BALLARAT RENEWABLE ENERGY AND ZERO EMISSIONS

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BREAZE Inc. Submission on the *Technology investment roadmap discussion paper: A framework to accelerate low emissions technologies*

On behalf of Ballarat Renewable Energy and Zero Emissions (BREAZE Inc.), we thank you for the opportunity to have input into this important issue.

BREAZE Inc. is a volunteer run incorporated association formed in 2006 with the following vision: "*By 2020, the Ballarat community will have significantly reduced its GHG emissions with the direct intention of achieving zero emissions by 2030."*

BREAZE Inc. aims to facilitate, encourage and educate the wider Ballarat community towards a goal of zero emissions by 2030, via advocacy, installation and provision of renewable energy sources and improved efficiencies across the residential, commercial, industrial, agricultural and transport sectors.

Targets and Milestones

Development of a *Roadmap* to drive investment in low emissions technologies is very welcome at this particular point in time when there is only a decade left to set emissions on a trajectory to avoid the worst effects of global warming. However, the *Technology investment roadmap discussion paper* omits a number of key targets and milestones that renewable energy experts view as essential in laying the groundwork to lower emissions.

Any *Roadmap* that aims to accelerate the transition to low emissions technologies in a market economy must begin by setting a target of zero emissions by 2050, with interim five yearly targets in line with the trajectory agreed at the Paris CoP21 in 2015.

The other key economic instruments missing from the *Roadmap* are a carbon price and an Emissions Trading Scheme. These three ingredients are essential if the *Roadmap* is to provide the community/business confidence required to drive market investment in renewable energy and low emissions technologies.

Additional recommended legislative/policy markers that will further firm-up business confidence in renewable energy—establishing governmental commitment to low emissions technologies—are:

- Setting a retirement date for all coal mines and thermal power stations
- A moratorium on any further coal mines or thermal power stations
- Ending all subsidies for the fossil fuel sector
- Ending government investment in and subsidy of Carbon Sequestration and Storage (CCS). This technology remains only a long term possibility and as such should be

left to private investors — wedded as it is to hopes of future low emissions fossil fuel ventures. Given time is of the essence government funding must be conserved for projects that will assist in reducing emissions for the zero/2050 target.

- Committing not to invest in nuclear energy for the reasons noted above – given the development time required, nuclear facilities are not a short or medium term solution and would direct finite public investment away from where it is most needed.
- Accelerating the development of an integrated grid that can better accommodate renewable energy by facilitating negotiations/resolutions between stakeholders – power providers, retailers and regulators.
- An ordered and just transition away from fossil fuels making sure workers are retrained and redeployed

The road to lower emissions: An economic compass

There is no longer any doubt that the economics of renewable energy are superior to fossil fuels, where operating and maintenance costs remain high. Wherever the vested interests of fossil fuel laggards creates confusion, government must act to provide clarity and certainty to investors to accelerate the transition. It is in the best economic interests of this nation— as well as in the interests of the environment and future generations.

Renewables, solar and wind, are widely acknowledged as cheaper and are projected to reduce in costs compared to every other form of energy generation including gas, as evidenced in the CSIRO GenCost 2019-20 Report.[1]

Furthermore when comparative energy costs are taken into account it is important to also include the costs of addressing the impacts of anthropogenic climate change. A study by the Melbourne Sustainable Society Institute found that mitigation of emissions is the most cost-efficient course of action —when the cost of climate change is taken into account.[2]

This is further evidenced by a recent Climate Council report, that found that climate change would wipe $571 billion from property values by 2030.[3]

In conflict with the stated intentions of this discussion paper to encourage investment in low emissions technologies, any decision to deploy further gas plants for 'firming' the integrated grid, will have the reverse effect— increasing greenhouse emissions. Recent research findings regarding fugitive methane emissions from gas fields, mean past perception of gas as a lower emissions intensive source of energy than coal, is no longer tenable. Furthermore it appears that the relatively low cost of gas that may have been the reason for its inclusion here, will be relatively short term with AEMO's 2020 ISP April update indicating an increasing price for gas.[4] Fortunately there are now a number of mechanisms and emerging technologies for stabilising the distributed energy grid including: demand management, batteries and pumped hydro, with the future prospect of hydrogen as a longer term storage option. As noted in AEMO's ISP Electricity Statement of Opportunities (ESOO) "Firming capability can be dispatched to maintain balance on the power grid. It can include generation

[1] Graham et al, 2020 link - See fig 4-1 to 4.
[2] Kompas et al, 2019, Melbourne University
[3] Climate Council, 2019, *Compound costs: How climate change damages Australia's economy*.
[4] AEMO, 2020, ISP April, p. 2.

on the grid, storage, demand resources behind the meter, flexible demand, or flexible network capability."[5]

A renewables-led post-covid recovery

Due to the timing of the *Roadmap discussion paper*, the authors have not had access to the emerging research referencing how the economic impacts of COVID-19 can be best addressed via a renewables-led recovery—with government investment in clean energy and low emissions technologies driving a new era in Australian manufacturing, lowering operating costs, incentivising investment in environmentally sustainable housing, both as new housing and retrofits, reducing emissions from the agricultural sector, and via the electrification of rail and road transport reducing costs across the economy. The investments proposed will help to both lower emissions and kickstart the economy, providing clear guidance to business and capital, creating jobs and helping Australia to exploit its natural advantages in renewables.

- An IEA report[6] released in April this year, refers specifically to changes in the post COVID-19 world economy. With the global energy demand contracting 8% in the first quarter, a ten-fold greater impact than the GFC is forecast. The April 2020 report notes that 'gas demand could fall much further across the full year than in the first quarter, with reduced demand in power and industry applications,' and that 'renewables demand is expected to increase because of low operating costs and preferential access to many power systems,' with low carbon sources 'extending the lead established in 2019.'
- Monash University-based, climate think tank, *Climate Works*, March 2020 report, *Decarbonisation Futures*, provides a detailed sector by sector breakdown of how emissions reductions can be achieved to keep global warming within 1.5ºC in keeping with the Paris CoP21, noting "government figures project national emissions will decline by 16% on 2005 levels by 2030." The report warns the costs of not setting adequate targets include "missed opportunities in technological investment."
- In its *Renewable Integration Study* released in April 2020, AEMO reported that with the right regulation and market mechanisms the NEM could be 75% renewable by 2025.
- The Clean Energy Council's report, *A Clean Recovery*, released in May 2020, focuses on the job creation potential of renewable energy, and includes amongst its recommendations building 21st century energy infrastructure including a smart distribution network and an EV charging network, along with accelerating and supporting large-scale clean energy investment to make Australia a clean energy superpower.[7]
- Climate think tank, Beyond Zero Emissions (BZE) released its *Million jobs plan* in June. Drawing on the success of its NT 10GW Vision, which built a coalition of business, capital, community and government to change the NT's economic direction, this is a cross-sector analysis of how a renewables-led recovery can reinvigorate the economy and cut emissions.[8]

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[5] AEMO 2019 | *2019 Electricity Statement of Opportunities* p. 124

[6] IEA, 2020, *Global Energy Review*

[7] https://www.cleanenergycouncil.org.au/advocacy-initiatives/a-clean-recovery

[8] https://bze.org.au/the-million-jobs-plan/

The World Bank has also offered a framework for a post-Covid recovery that should be applied to any framework being considered by Australia:

- Is the intervention consistent with and supportive of existing long-term decarbonization targets and strategies? (If such targets and strategies do not exist, does the intervention contribute to the government's "Nationally Determined Contribution" and the eventual decarbonization of the economic system?)
- Does the intervention create or amplify a lock-in of carbon- or energy-intensive development patterns, or represent a future stranded asset risk due to decarbonization, technology change or other market trends?
- Does the intervention remove or reduce financial market, tax, or regulatory obstacles to decarbonization (e.g., for energy efficiency or low-carbon technology deployment)?
- Does the intervention contribute to developing or piloting a low-carbon technology, making it more widely available, or reducing its cost?
- Does the intervention provide the technical means to better integrate or employ low-carbon technologies or strategies (for instance, through improvements to transmission and distribution infrastructure, public transit infrastructure, sidewalks or bike lanes, or by promoting denser urban development)?
- Does the intervention increase local/national energy security?

Policy certainty: A clear view of the road ahead

Investors in utility scale energy ventures or in innovative technology that's not yet market-ready, need long term certainty — they want to see what's coming. Instead of providing that policy certainty, the *Roadmap* neglects to set the necessary target of zero emissions by 2050; or to establish firm retirement dates for existing thermal coal facilities; or to impose the necessary moratorium on further thermal coal plants.

Government investment in R&D — in renewable energy and innovative, low emissions technologies —is another important market signal. Both ARENA and the CEFC play key roles in this area. For the sake of business confidence, government must publicly acknowledge an unequivocal commitment to continue to adequately fund and support to both agencies in their respective roles.

The conclusion to ClimateWorks report, *Decarbonisation futures,* includes a list of actions government can take. We commend these – *re-formatted as dot points*
Governments can set standards and targets to encourage uptake of best-practice solutions:

- levy taxes on emissions intensive activities and products;
- provide financial support to non-commercial solutions;
- invest in relevant infrastructure.
- improve information and accessibility to consumers;
- provide incentives for early development;
- create demand through government procurement;
- and de-risk private investments

Additionally government must cease support for the fossil fuel industry. A 2019 study by the IMF found that the Australian government subsidised the fossil fuel industries by $29 billion

per annum, or 2.3 per cent of Australian GDP meaning that on a per capita basis every Australian was subsidising fossil fuels by $1,198 per person.[9]

Urgency and ambition

This is the crucial decade for setting greenhouse gas emissions reductions on the right trajectory to reach the zero by 2050 target.

Policy makers must act now with urgency and ambition. For the sake of all Australians, the environment and the economy, we must leave fossil fuels in the ground and accelerate investment —public and private—in developing renewable energy infrastructure and associated storage and technologies, facilitating economic growth by ensuring access to low cost, zero emissions electricity.

The EU Commission's commitment to a Green New Deal[10] along with South Korea[11] may well signal a bleak future for Australian steel and aluminium produced via fossil-fuel fired energy. Forecasts of Australia's potential future as a renewable energy Superpower are grounded in the premise of a shift to green steel. The application of Emissions Trading Schemes around the world could feasibly in the future lead to fossil-fuel powered plants becoming stranded assets.

Containing global warming to the 1.5ºC target will help future generations and the natural environment from the worst consequences of global warming, and is also estimated to return global benefits exceeding US$20 trillion.[12] Many nations across the world are in the process of implementing this approach already. We must join them or be left behind.

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[9] Coady et al, 2019, p. 35 https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509

[10] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[11] https://www.forbes.com/sites/davidrvetter/2020/04/16/south-korea-embraces-eu-style-green-deal-for-covid-19-recovery/#4c8054435611

[12] ClimateWorks, 2020, p. 26.