

Submission to the Independent Expert Panel on the Interim Emissions Reduction Targets for Victoria (2021 – 2030)

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Healthy planet, **healthy people.**

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Doctors for the Environment (DEA) is a voluntary organisation of medical doctors and students which educates and advocates for preventive measures to combat the adverse health effects of environmental damage. Climate change from rising greenhouse gas emissions is currently a major focus of our activities.

DEA congratulates the Independent Expert Panel for their comprehensive Issues Paper and thanks the Panel members for their invitation to provide a submission based on a series of questions within the Paper.

Introduction

When representatives of DEA, Eugenie Kayak and John Iser, met with the expert panel on 22nd November 2017, it was suggested that DEA submit some notes on their assessment of suitable targets. These notes were sent to the Independent Panel in April 2018. The following is an abridged version.

DEA makes the following suggestions and recommendations:

- DEA supports the leadership and actions undertaken by the Victorian Government² in the absence of genuine action by the Federal Government to meet Australia's commitments to the Paris Agreement 2015³.

Article 2 of this Agreement commits signatories to derive policies and take actions that are required to hold the increase in global average temperature to well below 2°C and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change. Important guiding principles of the Agreement are embodied in the Preamble – *"Recognizing the importance of the engagements of all levels of government and various actors....."* and in Article 3 which states that *"all Parties are to undertake and communicate ambitious efforts as defined.....The efforts of all parties will represent a progression over time"*.

DEA is concerned by the multiple adverse health effects threatened by uncontrolled global warming and climate change. These range from the immediate effects of extreme weather events through to the supply of

the fundamental determinants of health; adequate food, water, biodiversity and clean air. A comprehensive review of health effects can be found in our Fact Sheet on Health⁴.

One metric which is often used to highlight the urgency of action required is the concept of the 'carbon budget' which is the limit to the amount of carbon the atmosphere can absorb to avoid excessive global warming. For successful global action, all nations must contribute their share of emissions reduction⁵ and since Australia's overall carbon emissions have not fallen for the last 10 years⁶ and there is no federal plan to make meaningful inroads into these emissions⁷, the States must take up the challenge.

- To set the interim targets, DEA is relying on multiple sources of information, many of which are contained in its submission to the federal government in 2015.⁸ In that submission, we had concluded that ERT's should be of the order of 40% by 2025 and 50% by 2035. We are also guided by the Australian Government's Climate Change Authority (CCA) as an authoritative source. In 2014, the CCA recommended⁹ reduction of GHG emissions by a minimum of 15% below 2000 levels by 2020 and a range of 40 to 60% below 2000 levels by 2030.
- The economics of action on climate change dictate that strong action now reduces the cost burden for later generations¹⁰ and that strong action now is really the only way to avoid the intolerable burden of massive emission reductions by future generations (Pathways to Zero, 2016: Environment Victoria). Every year of delay adds to the eventual cost of action as it locks in more emission-intensive industry and infrastructure and defers investment in low emission technology, industry and jobs.

Additional points for consideration:

- Electricity generation: Since throughout Australia there is a community-led acceptance of renewable power generation, it is reasonable to focus on electricity generation more vigorously than other fields while recognising the need to ensure reliability and security of supply.¹¹ Solar and wind power generation is now cheaper than new coal-fired generation and is several-fold cheaper when the hidden costs (externalities of health costs, damage from coal's contribution to global warming, and discounts) are taken into account.^{12, 13}
- Because electricity supply crosses state boundaries, assessment of total emissions from this sector can be derived from that produced by Victoria plus the net sum of that imported and exported over any given period.

- Emission reductions need to occur in all sectors of the economy in order to achieve the desired result without placing an unfair burden on any particular section. There are many ways for states to play a major role in reducing carbon emissions without interfering with federal functions. For example, Australia's states are responsible for their energy supplies (electricity and gas), for health, education, security, land use, forestation and for local government services. In all of these sectors, measures can be taken to reduce carbon emissions which do not require federal interference or direction, although effective federal supervision and action would be helpful.
- Conventional and unconventional natural gas has been promoted as an interim energy source during the transition to renewables. However, use of gas would involve costly investment in large-scale infrastructure for technology which has comparable greenhouse emissions intensity when fugitive emissions are included.¹⁴
- In addition, because Australia's critical gas supplies are being exported, gas will be in short supply for important domestic and industrial uses should it also be diverted to electricity production.¹⁵

Summary

DEA is concerned by the outlook for human and planetary health of inadequate control of global warming and climate change. Urgent action is required by all sectors of the community and if leadership is not provided by Australia's federal government, the States must assume responsibility. Therefore, at this stage of the proceedings and to provide a basis for further discussion, DEA suggests interim targets of

- 15-20% below 2005 levels by 2020, as well as reducing emissions from government operations by 30% by 2020;
- 40% below 2005 levels by 2025;
- 50-60% below 2005 levels by 2030.

Responses to the Questions raised in the Issues Paper

1a. Should Victoria's interim emissions reduction targets relate to a national reference point?

It would be preferable to relate to a national reference point if that point was appropriate to Australia's requirement to reduce emissions. However, Australia's emissions reduction target (ERT) to 2030 is comparatively weak given that

- 1) Australia's overall emissions have not fallen in the last 10 years and currently are increasing¹⁶;
- 2) Australia's emissions trajectory will have virtually no chance of reaching zero-net emissions by 2050 with its current target of 26-28% of 2005 levels by 2030. Zero-net emissions by 2050 is a generally agreed target of most Australian and international states (Victoria legislated in the Climate Change Act 2017 for net-zero emissions by 2050. This legislation has been supported by the Climate Change Framework, the Take2 program, the Victorian Renewable Energy Act 2017 and the Victorian Renewable Energy Auction Scheme);
- 3) a carbon 'budget' is an equitable method of determining both Australia's and Victoria's share of responsibility in emissions reduction. Using this metric, it is apparent that Australia needs to have a much stronger target as the budget will be exceeded in 10-14 years depending on the degree of risk accepted to reduce global warming. While a (67%) probability is often used in relation to keeping global temperature rise to 2°C¹⁷, it would seem reasonable to aim for a higher chance of avoiding catastrophic global warming – in which case the carbon budget would be expended even earlier.

Hence Victoria's interim emissions reduction targets cannot at present relate to the current national reference point.

1b. If yes, what is the most relevant reference point?

As the Climate Change Authority has taken into account the above factors, it would be reasonable to accept their national emissions reduction target for 2030 of 45-65% of 2005 values.

1c. If yes, how should Victorian interim targets relate to this national reference point?

Australia is such a vast country with differences in natural resources and climate from state to state eg degrees of wind and sunshine leading to differences in renewable energy capacity, suitable sites for pumped hydro, differences in agriculture and in distances of travel. Victoria has an abundance of natural resources and so is uniquely placed to transition to low carbon intensive electricity production; in transport by providing more accessible active transport facilities and public transport (since fuel quality and engine specifications are Federal matters); and in agriculture including increasing the net area of forestation and by following other programs as outlined in the Issues Paper¹⁸. Therefore, Victoria is in a position to relate to this national reference point with a modification as in Question 2 below.

2. What would you recommend Victoria's targets be for 2021-25 and 2026-30, and why?

DEA's recommended targets would be for 15-20% below 2005 levels by 2020, as well as reducing emissions from government operations by 30% by 2020 (current Victorian Interim Target), then

- 40% below 2005 levels by 2025
- 50-60% below 2005 levels by 2030

These targets are consistent with those recommended by the Climate Change Authority in 2014 as described in the Introduction above.¹⁹ Since 2014 there has been very little change in Victoria's emissions and virtually none for Australia overall, so DEA would still recommend these strong targets.

3a. Do you think a Victorian emissions budget should be used as a tool in the Panel's analysis?

3c. If yes, how should Victoria's share of a global or Australian emissions budget be calculated?

To be equitable, an emissions budget should be based on a country's emissions rate as a proportion of the global emissions rate. Victoria's budget is then based on its proportion of Australia's emissions.²⁰ This is an important tool because it can be used in conjunction with the overall targets to add an appropriate degree of urgency to emissions reduction. It can also be a useful way of explaining the need for action to those who are not well-informed on carbon emissions and climate change. The

emissions budget should not be per-capita based as this can (and has) been used to legitimise weak reduction targets. However, once a state has committed to zero-net emissions by a certain date and has appropriate interim targets, the budget does lose its relevance.

3b. If yes, what global temperature outcome should a Victorian emissions budget be consistent with (e.g. 2°C above pre-industrial levels)?

Many commentators have expressed the view that it is too late to hold global temperatures to within a 1.5°C increase. Therefore, by default, a temperature increase within 2°C becomes the next requirement. However, an emissions budget which is estimated to provide only a 67% chance of meeting this target is too high. To prevent such a grave outcome as run-away global warming, a higher chance of success is required which means that the emissions budget will be used within a decade.

4. What do you see as the relative advantages and disadvantages of early versus late action to reduce Victoria's emissions to reach net zero by 2050?

The Issues Paper well describes the benefits and disadvantages of early versus late action to reduce emissions²¹. Advantages of early action are lower eventual cost, lower risk of stranded industries and assets, easier and cheaper to institute procedures and technologies, reduced burden for later generations, and reduced costs including those for health services from less frequent extreme weather events in the meantime. The defence for late or delayed action is that some technology may be discovered or developed which can enable huge emissions reductions economically in a very short time-frame. To rely on such a possibility however is a risk that humanity cannot afford.

5. What lessons can be learned from other state and local governments that have set emissions reduction targets?

Lessons learned are the importance of renewable generation mix, need for storage to parallel generation, need to harness the powers of wholesalers and retailers, the need to ensure that contracts with suppliers are fair and reasonable, and the need to change the design of the market.²² Formerly there has been great reliance on the market to generate change. However, market forces are reactive, do not necessarily predict public needs, and are often manipulated for political purposes.

Emissions reduction targets in conjunction with renewable energy targets are important because they provide incentives and a degree of confidence for investment by business and industry²³.

6. What are the most significant opportunities and technologies for reducing emissions in Victoria during the period 2021-2030 and to reach net zero emissions by 2050?

Changing the source of Victoria's electricity generation, which is currently responsible for about 50% of Victoria's emissions, is vital. In addition to reducing climate risk through reduced greenhouse gas emissions from electricity generated from coal, reduction of local air pollutants would also reduce ill-health and health expenditure.

Air pollution from fossil fuel combustion is linked to a broad range of conditions including cardiovascular disease, stroke, cancer, asthma and chronic lower respiratory tract disease.²⁴ Epidemiological studies have also shown clear links between air pollutants from fossil fuels and all cause, cardiovascular and lung cancer mortality.^{25, 26}

There is potential for another 19% of emission reduction in the transport sector with the promotion of less personal car use and electrification of transport, particularly when electricity is generated from renewables.²⁷ Although transport intersects state boundaries, Victoria can still effectively promote electrification of vehicular public transport and can encourage private electric vehicles through state-based registration discounts. Greater use of public and active transport (cycling and walking) would reduce sedentary lifestyle diseases such as obesity, hypertension, diabetes, depression, osteoporosis and some types of cancers thus reducing the health-care burden. While solar and wind will provide most of the energy, there needs to be careful assessment of any carbon-emitting back-up. Carbon-capture and storage and highly efficient, low emission (HELE) coal-based technologies have failed world-wide to provide truly low-emission affordable power. Therefore, extensive and costly research into developing these technologies should be approached with caution.²⁸ Transition to renewables will require development of more energy storage facilities and continued advances in grid management.

Residential energy efficiency standards have improved but need strengthening and to be better regulated. Total electrification of households can be encouraged during the transition from coal-fired to renewable power.

Health services account for about 7% of national emissions and work done in some Victorian hospitals has demonstrated how these emissions

can be reduced. Educational programs for all hospitals would bring significant reductions at low cost.²⁹

Industry, which is largely market-driven, will gradually make changes as outlined in the Issues Paper¹⁸ to reap the economic benefits of reducing power costs. More industries have now installed roof-top solar but there is still vast acreage of factory roof-tops available. Some major industries have publicly announced decisions to seek more energy from renewable sources.^{30, 31}

Gas (methane and propane) will continue to be used for many industrial processes and is being promoted as a transition fuel for electricity production because of the rapid start-up time of gas generators. However, carbon emissions are still the end result of combustion (albeit at a level of greater energy efficiency), and fugitive emissions of methane are now recognised as contributing to greenhouse gases to a degree which is difficult to quantify though likely to be significant.^{32, 33}

Currently domestic gas is relatively expensive as it is being sold into the lucrative overseas market, thus depleting domestic supplies and resulting in international influence on prices, whilst placing a perceived pressure on the need for further gas exploration, both conventional and unconventional. Although the latter is presently banned in Victoria, there is continued pressure from industry to pursue exploration and increase supply, which will hamper our attempts to meet emissions reduction targets.

Land and livestock management has many opportunities to reduce emissions as outlined on page 26 of the Issues Paper **Error! Bookmark not defined.** DEA describes its concerns about land management and food production in its position paper.³⁴ The national Climate Change Authority has just released a report (April 2018) entitled *Reaping the Rewards* which covers important land-use changes which will result in reduced green-house gas emissions, environmental preservation and improved profitability.³⁵ Many of the approaches described can be utilised in Victoria. Generally, forest management does not highlight that curbing deforestation is critical for emissions reduction, nor are the multiple benefits of retaining native forests as carbon sinks and repositories of biodiversity emphasised.³⁶

7. What are the key barriers to reducing Victoria's emissions by 2025 and 2030?

Unfortunately, the key barrier to reducing emissions at present is political, particularly the lack of strong emission reduction policies by the incumbent Federal government. In an attempt to provide more clear direction for investment in energy production, the Federal government is currently negotiating a National Energy Guarantee (NEG) which it hopes

will provide more certainty for business. However, most energy institutes believe that the NEG will lock-in high emission outputs because of low renewable energy targets. It is important then for Victoria to reject the tenets of this proposal and to continue with its own state initiatives. Political barriers are enhanced by a powerful fossil-fuel lobby and a hostile section of the media which openly favours continuation of the coal industry.³⁷

8. What further steps can the Victorian Government take to support emissions reduction opportunities and the uptake of low carbon technologies?

There are a number of measures Victoria can employ. Negotiation for higher feed-in tariffs would provide a major boost for installation of household solar. A proposal for a two-tiered system of tariffs sounds promising but the availability of solar during peak periods is limited, and because Victoria has the one time-zone, would only assist those in the extreme east and west of the state. Industry can be encouraged to install roof-top photovoltaic panels (PVs) to sustain their own operations. If these are largely in daylight hours and in the north of the state, savings can be made already. Reverse auctions for contracts to install large scale solar should be continued and these projects should be coupled with wind farms and storage to form balanced micro-grids in regional areas. Means-tested interest free loans would be a great boost for many households.

Other steps are covered in question 6 above.

9. What lessons can be learned about reducing emissions in Victoria from actions taken in other states and countries to reduce emissions?

It is clear that other states in Australia and other countries have made varying levels of progress in reducing carbon emissions. It is evident that a mix of renewable energy sources coupled with smart switching and storage can provide reliable power. However, it is also clear that Victoria needs to increase its capacity for storage in parallel with renewable energy generation. In Eastern Australia there is the advantage of a National Electricity Market (NEM) which can shunt electricity according to supply and demand at any particular time. The reach of this network is so vast that it covers varied climatic conditions, enabling more capability and certainty for renewable generation. It is also apparent that political will is an important determinant of successful emissions reduction.

10. What additional infrastructure will be required to support low carbon transformation within each sector? (e.g. electricity generation, transport, the built environment, industry, agriculture, other land-based activities)

DEA has limited knowledge of the infrastructural requirements except in the Hospital and Health sector which fits between categories of the 'Built environment' and 'Industry'.

The Australian healthcare sector is one of the largest sectors of our economy, with expenditure approaching 10% of GDP.³⁸ The CO₂ emissions of the sector are also significant, being estimated at over 7% of Australia's total CO₂ emissions.³⁹

Thus, there are significant environmental as well as financial costs. The formation of a sustainability unit for the Australian healthcare system would be a practical initiative that would deliver significant environmental, financial and quality benefits, at a comparatively minimal cost. Of the 7% of CO₂ emissions that Australia's health care sector contributes, hospitals are responsible for 44%, pharmaceuticals for 19%, capital expenditure 8%, community and public health 6% and general practice 4%.⁴⁰

In the absence of Federal leadership, a Victorian Healthcare Sustainability Unit (HSU) could be modelled on the Sustainable Development Unit (SDU) in the United Kingdom, a well-established and world leading unit that has proved very effective at improving the sustainability profile of their National Health Service (NHS). In addition to benefitting the environment, reduction of healthcare's greenhouse gas emissions could decrease both ill-health and health expenditure. An HSU would work in close partnership with Victoria's and Australia's extensive network of clinical, regional and health services leaders. There would also be close links with health organisations, academic institutions (research) and existing health-environmental initiatives.

11. What steps could the Victorian Government take to accelerate turnover of capital assets with significant emissions to deliver emissions reductions? (e.g. old road vehicles, industrial equipment)

DEA has no expertise in this area. However, as a general principle, acceleration of turn-over can mainly be achieved by tax incentives and low-cost loans.

12. What are the price and non-price factors influencing business and industry decisions to switch to less emissions-intensive fuels?

The diminishing cost of renewables is having an appreciable influence on business. Forecasting energy costs and the costs of adaptation to, and mitigation of, global warming is affecting business decisions, and business now is under an obligation to disclose the risks that climate change can have on profitability.⁴¹

In addition, even though the Australian business community acknowledges the UN Global Compact, one of the principles of which is environmental responsibility⁴² and that Australia is a signatory to the United Nations Sustainable Development Goals⁴³, coal and mining industries are ignoring these obligations. They are not accepting accountability for the externalities of carbon emissions and other adverse effects, which in the case of coal-fired power includes health costs to the community of air pollution, costs of adverse effects of climate change, subsidies and tax concessions, water usage, and until recently, mine rehabilitation. Global warming and climate change are forecast to have huge financial costs to the community with the costs being higher the longer action is delayed. Avoiding the transfer of this cost burden to future generations (intergenerational theft) should be a major stimulus to switch to lower emission fuels.⁴⁴

13a Should international and interstate offsets be used to meet Victoria's interim targets?

13b. Why?

It would depend on the detail of the individual agreements.

14. What are the potential impacts and benefits of interim emissions reduction targets?

Emissions reduction targets (ERTs) are necessary to give all involved in reducing emissions the incentive and confidence to take specific actions.²³ Interim ERTs reinforce and invigorate actions, many of which require a great deal of planning, of change and of initial outlay. DEA agrees with the potential effects which are well summarised in the Issues Paper⁴⁵.

15. What specific regional or local issues should the Panel consider?

DEA would like to emphasise the need for social equity and justice in the transition to a reduced carbon economy. Many households, particularly in areas of low economic activity, may be left behind in the adoption of energy saving applications, and efficiency and adaptation measures. This could result in further disadvantage (financially and health-wise) if adequate systems are not in place.

The panel should support regional community renewable power generation projects and alternative employment initiatives. Consulting and working with local communities, which are best placed to be aware of their disadvantaged members, would encourage participation in local projects.

Workers in fossil-fuel industries and the timber/forestry industry need to be considered as a priority. Employment opportunities will inevitably change as Victoria moves to reducing carbon emissions and decreasing deforestation. It is essential that there are well considered employment transition plans and that workers and communities are supported throughout.

16. Please provide any other information or evidence you believe the Panel should consider in preparing its advice on interim emissions reduction targets.

Further information may be found in the *Introduction* above.

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