentives for polluting technologies. Critical to achieving private investment will be greater stability and bipartisanship in government policy and attitudes on climate change. Frankly every time a government backbencher questions the need for leadership on climate change and threatens to destabilise the Coalition unless ambition is abandoned the case for private investment and leadership is diminished.

However it is important not to forget the role of government and public sector investment in deploying low emissions technologies and supporting infrastructure such as transmission upgrades. Government procurement and investment in emerging energy technologies can accelerate deployment, set standards for new industries, improve outcomes for consumers, strengthen energy security and provide stability in the market.

## **d) what broader issues, including infrastructure, skills, regulation or, planning, need to be worked through to enable Australia to adopt priority technologies at scale while maintaining local community support?**

This is a broad question, but we will confine our response to 2 areas.

### **1) Industries impacted by the energy transition**

Firstly, as new low emissions technologies are adopted, emissions intensive industries will decline, with the associated loss of regional jobs and economic activity. This is entirely predictable and it is critical that government acts to support workers and communities impacted by the energy transition. At a minimum Australia needs a Just Transition Authority or Energy Transition Authority to undertake planning, invest in reskilling, retraining and redeploying workers, and invest in diversifying the economies of impacted communities. Germany has managed to phase out its hard coal mines without a single forced redundancy as a result of significant government planning, investment and institutional support over a period of 2 decades.

Clearly Australia's energy transition is going to have the greatest impact on the workers, family members and communities that are employed in or are host to Australia's remaining 18 coal-fired power stations. While the Morrison Government has consistently decried the loss of coal industry jobs it has done nothing to support these communities affected by the energy transition.

Key elements necessary for the orderly closure of power stations and a just transition for workers and the community include but are not limited to:

- A commitment to **no forced redundancies** by the power station's operators. Ideally this is coupled with a pooled voluntary redundancy scheme with nearby generators, where older workers at non-closing power stations can nominate for voluntary redundancy and make way for younger workers from the closing power station. A limited pooled redundancy scheme was funded for Hazelwood's closure though it significantly underachieved its target of redeploying 150 workers.
- **Lengthy and enforceable notice periods** announcing future intention to close, for example AGL's 5 years notice at Liddell, which provides lead time to build replacement generation and plan orderly closure and redeployment and training of the workforce.
- **Comprehensive and funded mine and power station site rehabilitation plans** which can provide a significant source of employment. The rehabilitation of Hazelwood mine for instance is expected to take a decade and is employing around 200 contractors.
- **Funding and support** to retrain power station workers
- **Funding and support to diversify the regional economies of coal regions**, through public investments in new infrastructure, education facilities, relocation of government services, training programs and industry development policy.
- **Value the work of female-dominated industries.** Many emissions intensive industries are male-dominated. Therefore, fossil fuel economy workers are often the primary or sole income-earner in their household. Better valuing the work of workers in female-dominated industries through higher wages and better conditions would reduce the impact of fossil-fuel plant closures on households and communities.

Beyond the power generation sector, COVID-19 has highlighted how fragile the Australian oil refining and distribution system is even disregarding potential technological transition impacts on the market. There is a need to build a secure bridge in the refining sector so that Australia retains and builds the skills necessary to be able to produce and export renewable liquid fuels at scale. As such, key regulatory changes in the refining sector are needed including;

- a) Phasing in a minimum target for domestic oil refining domestically as a share of the national demand for petroleum, diesel and aviation. This would ensure fuel security and support jobs through changing energy technologies and demand. The domestic oil refining target should be set so as to secure the future of existing refining facilities and such a target should be scaled up as overall national demand decreases over time.
- b) Government support to build a renewable hydrogen production and refining industry with good jobs that helps to provide cheap energy domestically and a potential export market for Australia. This should include a guarantee that domestic demand for renewable hydrogen is produced and refined here.

## 2) **Building new energy industries on solid foundations**

Secondly, as new low emissions technologies are deployed there needs to be attention paid to ensuring that these industries are being built on solid foundations with good outcomes for workers and host communities in order to maintain social licence for continued (and increased) operations. Renewable energy projects, for instance, have often paid more attention to keeping neighbours happy about the visual impacts of projects than ensuring that the projects have sound labour agreements with good working conditions for employees. New technologies like renewable energy, hydrogen or energy efficiency need to be paying Enterprise Agreement wages, negotiated fairly and transparently with workers and their unions which provide for ongoing and permanent jobs, eschewing the use of labour hire and casual hiring arrangements, and investing in training and apprenticeships and local and inclusive hiring practices. Such behaviours will ensure these industries are embraced by host communities and reach their full potential.

Australian unions are keen to help establish sustainable and productive labour practices to give low emissions technologies the best chance of widespread adoption and community support.

### **Three broader comments on the Roadmap**

There are 3 final comments we wish to make about the Discussion Paper.

Firstly, with its strong focus on technology the Roadmap risks fetishising the new rather than acknowledging that we already have many of the technologies we need to reduce emissions. What we are lacking is political will, enduring and credible policy, leadership, investment in education, skills and training, and investment in communities to ensure there is deep and sustained community support for action on climate change. Technology will not save the day, rather it will be leaders of business, workers and communities, consulting broadly, and making timely and informed decisions, about technology investment and deployment that will enable us to limit the most damaging impacts of global warming.

Secondly, while the discussion paper is extremely enthusiastic about technology, it is much quieter on the important roles of science and research and development. Successful technology development and deployment requires public investment in science and R&D. Australian science organisations like CSIRO, BOM and others have suffered significant budgetary cuts in recent times, and Australia's higher education research sector is in crisis as a result of COVID-19 and the sector's exclusion from the Jobkeeper program. If the Federal Government wants to pin its hopes on technology led climate solutions it needs to rethink its approach to funding science and R&D. The current proposals to reduce R&D funding and their tax treatment must be reversed if we are to encourage technology roadmap investment and deployment.

Thirdly at a time of major economic disruption it will be critical that government aligns its effort to reduce emissions and encourage economic recovery. There is a strong case for economic recovery efforts to focus on encouraging deployment of technologies that have a zero or negative abatement cost, such as energy efficiency and productivity. Investments, incentives or regulation to encourage industrial, commercial and residential energy efficiency will be 'no regrets' measures that will pay off the initial investment many times over and free up household and business expenditure to support other economic activity. There is a risk that both the 'Technology Roadmap' and COVID recovery focus solely on male-dominated industries such as construction and energy generation. Adding a social lens to emissions reduction and economic recovery thinking would see a more inclusive approach, and greater investment or focus on creating secure jobs in industries with a greater share of women.

Finally the ACTU and Australian unions would appreciate being engaged in future steps of Australia's climate policy development. We note that many sectors have been consulted in the development of the Technology Roadmap Discussion Paper, but unions and working people's views have been missing so far.



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