

Senate Select Committee on Electric Vehicles

Submission by Air Vice-Marshal John Blackburn AO (Retd)

This submission summarises growing Energy and Liquid Fuel Security concerns in Australia and highlights the potential role of Electric Vehicles in improving Australia's Energy security. Attached are my three reports related to Liquid Fuel Security, published by the National Roads and Motorists' Association (NRMA) in 2013 and 2014, and my article on Energy Security published in the September 2018 edition of the Australian Defence Magazine. In summary:

- Energy security is fundamental to our way of life. Without energy security and without resilient supply chains, our Defence Forces will not be able to operate. Likewise, our society would also cease to operate if our national energy infrastructure and associated supply chains falter.
- There has been a considerable amount of public discussion of energy and fuel security in Australia over the past few years. As mentioned previously, in 2013 and 2014 I wrote a series of reports on Australia's Liquid fuel Security that were published by the NRMA. More recent activity has included:
 - The Australian Senate held an Inquiry in 2015 into Australia's Transport Energy Resilience and Sustainability.
 - Senators David Fawcett and Jim Molan, along with the House of Representatives member Andrew Hastie, have expressed their concerns repeatedly in the media regarding these issues.
 - In August 2017, the Australian Strategic Policy Institute (ASPI) published its report on "The Challenge of Energy Resilience in Australia."
 - In February 2018, the International Energy Agency (IEA) published their review of Australia's energy policies which highlighted that energy security concerns are on the rise.¹
 - In March 2018, when reviewing a critical infrastructure bill, the Australian Parliamentary Joint Committee on Intelligence and Security made the following recommendation "The Department of Home Affairs in consultation with the Defence and the Department of the Environment and Energy need to review and develop measures to ensure Australia has a continuous supply of fuel to meet these national security priorities."
- Former Prime Minister Turnbull's statement that the resulting Government review into Australia's Liquid Fuel Security "should not be construed as Australia having a fuel security problem" is contradicted by the 2018 International Energy Agency (IEA) review of Australia's energy policies concluded that "It is less clear how the country (*Australia*) would respond in the event of a serious oil supply disruption leading to market failure."

¹ Energy Policies of IEA Countries: Australia 2018 Review - <https://webstore.iea.org/energy-policies-of-iea-countries-australia-2018-review>

- Australia is the only IEA member country, which is a net oil importer, that fails to meet its IEA member stockholding obligations. We currently import over 90% of our transport fuels and we rely completely in industry held commercial stock holdings to meet our obligations (current industry stock levels do not satisfy Australia's IEA obligations.) The IEA Review noted that Australia's oil stocks are at an all-time low, that we have no strategic oil stocks and that we do not place any stockholder obligations on industry. The Australian Government has at last agreed to address part of this shortfall and has committed to meeting our obligations by 2026, by using the purchase of "tickets" (options to purchase oil for release to the market) with the US and Europe that will, in reality, do little to improve our domestic energy security and resilience as the stocks will not be held in Australia.
- The current fuel supply situation can be broadly summarised as follows:
 - The Department of the Environment and Energy statistics showing the end-of-month stocks were, at December 2017, 21 days of petrol stocks, 16 days of diesel and 19 days of aviation fuel (we have had diesel stocks as low as 12 days in recent years and have experienced supply restrictions on a number of occasions.)
 - Australia fuel import dependency for transport fuels had grown from 60% in 2000 to more than 90% by 2013.
 - In excess of 50% of our refined diesel and 75% of our refined jet fuel imports transit the South China Sea, an area of growing security concern that was not considered in the last National Energy Security Assessment (NESA) published in 2011.
 - Between 2012 and 2015, three of the seven refineries we had closed down; when asked how many refineries we should have for resilience of supply, the then Department of Resources, Energy and Tourism, advised (with little apparent regard for security of supply) that we did not need any refineries ... because it was cheaper to import refined fuels.
 - Australia is moving towards a situation where by 2030 we could have no refineries, less than 20 days of liquid fuel stocks, and 100% imported liquid fuel dependency.
 - Unlike electricity or gas where the source energy is produced in Australia, there is little the Government can do in the event of a major oil supply interruption as less than 10% of our liquid fuels are wholly sourced in Australia; we would be completely dependent on "market forces" to work out a supply solution as we have no clear plan to address a major supply interruption, as highlighted in the 2018 IEA review.
 - The bottom line is that, given the deteriorating security environment in the Asia Pacific region, we are in a strategic warning period for fuel security, we have a flawed NESA that is out of date, there are no Government-owned strategic fuel reserves in Australia and no mandated industry fuel stocks. We're a 100% reliant on market forces and there is no Plan B ...
- The lack of an integrated, systems design of Australia's energy system is also a major vulnerability.
 - Australia's energy infrastructure was not designed as an integrated system; it evolved over many decades as it changed from public owned to privately owned

infrastructure components, with little Government regulation and little apparent thought about how secure and resilient energy systems can be developed. The evolution of the piece parts has, in effect, been left to the “market.”

- Liberal MP Andrew Hastie, the Chair of the Australian Parliamentary Joint Committee on Intelligence and Security, has identified the need to think about an integrated systems approach when he suggested that we should look at Australia’s National security as an “ecosystem.” For example, he called for the fuel supply issue to be elevated to a national security issue: “you can have the best military in the world but it’s futile if you can’t fuel it.”
- Similarly, Dr Paul Barnes and Colonel Neil Greet (Retd) noted in their ASPI 2017 report on “The Challenge of Energy Resilience in Australia” that Australian energy policy tends to be stove-piped and sector-specific, which doesn’t map well to the complexity inherent in energy infrastructure systems. They noted that the energy sector faces interconnected vulnerabilities and that, in formulating policy, it is critical that the Australian Government consider the complex interdependencies of these vulnerabilities. They concluded that continued planning in isolation will ensure that Australia will face ongoing and increasingly chronic insecurity from failed energy policy.
- The opportunity is to address the risk in an intelligent, integrated manner. We are undergoing a major transformation in how our societies work in areas such as the economy, energy and the environment. These areas are closely interlinked but managed as separate competing issues and usually in a fragmented manner as a result of near-term political goals. Technology changes will afford great opportunities for us, if they're applied intelligently. I argue they're not being done that way because of a lack of an integrated systems design approach. An example of how we could go about addressing the liquid fuel security issue in an integrated manner is by:
 - Conducting a realistic NESA (the NESA was due to be produced in 2015; it is now scheduled for release in 2019.)
 - Reducing the demand for liquid fuels by the following measures:
 - Mode shifting, such as transporting freight by rail rather than road (it is concerning to realise that only 5% of the north-south freight on the east coast of Australia is by rail.)
 - Supporting increased use of public transport.
 - Improved fuel efficiency of vehicles.
 - Expansion in the number and use of electric and fuel cell vehicles.
 - Developing additional alternative fuel sources to complement the existing oil produced in Australia such as biofuels,
 - Ensuring sufficient refining and processing capacity is maintained in Australia to process the secure liquid fuel sources we have, and
 - Ensuring liquid fuel stockholdings levels in Australia do not drop below the level necessary to support a secure supply chain.

- Electric vehicles could play a significant role in improving Australia's energy security by reducing the demand for foreign sourced liquid fuels and by providing a significant increase in transport system resilience in the event of a fuel supply disruption.

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Air Vice-Marshal John Blackburn (Retd) AO, MA, MDefStud, retired as the Deputy Chief of the RAAF in 2008 and is now the Board Chair of the Institute for Integrated Economic Research (IIER) – Australia and a Fellow of both the Institute For Regional Security and the Sir Richard Williams Foundation.