15th July 2014

Senate Standing Committees on Economics
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Senators,

RE: The Australian Renewable Energy Agency (ARENA) Repeal Bill 2014

In this submission to the Senate Economics Legislation Committee inquiry into the ARENA Repeal Bill, we write on behalf of the Australasian Fluid Mechanics Society (AFMS) to express deep concern regarding the proposed abolition of ARENA. If this goes ahead, it would be a huge mistake. It would be a major setback to Australian capabilities for renewable energy innovation, education, and commercialisation, which would effectively eliminate Australia from the global race to develop the next generation of energy technologies.

AFMS is an independent non-profit society that supports and fosters interest in fluid mechanics and related disciplines in the Australasian region. This is done by providing a forum for people with a common interest, and by publishing or promoting relevant material. The Society aims to represent the views of its members to, and objectively inform, Government, institutes and the public in matters related to its area of expertise. It supports all those with an interest in fluid mechanics including researchers and professionals. The AFMS is charged with overseeing and supporting the Australasian Fluid Mechanics Conference (AFMC) series, the biennial meetings of which bring together the Australasian fluid-mechanics community for the exchange of scientific advances and discussions on the strategic direction of the discipline and its role in the broader community.

Many of our members are motivated by the urgent need to decarbonise our energy supply. Indeed, fluid mechanics has key roles to play in this regard. Fluid systems, and thus fluid mechanics, underpin many renewable energy technologies including wind, concentrating solar thermal (CST), biofuel combustion and gasification, large scale production of aquatic algal biofuels, geothermal, wave, and tidal energy systems. In addition it underpins weather predictions which are used to forecast of intermittent renewable resources. Fluid mechanics is also critical to all conventional combustion-based energy technology, to transportation energy efficiency of aeroplanes, ships, and vehicles, and to energy efficiency in buildings and industrial processes.

As such, we are well qualified to discuss the effects of the proposed abolition of ARENA. In this context, we note the following:
Renewable energy deployment is proceeding at an impressive and accelerating rate. Last year, renewables accounted for more than 56% of net additions to global power capacity. Significantly, 2013 also saw the first year that China installed more new renewable capacity than new fossil energy, while in the European Union this occurred for the sixth year running. Global growth of installed capacity of solar photovoltaics (PV) grew on average at 55% annually in the last five years, while concentrating solar thermal energy grew at 48%, and wind energy grew at 21%. Given these impressive and sustained growth figures, it is clear that the energy sector is undergoing a major, inexorable shift to renewables.

It is important to understand that despite this impressive growth, the technology is not yet mature. For example, as discussed in a report by Citi Group, the installed cost of PV modules declined by 80% between 2008 and 2014. These cost reductions show no sign of slowing, and Citi Group expects a further reduction of a factor of four by 2020 in levelised cost of PV-electricity. All modern renewables are on learning trajectories, and as a result of this rapid progress, residential solar PV has already achieved grid parity in Australia, while Bloomberg Energy Finance has recently estimated that the levelised cost of electricity production for new renewable capacity is now lower than new coal or gas capacity – without any government subsidies nor taking into account any cost of the pollution caused by fossil-fuel based energy.

Governments around the world recognise this accelerating trend and have significant programs focussed on renewable energy research, development, commercialisation and deployment. For example, in the United States, the Department of Energy’s Office of Renewable Energy and Energy Efficiency, which is only one of several agencies that supports renewable energy development, has an annual budget exceeding AUD 2.5 billion. In contrast, ARENA proposes expenditure of AUD 300 million over 2008-2022, i.e. around AUD 35 million per year. Given Australia’s GDP is only about a factor 10 smaller than that of the US, a commensurate level of funding would be AUD 250 million per year, more than 7 times what ARENA proposes to expend. Thus, to remain competitive in the solar energy space, if anything ARENA’s funding needs to be increased rather than cut.

Australia has an excellent capacity for innovation, with among the leading research programs in key renewable energy technologies worldwide – notably in research and development of PV cells, large CST systems, biofuels, and combustion-solar hybrid systems. For example, key technology used in the flagship PV cells manufactured by the globally largest manufacturer, Suntech (China), was developed in Australia. This capacity and leading programs of research, many of which are currently supported by ARENA, positions Australia exceptionally well to be a key player in the race to develop lower cost, higher penetration renewable energy. Cutting the funding of ARENA would be a major setback in this race, and given the very rapid international pace of development, it may well be a setback from which Australia cannot recover.

Australia has an enviable renewable energy resource, including obviously a huge solar resource but also significant wind, geothermal, and biomass resources. These significant resources mean that Australia can produce renewable energy more cheaply and effectively than almost every other nation. In a long term future, given Australia’s significant mineral and conventional energy sources, Australia could potentially even become an exporter of green energy products, such as solar fuels and solar-refined materials.

Recent announcements in the United States suggest that it is now taking a serious position on reducing carbon emissions, and there are strong indications that China will follow suit, pointing to an emerging international consensus that emissions urgently need to be limited to prevent damaging climate change. If it is not shut down, ARENA will play an important role in Australia’s response to meeting future international emissions targets. In contrast, if ARENA is abolished, it will cripple the development of Australia’s renewable energy industry, and Australia will be forced to mount a costly rear-guard action in the future in order to meet these targets.

Australia is a country that is particularly vulnerable to climate change. While opinions differ on the most cost effective way to tackle this threat, the development of renewable energy that can compete directly, without subsidies, on a cost-basis is arguably the most effective direct action strategy. Once the technology can compete on a cost-basis and at high penetration, government intervention including any carbon pricing, will simply be unnecessary. It is exactly this development that ARENA supports, and thus shutting down ARENA appears contrary to the coalition’s direct action approach.

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In closing, it is clear that a major global race is underway to develop and deploy renewable energy technology. Australia can be a key player in this race, bringing significant benefits to our economy. The rapid pace of technology development implies that divesting from this area now would cripple Australia's long term prospects of ever competing. As such we submit to the Committee that abolishing ARENA, and not replacing it with an equivalent organisation, would be a serious mistake.

Yours faithfully,

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