

Submission on the Energy Security Board - Draft Detailed Design of the National Energy Guarantee: Consultation Paper

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Healthy planet, healthy people.

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Conclusions and recommendations

The Energy Security Board (ESB) Draft Detailed Design Consultation Paper is fundamentally flawed in multiple areas:

- It fails completely to include any health considerations from air pollution, climate change and high electricity prices. It is very timely that the Australian Competition and Consumer Commission (ACCC) has released the Final Report of the Retail Electricity Pricing Enquiry on July 11th 2018. These health implications all have considerable human and dollar costs both to national health and to Australia's economy.
- The National Energy Guarantee (NEG) is egregiously unambitious in that it will limit only the energy sector's emissions reduction to 26% of 2005 energy associated emissions by 2030.
- There is no expressed policy in the public record or relevant ministerial websites to make equivalent emissions savings in the transport, manufacturing and agriculture sectors.
- These sectors are much less able than the energy sector to reduce their emissions load to meet Australia's Paris targets. They will find emission reduction more difficult to achieve than the energy sector.
- Going ahead with the NEG in its present form guarantees that Australia will fail to meet its Paris targets, as committed by the Abbott government in December 2015.
- It is positive that the NEG detailed design document proposes a steady linear reduction in CO₂ emissions between 2020 and 2030, rather than delaying emissions reduction to the later years of the 2020s as some have proposed.
- The detailed design document takes no cognisance of the fact that emissions have risen each year since the carbon price was repealed.²

Accordingly, Doctors for the Environment Australia recommends that:

- The states reject the NEG at forthcoming Council of Australian Government (COAG) meetings until such time that the proposals have been reformulated taking into account health considerations, costs from air pollution and greenhouse emissions and the recommendations of the ACCC Final Report "*Restoring electricity affordability and Australia's competitive advantage*"^{3,4}

- A rational, effective and uniform state-based policy be prepared using full cost accounting to provide an efficient transition to renewable energy and to guarantee that Australia contributes its share of emissions reduction necessary to fulfil our commitment to the Paris Agreement which includes "*ambitious measures*" to keep the global temperature increase to less than 2°C, preferably less than 1.5°C.
- States making headway in emissions reduction and transition to renewable energy should, in the national interest, not be constrained. Currently, although claiming to be technology neutral by design, the NEG has surrogate constraints as its reliability criterion effectively requires (and guarantees) traditional dispatchable energy in the mix. This implicitly favours fossil fuels by taking a narrow and old fashioned view of dispatchability and reliability. Authorities including Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Australian National University (ANU) have stated ways in which Australia could have reliable and dispatchable energy that is 100% renewable by 2030-2032 at manageable cost.^{5, 6, 7}
- The federal government follow the lead of several states and adopt a more responsible and ambitious approach: SA (>50% renewable energy already achieved), VIC (40% by 2025), QLD (50% by 2030) and ACT has contracts to take it to 100% renewable by 2020. The states continue to add more storage and measures to improve energy security, dispatchability and reliability. These are the measures which the federal government should be taking rather than pursuing a restrictive, cumbersome and extremely complex approach which will be governed by a multitude of obscure mechanisms.
- The 56 recommendations of the ACCC Final Report be considered carefully and, where relevant and helpful, incorporated into the final design of the NEG.

Doctors for the Environment Australia

Doctors for the Environment Australia (DEA) is an independent, self-funded, non-government organisation of medical doctors and medical students in all Australian States and Territories. We work across all specialties in community, hospital and private practices. Our membership is supported by strong public health and scientific expertise and includes many distinguished health professionals. We are committed to bringing health risks from climate change and pollution to the frontline of attention, to minimise public health impacts and to address the human harm and physical and mental diseases locally, nationally and globally which are caused by damage to our natural environment.⁸

DEA's Energy and Health Committee has followed the debate closely since the NEG was announced last October, and has previously written to energy and health ministers, premiers and first ministers to urge them to consider what this policy might do to global and Australian health.^{9, 10}

For a decade DEA has supported bipartisanship on climate policy. However, we cannot support bipartisanship on what we regard as a cynical and poorly conceived proposal whose design favours the incumbent fossil-fuel entities rather than developing ambitious and meaningful policies to help combat pollution and climate change.

Furthermore we encourage those states, which clearly understand the needs of the nation, to work together to develop an effective, more ambitious and uniform national state-based policy. Not only states, but cities, municipalities and even communities are acting on progressive policies to increase renewables and decrease emissions. In the 2018 Lowy Institute poll a large majority of Australians (84%) say "*the government should focus on renewables, even if this means we may need to invest more in infrastructure to make the system more reliable*".¹¹

Discussion

The National Energy Guarantee and the Draft Detailed Design Consultation Paper

The NEG in its present form has widespread negative health implications that are ignored by the ESB, the federal government and business and fossil fuel interests and were completely overlooked at the recent webinar on the ESB's Draft Detailed Design Consultation Paper on the NEG.

On Monday 2nd July 2018, participants in the Webinar on the ESB proposals did not address many serious deficiencies. These include:

- The absence of any meaningful plans to mitigate the emissions from industry, transport and agriculture:
 - There does not appear to be any evidence of plans to reduce industrial emissions other than the exemptions for emissions-intensive trade-exposed (EITE) industries set out in the NEG, which will not reduce emissions, and the discredited Emissions Reduction Fund.¹²
 - The most recent government paper on greenhouse emissions in transport was written in 2002,¹³ following an earlier report in

1992.¹⁴ In spite of several Inquiries and calls for submissions in the last few years, no firm proposals have been put forward.

- More effort could be applied to reducing emissions in agriculture and farming where much resistance to change is expected. The Emissions Reduction Fund has been partly successful, and farmers are paid for reforestation¹⁵. There has also been minimal discussion in the National Climate and resilience document from 2015, but no clear and meaningful policy initiatives have emerged.¹⁶
- The absence of honest discussion on how failure to address industry, transport and agriculture will mean that the NEG will inevitably fail to fulfil Australia's commitments to the Paris Agreement.
- The failure to discuss or appreciate new data which suggest that climate change is occurring faster than previously predicted, leading to intensification of extreme weather events, sea level rise, drought and the decimation of agriculture.^{17, 18, 19}
- The suggestion that the 26% reduction in electricity emissions over 2005 levels by 2030 be locked in to prevent a more ambitious target should there be (a) a change in government or (b) an increase in the rate of anthropogenic global warming necessitating much more ambitious targets.

DEA believes this exceedingly complex draft detailed design document is based on outmoded concepts. Such crucial issues should be guided by expert advice from scores of climate scientists and not by ideology.²⁰

But more disturbingly still, the NEG is designed not to reduce overall emissions adequately. Even Origin Energy said at the recent Webinar that they believe the emissions reduction target must be more ambitious and much higher and their company is planning to halve its own emissions by 2030. Origin stated that electricity can and should make a larger contribution to overall emissions reduction. Power Shop and the Clean Energy Council also suggested the ERT should be higher.

The discussions at the Webinar by the participants in the electricity markets did not dissuade DEA from their view that, even with the recent changes, the NEG remains exceedingly complex, lacks transparency, and would entrench the existing large operators, inhibit new entrants, reduce competition, reduce liquidity and increase prices;²¹ and would not reduce emissions.²²

The recent Australia Institute Report '*National Energy Emissions Audit: July 2018*' makes it clear that Australia's emissions continue to rise since the carbon price was repealed in 2014.²³

To quote directly from the report:

"Large increases in consumption of petroleum fuels, particularly diesel, continue to more than offset gradually falling electricity generation emissions and near constant emissions from gas consumption. Because emissions from petroleum fuels and, to a lesser extent, natural gas have increased so much since 2005, a pro rata reduction from these sources by 2030 will require very much larger relative reductions from present levels. Consumption and emissions from use of road transport fuels (petrol, retail diesel and auto LPG) has grown at twice the rate of GDP over the past two years, meaning that the energy productivity of road transport has deteriorated by 5%.

Fossil fuel combustion accounts for the majority of Australia's emissions – 71% in Australia's most recent National Greenhouse Gas Inventory, which was for the year 2014-15. Fossil fuel combustion emissions also account for most of the year on year change in Australia's emissions. Over the last few years the change is an increase."

Also important to this debate is the recent Grattan Institute Report 'Mostly working: Australia's wholesale electricity market'. The key points are that electricity prices will remain high in the foreseeable future, gas and coal prices dominate wholesale electricity prices and 'gaming' by generators is a continuing problem.²⁴

It is worth quoting from the introduction:

"Wholesale electricity prices rose across Australia's National Electricity Market (NEM) by 130 per cent between 2015 and 2017. The value of electricity traded in the NEM more than doubled, from about \$8 billion to \$18 billion. Household bills increased by up to 20 per cent in 2017 alone.

Three issues caused the price increases. First, two big, old, coal-fired power stations closed (Northern in South Australia in 2016 and Hazelwood in Victoria in 2017). Although they were low-cost to operate, they faced big maintenance bills that weren't worth paying given low market prices as a result of historic oversupply. Their closure reduced supply and pushed prices up. This accounts for about 60 per cent, or \$6 billion, of the increase in the value of electricity traded annually in the NEM between 2015 and 2017.

Second, the price of key inputs, especially gas and black coal, rose just when the plants they fuel were needed more often. This accounts for up to 40 per cent of the price increase between 2015 and 2017."

Importantly, the report notes:

"In both cases, the market responded efficiently to the changing circumstances. Prices have increased to levels that are expected in the long run, closer to the long-run marginal costs of generation including construction and maintenance costs. But prices have not gone so high as to attract much additional investment in the system, beyond the additional supply from subsidised renewables schemes."

The report addresses the difficult issue of 'gaming' by generators:

"The third issue is that generators 'game' the system: they use their power in concentrated markets to create artificial scarcity of supply and

so force prices up..... so a single outage, plant closure or transmission constraint can lead to a supplier having a high level of transient market power. In these circumstances, generators can temporarily force prices up.

Gaming has occurred in Queensland and South Australia, there are signs of it in Victoria since the closure of Hazelwood, and it could appear in NSW as supply tightens with the scheduled closure of the Liddell coal-fired power station in 2022. Gaming has been a part of the market for years and appears to be permitted by the current market rules. It is notoriously hard to identify, but it may add as much as \$800 million to the price paid for electricity traded in the NEM in some years."

The ACCC Final Report suggests that much more can be done to revitalise the NEM and reduce wholesale, retail, commercial and industrial electricity prices far beyond the proposed price reductions predicted by ESB modelling. To quote from the Media Release;

"The National Electricity Market is largely broken and needs to be reset. Previous approaches to policy, regulatory design and competition in this sector over at least the past decade have resulted in a serious electricity affordability problem for consumers and businesses," ACCC Chair Rod Sims said.

"There are many reasons Australia has the electricity affordability issues we are now facing. Wholesale and retail markets are too concentrated. Regulation and poorly designed policy have added significant costs to electricity bills. Retailers' marketing of discounts are inconsistent and confusing to consumers and have left many consumers on excessively high 'standing' offers."

The ACCC estimates its recommendations, if adopted, will save the average household between 20 and 25 per cent on their electricity bill, or around \$290-\$415 per annum, depending on which state they live.

The NEG and health: human and financial costs

DEA is appalled by the continued failure to consider the health implications of the proposed NEG plan. The NEG favours coal and gas with their attendant health risks for humanity and the planet via pollution and global warming, and inhibits and disadvantages investment in the renewable energy industry.

The NEG is likely to lead to less than 28-36% renewable energy in the National Electricity Market (NEM) by 2030, even less than business as usual (35%), Finkel's Clean Energy Target (42%) and Federal Labor's policy of 50% or the level of 70% that will be necessary for Australia to meet its Paris Agreement. In 2030, coal and gas will be 64-72% under the NEG, 58% under Finkel and 39% under Labor.²⁵

But DEA's primary concern is the health effects and their human and financial costs.²⁶ These health risks are both local due to pollution with toxic gases, polluting particulate matter and other toxins, and national/global due to the greenhouse effect and anthropogenic global warming. High electricity prices are a further health hazard.

1. The NEG and health: pollution is killing people

The health implications of coal are truly horrifying, with an estimated 3,000 early deaths annually in Australia from air pollution, about half from coal mining and combustion, causing asthma attacks, chronic lung disease, lung cancer, dementia, heart attacks and stroke. Multiple independent studies, overseas and in Australia, suggest that the incidence of low birth weight babies is related to their pregnant mothers living downwind from coal fired power stations. These babies may have impaired outcomes.^{27, 28, 29, 30}

The mining and burning of coal emit toxic pollutants of particulate matter (PM), oxides of sulphur and nitrogen, and many other pollutants, all of which contribute to cancer, heart, lung and vascular disease.³¹

Research published in *The Lancet* reveals that 24 people die for every terrawatt hour (TWh) of coal combusted.³² The International Energy Agency (IEA) estimates that more than 7,500TWh of electricity was generated by burning coal in 2009.³³ Therefore, according to this and other estimates, the toll from coal-fired power generation exceeds 200,000 deaths globally every year.

Furthermore, a report published by the World Health Organization in 2008, estimated that particulate pollution from coal could be causing over one million premature deaths annually. The more damaging fine PM from all sources contributes to over four million deaths annually world-wide and creates an enormous burden of disease that costs economies dearly in lost productivity and health costs.³⁴

DEA is deeply disappointed that the government has not given greater priority to the orderly closure of coal-fired power stations. Failure to make the necessary transition towards renewable energy will cost lives and add to the burden of the already stretched healthcare system. Black lung is returning to Queensland coal mines.³⁵

The health costs of pollution in Sydney alone are estimated to be \$8.4B annually. Much of the pollution in Sydney arises from coal combustion.³⁶

This international problem is given major prominence and authority by the recently published *The Lancet Commission on Pollution and Health*³⁷.

2. The NEG and health: Anthropogenic Global Warming

The combustion of coal, gas, oil, petrol and diesel all add greenhouse gases to the atmosphere. The consequences include: increasing deaths due to heat-stroke in heat-waves, burning in bushfires, drowning in floods and storm surges, injuries in cyclones, infection with warm-weather diseases, suicide in stressed farming communities and more. The last weeks have seen unprecedented heat waves across the Northern hemisphere and major flooding in Japan with landslides and many deaths.^{38, 39, 40}

Gas is touted as a less emissions intensive transitional fossil fuel for electricity generation but has similar risks, is not much less significant as a cause of global warming when the poorly measured fugitive emissions of methane are included, and especially where fracking is required.⁴¹

Methane is 86 times more powerful as a greenhouse gas than CO₂ over a 20-year time frame. Fracking adds further pollution risks including potential damage to water tables, soil and the environment,⁴² and contributes to psycho-social distress and suicide in land-holders.

3. The NEG and health: Electricity prices are hurting the most vulnerable in our society

To quote from the ACCC report:

"It is clear that most households are paying far too much for electricity. In addition, some of the most vulnerable in our community are forced to struggle through freezing winters and scorching summers, with many others also having difficulty paying their bills," Mr Sims said.

We have known that high electricity prices are hurting the very young, the elderly and the poor for some years. These people suffer from extreme cold and extreme heat. Often they cannot afford to heat or cool their dwellings.

In the 2 weeks preceding the 2009 Black Saturday fires in Victoria, 374 people died as a result of the heatwave whereas 173 died in the fires. In a 10 day period in January 2014, during a heatwave with temperatures reaching 43°C 139 more people than expected died.⁴³

In the last week at least 74 people have died in a heatwave in Eastern Canada.⁴⁴

Cold can be even more devastating. There are estimates that 20 times more people die as a result of cold weather than hot weather, and there are clear explanations of the mechanism.^{45, 46}

These negative outcomes are particularly seen in the poor and disadvantaged, the Conversation paper referenced above says: "*People with less money are more vulnerable as they may not be able to afford to heat their home or may live somewhere that's harder to keep warm because it's not well insulated. Caravans or mobile homes are particularly risky.*"

Interestingly, there are more deaths from cold in 'warm' Australia (6.3%, 1 in 15 deaths) than in 'cold' Sweden (3.9%, 1 in 26 deaths) because Swedish houses are better heated and better insulated.⁴⁷

Conclusions

Societal, human health and financial costs of ignoring both pollution and anthropogenic global warming and failing the Paris Agreement are being ignored in this ESB Draft Detailed Design Consultation Document.

Evidence from comments made in the Consultation Document and at the Webinar on 2nd July 2018 suggest that the ESB is not looking at the full ramifications of their proposals for energy security and reliability. To lower emissions is part of the remit but policies suggest this element is being sacrificed to the other two.

Since increase in renewables and various forms of storage are being led by the community and industry, it would not be too difficult to incorporate this progression into a framework that protects security and reliability. Instead the ESB is attempting to suppress progress by overplaying market control. Would it not be preferable to give the market (community, industry and the states) more leeway in the gold-plating of security and reliability which are already at very high levels.

Lowering emissions must be given a higher priority for the sake of the future health of this planet and its inhabitants. Ultra-extreme weather events (heat waves in the northern hemisphere and floods in Japan, both accompanied by multiple fatalities), around the world at this very moment are but a sample of events to come.

Australia, appearing to care for its own, ignores the bigger picture which will develop to haunt us at our peril. Australia, like all signatories to the Paris Agreement, has global responsibilities.

In her closing remarks at the end of the 2nd July Webinar, Chair of the ESB Dr Kerry Schott said: "*Emissions targets: Don't dare to go near that*".

In DEA's view this encapsulates the serious limitations of the whole NEG process: the single most vitally important issue can not even be discussed. And meanwhile, over the last weekend, the Queensland State LNP conference has moved to establish a new coal-fired power station in north QLD and to refurbish others using taxpayers' money.

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