

A supercharged Australia: The Economic, Workforce and Environmental Benefits of Australian Electric Vehicle Manufacturing

ACTU submission to the Select Committee on Electric Vehicles

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Introduction

The Australian Council of Trade Unions (ACTU) welcomes the opportunity to make a submission to this inquiry. The ACTU is the peak body for Australian unions and represents the 1.6 million union members Australia wide. As the voice of workers, the ACTU believes that this inquiry comes at a crucial time for Australia. The manufacture of electric vehicles (EV) in Australia represents a significant opportunity for Australian workers, the Australian economy and our environment. We hope that this inquiry will be the first step, taken at a federal level, towards grasping that opportunity.

Australia was first referred to as ‘the lucky country’ in 1964. However, modern usage aside, at the time author Donald Horne wasn’t attempting to pay us a compliment. He believed that Australia was ‘lucky’ because we, in essence, managed to succeed despite ourselves. Horne regarded our political and economic leadership as largely second-rate, though he did acknowledge the adaptability of the average Australian, and said that we had achieved the prosperity we had at that point through a combination of luck and historical accident. While we may not agree that Horne’s assertion has been broadly true throughout Australia’s history, it is certainly the case that conservative governments in Australia appear to have preferred to trust to luck than to take concrete steps to secure Australia’s prosperity. From the squandering of the benefits of the mining boom and the demise of the Australian car industry through to our inaction on climate change and renewable energy, the complacency of Coalition federal governments has seen Australia miss out on significant opportunities in the past. The outcome of this inquiry must be that this does not occur again. We need a government of vision with a real plan for moving our economy and workforce into the future.

Electric vehicles are a revolution that we have been able to see coming for a long time. It may have been premature for Australia to build an industry around electric vehicles and associated technologies ten years ago, but electric cars are now on the roads in world capitals and are spreading to Australia. Electric freight transport is firmly a reality. Electric vehicle manufacture is an opportunity to produce thousands of jobs, build economic strength in regional areas and reduce our emissions in one move. If Australia allows, through inaction, another country to become the Electric vehicle manufacturing hub of the pacific it will represent three lost opportunities: an economic opportunity, a workforce opportunity and an environmental opportunity.

This submission will explore these three opportunities and outline why the ACTU believes that Australia must seize them. Australia can and should become a regional centre of electric vehicle manufacture. The ACTU also supports and commends to the committee the submissions provided by our affiliated unions.

The Economic Benefits of EV Manufacture in Australia

The creation of an electric vehicle manufacturing industry in Australia, along with the creation of incentives to increase their use by the general population, would represent a significant economic benefit for Australia.

In the first instance, the broader economy would see benefits both in terms of increased employment, investment flows and spending within the economy. A truly national EV manufacturing industry would stimulate interstate commerce and could provide significant export revenue. Australia is particularly well positioned to take advantage of other growing right-hand-drive markets in our local region, such as India, as well as the possibility of production of left-hand-drive vehicles purely for export. While other countries in the region, China, India and to a lesser extent Korea, dominate manufacture of conventional vehicles, Australia is in a unique position to capitalise on our educated and skilled workforce to move into advanced manufacturing of electric vehicles and the batteries that power them.

In fact, a Victorian Parliament inquiry has already recommended, purely considering the benefit to Victoria's economy, the creation of a niche electric vehicle manufacturing capability and a capability to mass-produce the battery components of electric vehicles in Victoria. The Victorian Department of Transport has estimated that electric vehicles could bring as much as \$23.4 billion in benefit to Victoria over 30 years.¹ With Federal Government action and coordination, it would surely be possible to create a national electrical vehicle manufacturing industry which would deliver significant direct economic benefits far in excess of this figure.

There would also be indirect economic benefits with increased use of electric vehicles within the community. A significant infrastructure program would be required to install charging stations both in urban and regional areas, as well as a likely increase in the number of residential charging and battery storage technology. Indeed, some states are already beginning, in isolation, to capitalise on these opportunities, with QLD building a network of road-side charging stations throughout its freeway network² and jurisdictions in South Australia and Tasmania signing MOUs to encourage the greater use of EV within their communities.

Perhaps the most significant element of the economic benefit that could be derived from the creation of a domestic EV manufacturing capability is that it could be effectively targeted to regional areas that have experienced economic downturns. EV manufacturing could be centred in precisely the communities and area, such as Elizabeth in SA and Geelong in Victoria, that have been most affected by the destruction of the Australian car industry. The return of vehicle production to these areas would revitalise these communities, bringing jobs, allowing families to escape and poverty and would encourage the engagement of young people with education and training. These workforce and social benefits will be explored in more detail in a later section.

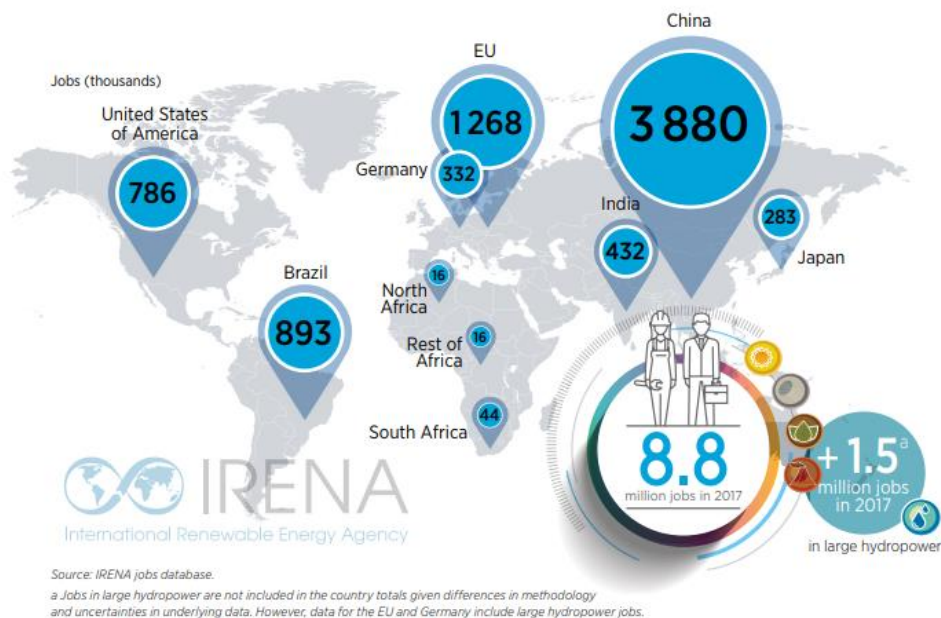
Finally, Australia's entry into the EV and battery manufacturing industry would also allow our economy to take part in the rapidly-expanding global renewable energy market. Globally, the

¹ Parliament of Victoria, *Inquiry in Electric Vehicles*, Economy and Infrastructure Committee, 2018, pp. 3

² Queensland Government, *Queensland's electric super highway fully charged*, January 31, 2018.
<http://statements.qld.gov.au/Statement/2018/1/31/queenslands-electric-super-highway-fully-charged>

renewable energy industry employs more than 10 million workers, more than one-third of them in China. While this is a relatively small number worldwide, employment in the industry is, at last count, growing at 5.3% on a year to year basis. This growth is also rapidly accelerating, increasing 150% since 2012.³ Last year new investment in renewables worldwide exceeded \$200 billion (US), bringing the total investment in the industry since 2004 to more than \$2.9 trillion (US).⁴ Once again, China accounted for more than half of all new investment in renewable energy in 2017. Australia meanwhile, is a minnow, even accounting for our relative size. In 2017 only 22,000 Australians were employed in renewable energy industries, a far lower proportion of global employment than a developed country our size should have represented. In fact, Australia's contribution to the global renewable energy economy is so insignificant that this graphic showing the number of jobs involved in the field in various countries, published by the International Renewable Energy Agency, completely obscures our continent with an unrelated graphic.

FIGURE 8: RENEWABLE ENERGY EMPLOYMENT IN SELECTED COUNTRIES



Source: International Renewable Energy Agency, *Renewable Energy and Jobs Annual Review 2018*

Investment in battery storage technology, EV manufacture and charging infrastructure would allow Australia to tap into this global market for renewable technology, services and workers. The Climate Council believes that the creation of a domestic EV manufacturing industry would have significant flow-on effects into the Australian solar, battery storage and related industries⁵ – fields in which Australia currently enjoys a competitive advantage but where our current investment level is low. The battery manufacturing and service capacity associated with EV

³ International Renewable Energy Agency, *Renewable Energy and Jobs Annual Review 2018*, 2018. [Link](#)

⁴ Frankfurt School, *Global Trends in Renewable Energy Investment Report 2018*, 2018 <http://fs-unep-centre.org/publications/global-trends-renewable-energy-investment-report-2018>

⁵ The Climate Council, *Powerful Potential: Battery Storage for Renewable Energy and Electric Cars*, 2015 <https://www.climatecouncil.org.au/uploads/ebdfcdf89a6ce85c4c19a5f6a78989d7.pdf>

production would also benefit other industries and projects such as the manufacture of new submarines in South Australia which is expected to involve battery technology.

In short, the creation of a domestic EV production industry would bring significant benefits to the Australian economy, acting as a stimulus through infrastructure investment and helping to revitalise areas affected by economic downturns. It would place Australia at the centre, at least in our region, of a growing high-tech manufacturing industry and put us in a good position to access the burgeoning global renewable energy technology market.

Economic Recommendations

- The federal government should put in place incentives and other supports to encourage the creation of a EV manufacturing industry in Australia, aimed specifically (but not exclusively) at previous vehicle manufacturing centres such as Elizabeth, SA. Any incentives would need to be closely monitored and tied to production of EVs to ensure that it is not misappropriated.
- Introduce incentives and reduce barriers to use of electric vehicles domestically to create local demand.⁶

The Workforce Benefits of EV manufacture in Australia

While the section above focussed solely on the economic benefits to Australia, which would include the creation of a significant number of jobs, this section will explore the workforce opportunity that EV manufacturing represents – the opportunity to partially undo a modern day political policy disaster. A great injustice was done to thousands of Australian workers when, in October 2017, Australia’s car manufacturing industry was allowed to die. Prior to the election of the Abbott government in 2013, support for the car industry had been bipartisan – the industry provided thousands of jobs and represented an important strategic capacity. Government support to industry was significant, but was more than returned in export value, domestic employment and the prosperity that the industry brought into its local communities. This was all brought to a halt when the Abbott government decided to end all government support of the industry, resulting in the closures of the Holden, Ford and Toyota manufacturing facilities across Victoria and South Australia, as well as job losses in parts suppliers. Some estimates are that the decision to allow the car industry to die will end up costing more than 50,000 jobs across Australia.⁷

As outlined in an earlier ACTU policy paper, *Sharing the challenges and opportunities of a clean energy economy*, Australia has historically failed at large scale structural adjustments, often leaving 1/3 of displaced workers in insecure work and allowing an additional 1/3 to languish in unemployment for the remainder of their working lives.⁸ While there has been little statistical

⁶ An example of such might be a requirement that domestic dwellings have access to sufficient 3-phase power connections to charge an electric car. Many Australian dwellings, strata properties particularly, have no such access.

⁷ News.Com.au, *Counting the Cost of Killing Australia’s Car Industry*, 2017.

<https://www.news.com.au/technology/innovation/motoring/counting-the-cost-of-killing-australias-car-industry/news-story/cb10862b3405a9b26ce9f4541bbdbc08>

⁸ Australian Council of Trade Unions, *Sharing the challenges and opportunities of a clean energy economy*, 2016 <https://www.actu.org.au/media/1032953/actu-policy-discussion-paper-a-just-transition-for-coal-fired-electricity-sector-workers-and-communities.pdf>

study of the experiences of workers who lost their jobs as part of the end of the car industry, there is no reason to believe they have fared any better than workers who experienced earlier periods of large industrial change. EV manufacture represents an opportunity to undo this damage. With federal government support and the coordination of a Transition Agency, car industry workers could be effectively retrained for EV manufacture, while parts manufacturers could be incentivised to re-tool to focus on battery technology and parts for electric vehicles. Through this process, workers who have been left unemployed by the end of car industry can once again find gainful employment where they can utilise their skills. This not only returns these workers to work, directly benefiting them and their family, but it is also of great value to their communities. Some investors, such as Sanjeev Gupta, have already expressed an interest in converting existing car production facilities into EV manufacturing facilities.⁹ With government support of the industry and the coordinated provision of a trained workforce, there would likely be much more interest in such projects in future.

The training of qualified workers in this field must be a priority. While small, there is already a growing electric conversions industry in Australia and it is integral that this work is done by trained and qualified workers to ensure that it is done safely.¹⁰ Building a qualified and effective EV production workforce would also serve to provide safe and qualified workers to industries like EV conversions and battery production. One outcome of a training program in this area could be that future large-scale battery installations would not have to rely on components being flown in from anti-union foreign businesses but would instead be manufactured and installed by Australian workers. However there exists a barrier to this taking place - the VET and TAFE systems have been allowed to fall into disrepair by successive conservative governments. For example, The TAFE sector lost one-sixth of its financing in 2016, with operating revenues falling 16.8 per cent to \$8.14 billion and overall government funding for the sector has plunged 23 per cent since 2012.¹¹ Since 2005, government real recurrent expenditure per annual hour has declined 31.5 per cent.¹² Since 2007, government real recurrent expenditure on VET has decreased 1.6% while the number of government-funded annual hours (course mix adjusted) has increased 16.0. This has been accompanied by a significant loss in teaching staff, with more than 7,000 TAFE teachers leaving the profession since 2013 in NSW and VIC alone.¹³ Now overrun by private providers, it is often difficult for workers to be sure they will receive quality training and for employers to be sure that workers will have the skills they need. Apprenticeships have also experienced a significant decrease – there were 413,000 apprentices in training in September 2013 while in June 2017 there were just 268,600. This is because apprenticeships have also been under attack, with costs shifted to apprentices and the rising incidence of poor-quality and poor-outcome ‘institutional delivery’. If we are to re-train our car industry workforce for EV

⁹ Australian Financial Review, *Billionaire Sanjeev Gupta links with Gordon Murray Design for electric car tilt*, January 2018. <https://www.afr.com/business/energy/billionaire-sanjeev-gupta-links-with-gordon-murray-design-for-electric-car-tilt-20180121-h0lxc7>

¹⁰ ABC News, *Electric vehicle enthusiasts convert their own petrol cars, but engineers warn of the risks of retrofitting*, 24 July 2018. <http://www.abc.net.au/news/2018-07-24/make-your-own-electric-car/9918964>

¹¹ Australian Education Union, *Rebuilding Australia's TAFE system*, February 2018. <https://aeutas.org.au/rebuilding-australias-tafe-system-aeu-federal/>

¹² Ibid

¹³ The Age, *Where are the Students? TAFE enrolments drop by up to 40%*, May 2017. <https://www.theage.com.au/national/victoria/where-are-the-students-tafe-enrolments-drop-by-up-to-40-per-cent-20170527-gwekq2.html>

production, as well produce workers who can work in related industries, our VET system must be able to deliver high quality education at affordable prices – a situation that is not currently the reality in many areas of Australia.

EV production, in addition to its significant economic benefits, represents an opportunity to bring thousands of skilled jobs back to areas of Australia that have suffered greatly from the ending of the Australian car industry. Allowing this opportunity to go unexploited would be yet another betrayal of these workers and their communities.

Workforce Recommendations

- Establish a Transition Agency, as called for in *Sharing the challenges and opportunities of a clean energy economy*, to manage and coordinate the training and upskilling of a national EV production workforce, focussed on areas with a car production history.
- Rebuild the TAFE system, end the dominance of the VET system by poor quality private providers and stop attacks on the apprentice model. Ensure that high quality training for EV production and renewable energy jobs are available to workers at a reasonable cost.

The Environmental Benefits of EV Manufacture in Australia

In addition to the economic and workforce benefits outlined above, the increased use of electric vehicles within the Australian community would have significant environmental benefits. It is estimated that transport contributes around 14.6 per cent of Australia's total greenhouse gas emissions¹⁴, with passenger vehicles being the primary source of those emissions. The transition to greater use of electric cars will play an important role in reducing transport-related greenhouse gas emissions. There are also significant air-quality and, subsequently, public health benefits from electric vehicles – as petrol-driven vehicles release not only significant amounts of carbon but also harmful chemicals such as carbon monoxide and other carcinogens that are not present when electrical vehicles are used. The ACTU notes that there have been some attempts to claim that due to fossil-fuel based power generation, that electric vehicles are as polluting, if not more, than petrol driven vehicles. Critics often point to the environmental impact of lithium mining as another environmental consideration. Firstly, it should be remembered that the batteries installed in EV are recyclable – so the impact of battery production cannot be properly fully apportioned to each vehicle. The criticism of the environmental impact of power generation is more valid. In state where coal is used to deliver the majority of power, electricity generation does have a significant environmental impact. It should be pointed out that in all states, electricity consumers currently have the ability to choose to purchase 'green power', which has no associated CO₂ emission. This aside, this issue is an excellent argument for the further investment in renewable energy technologies and the implementation of a Just Transition strategy for the Australian electricity to ensure that the environmental benefits of technologies like EV are not reduced by outside factors.

¹⁴ Australian Parliamentary Library, *Australian Transportation Emissions*, 2010.
https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Browse_by_Topic/ClimateChange/old/whyClimate/human/howMuch/transportation

An additional benefit to EV usage is that, according to some analysis¹⁵, EVs could represent a significant additional future storage capacity for our electrical grid. If EVs were to become normalised, the grid would have access to thousands of large batteries at any given time, particularly in mornings and evenings when vehicles are parked. This capacity would greatly expand our ability to ameliorate the intermittent nature of renewable energy generation, as excess energy could be stored in the batteries distributed across the grid during times of excess and then accessed when generation rates fall. It should be noted that for this to be possible in the future, significant grid upgrades would be required. This is particularly true in states where the power grid has been privatised and has often been left to fall into disrepair.

The encouragement of greater use of electrical vehicles in the Australian community must form a significant part of a broader strategy to reduce the environmental impact of Australia's transport. Along with investments in infrastructure, mass-transit and innovation and reform in the transport industry, EV usage can ensure that Australia can keep moving while also fulfilling our environmental obligations.

Environmental Recommendations

- Implement the Just Transition strategy outlined in *Sharing the challenges and opportunities of a clean energy economy*.
- Introduce measures aimed at reducing the impact of transportation on Australia's environment, including:
 - Support for domestic EV production and use;
 - Significant increases in funding for passenger rail, tram and bus networks, as well as more efficient multi-modal freight infrastructure and services¹⁶;
 - Investment in behaviour change campaigns to encourage modal shift to mass transit systems; and
 - Industry wide incentives to drive environmental innovation and reform in the sector.

In Conclusion

The demise of the Australian car industry exemplifies that damage that is done to Australia and Australian workers when conservative governments decide to trust to luck and leave the fate of entire industries to the fickle winds of international commerce. Australia must become a nation with a plan for our economic prosperity, a plan that creates good, stable jobs and which delivers work and fair pay to Australian workers.¹⁷ We cannot continue to rely on our luck to see us through – we must seize opportunities when we can. EV production is an opportunity that

¹⁵ The Climate Council, Op. Cit

¹⁶ We see this an augmentation of our current freight capacity (based around heavy vehicle transport) and not as a replacement of that capacity. Such augmentation would most likely require short and medium-term transitional support for the industry.

¹⁷ For a comprehensive plan that achieves these aims, see [Jobs You Can Count On](#), published by the ACTU

Australia must seize. It is an opportunity to help the economy, return prosperity to areas of Australia that have been devastated by unemployment since the car industry died and to fulfil our climate obligations. We ask the Committee to call on the government to implement the recommendations outlined in this report and to put the lie to Australia's pejorative label – the lucky country.

address

ACTU
Level 4 / 365 Queen Street
Melbourne VIC 3000

phone

1300 486 466

web

actu.org.au
australianunions.org.au

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