



26 February 2021

Ms. Stephanie Chan
Senior Research and Policy Officer
Australian Council of Learned Academies (ACOLA)
stephanie@acola.org.au

Dear Ms. Chan,

We thank the Australian Council of Learned Academies (ACOLA) for inviting the University of Melbourne to comment on the January 2021 *Research Priorities Consultation Paper* for the *Australian Energy Transition Research Plan*.

Our Acting Deputy Vice Chancellor (Research), Prof. Mark Hargreaves, has asked me to develop this response in consultation with several colleagues who specialise in aspects of the Energy Transition. This submission makes reference to our prior submission on the *Australian Energy Transition Research Plan* dated 15th May, 2020, and was developed in consultation with the following University of Melbourne academic staff.

Prof. Robin Batterham AO FAA FTSE FREng FIEAust
Prof. Mark Cassidy FAA FTSE FIEAust
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Several of these University staff are fellows of ACOLA member academies, as their post-nominals show.

We hope that this submission is useful, and we look forward to discussing it further with ACOLA.

Yours sincerely,

A handwritten signature in black ink that reads "Michael Brear". The signature is written in a cursive, slightly slanted style.

Prof. Michael Brear FTSE FCI FIEAust
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cc:

Prof. Mark Hargreaves, Acting Deputy Vice Chancellor (Research)
Ms. Kate Taylor, Director, Research Strategy
Ms. Carlene Wilson, Director, Policy & Government Relations

*Submission from the University of Melbourne on
the January 2021 Research Priorities Consultation Paper for
ACOLA's Australian Energy Transition Research Plan*

This submission responds to the two questions asked in the Consultation Paper.

Do the three themes of research priorities, and underpinning eight streams, provide an appropriate framework for the Research Plan, and are there areas for improvement?

Since this is an ambitious and complex initiative that seeks to “inform and influence the direction, allocation and quantum of research funding”, sound principles and governance are essential. As we state in our previous submission:

“A coordinating initiative, such as this proposed Research Plan, has potential advantages and risks. One advantage may be its capacity to foster dialogue and robust debate between the community, government, industry and researchers, including bringing together of social, environmental and technical thinking. However, it is also potentially more vulnerable to issues of governance than more distributed initiatives. ... something that will impact many careers and organisations significantly. Good governance of the Research Plan therefore needs to accommodate legitimate and diverse differences of opinion, premised on our need to meet our climate change and other objectives.”

In our view, it is more important to establish sound principles and governance first, before discussing the specific themes and streams in the Plan. This point was made in our previous submission:

“This initiative should ... start by establishing clear, compelling and lasting principles that can be used to define the Research Plan's scope as it evolves, and should consider:

- 1. identification of who needs the proposed Plan and why they need it;*
- 2. how the Plan will respond to these needs; and*
- 3. how the Plan's design and delivery will be continuously and robustly reviewed.”*

and

“... the community, industry and government are those who might need the Plan, and together should have primary say on Research Plan development and delivery. This suggests a Research Plan Steering Committee or equivalent made up mainly or wholly by representatives from the community, industry and government. These representatives should ideally have deep experience of the energy sector and be able to translate that experience into advice on Research Plan development and delivery.”

We note there is limited discussion of Governance in the latest Consultation Paper and it is not clear how the Plan will guide decisions about funding priorities for government agencies, community groups, industry or researchers. We therefore suggest that the Consultation Paper's Steering Committee, together with a few ACOLA staff (supported by modest government funding), might function as a secretariat, reporting to a group “made up mainly or wholly by representatives from the community, industry and government” with “deep experience of the energy sector”. This new group might be designated the Plan's *Board*, with representation from senior personnel in DISER, energy market agencies and the community, industry and potentially some state governments.

This proposed Secretariat can then engage widely with ACOLA's member academies and Australia's research providers to realise the Plan but would defer to the Board on “*identification of who needs the proposed Plan and why they need it*”, “*how the Plan will respond to these needs*” and “*how the Plan's design and delivery will be continuously and robustly reviewed.*” It is important that this structure enables clear communication

between researchers, the Secretariat and the Board to allow feedback on whether any research identified is both needed and feasible.

Given this proposed structure, representatives from funding agencies or research providers should not be on the Board since the Plan intends to “inform and influence the direction, allocation and quantum of research funding”. Of course, recommendations on reforms to energy research funding may consider advice from funding agencies and funding recipients. But these recommendations ultimately need to be made independently by those with research needs to ensure integrity and accountability in this process.

Finally, we think it important that this proposed Board has representation from the community. ACOLA and its member academies serve the community broadly and not just government and industry. Whilst this may, at times, make it hard for the Board to make recommendations to government that are consistent with the politics or policy of the day, the needs of the diverse Australian community must be heard, and scholars have an obligation to respond to them. Further, a Plan that navigates “*legitimate and diverse differences of opinion, premised on our need to meet our climate change and other objectives*” will be of higher quality and more robust than one that does not.

Do the indicative research questions identify the most critical research gaps (are some already being adequately addressed; have any been missed)?

The research themes and streams specified in the Plan are broadly sound but are expressed in generic terms. It is likely necessary to start with broad formulations and then individual teams may need to refine these further.

We also suggest that greater consideration of the following matters is appropriate, although this is not intended as an exhaustive list.

- *Regulatory frameworks beyond energy, climate and environmental law, in Australia and other jurisdictions.*

There is strong potential to look beyond environmental and energy policy and laws. For instance, major developments relevant to energy transition are currently taking place under corporate, prudential and financial regulatory frameworks in Australia and other countries. This includes New Zealand’s, France’s and the EU’s mandatory reporting on companies’ climate risk exposure against clear standards, which contrasts with the largely voluntary approach taken in Australia. There is significant potential to draw lessons from what is being done elsewhere on climate risk disclosure and sustainable financing to drive greater private sector action on energy transition.

- *We need to consider ‘how’ Australian energy research needs to be done and not just consider ‘what’ research needs to be done.*

Research in the Australian energy sector is structured very differently from that in other countries, perhaps most notably in Germany, Japan and the US. This is not only a matter of money or broad cultural differences. The energy sectors in different nations occupy different sociopolitical positions and have very different relationships with and understandings of their research sectors. Like our previous point, it should therefore be useful to undertake a comparative and critical analysis of different countries’ approaches to energy research. Indeed, this should help give a strong evidence base for a Plan that wishes to “inform and influence the direction, allocation and quantum of research funding”.

- *The interaction between human health and the energy transition is complex and extensive.*

This not only includes our growing but still often limited understanding of the health impacts of pollution generated by fossil fuel combustion. For example, autonomous vehicles present issues of occupant comfort and pedestrian safety and may discourage active transport (e.g. walking and cycling) with associated, *negative* public health impacts. There are many other examples of such interactions and often these are not solely health “co-benefits of the transition”.

- *Research on sub-surface energy resources is a massive field on its own that does not appear in the Consultation Paper or in much detail in the Technology Investment Roadmap*
Our understanding of Australia’s sub-surface energy resources and associated biodiversity and ecological systems needs significant further investigation. This is not solely regarding carbon capture and storage (CCS) and fossil fuel extraction, but also the many different resources that newer energy technologies will need, and the impacts that demand for these resources will have on the environment. Since Australian sub-surface energy resources are so important to our national and global prosperity, this should form a significant part of the proposed Plan.