

Economics Standing Committee
Senate Enquiry on proposed Budget Cuts

Renate Egan
Chair, Australian PV Institute
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Removal of R&D funding for renewable energy innovation

Dear Senators,

I write to you with great concern that research and development capacity in renewables stands to be severely impacted by removing the funding from the Australian Renewable Energy Agency (ARENA) as proposed in the omnibus bill.

Australia has made commitments at the Paris Climate talks (COP21) and under Mission Innovation to double government clean energy research and development investment by 2020.

Removing granting funds from ARENA will remove the primary mechanism for delivering on this commitment, yet there is no alternative path for delivery identified.

For over 30 years there has been an Australian renewable energy funding agency in one form or another in Australia that has provided grant support for research, education and pre-commercial development. This has led to great success in generation of technology and provision of education. The energy industry is widely acknowledged as being in a critical stage of change – Australia needs to engage and continue to lead in this process. Competitive grants are accepted worldwide as a highly effective method of supporting R&D and early stage commercialisation and an essential component of technology innovation.

The APVI urges the Senate to block the proposed change that removes the budget allocation for grant funding for research and development through ARENA.

A lack of new energy-specific development via grant funding will

- damage Australian established efforts in renewable energy research and development, early stage commercialisation and education
- limit innovation through a lack of support for new technology incubation and
- reduce Australia's international competitiveness in a changing energy landscape.

The APVI represents over 80 local industry, manufacturers, researchers and stakeholders across the PV value chain, in their efforts to deploy PV safely and effectively. It undertakes background research and policy analysis for the sector to ensure that accurate information is available, standards are in place and potential issues are investigated before they become problems.

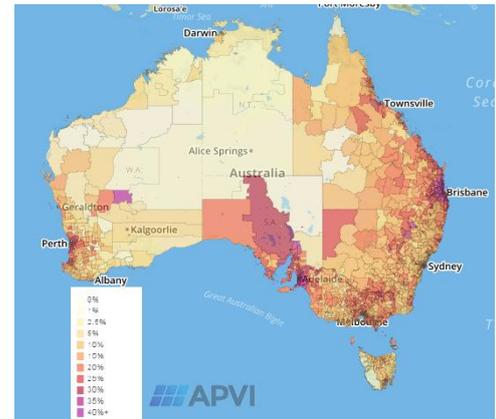
The APVI has been supported in these activities by ARENA, particularly in the Australian Solar Mapping Tools and engagement with the International Energy Agency in maintaining and reporting market data through the 'PV in Australia' Report. These activities provide analyses and information on Australian trends and world's best practice.

Lessons learned and knowledge sharing ensures Australian researchers, policy makers, manufacturers, installers and stakeholders can learn from other best practice, delivering efficient outcomes from scarce resources. This knowledge sharing relies on a framework of funding to provide for engagement and full dissemination.

Australian grant-supported innovation

Examples of successful Australian renewable energy technology development and training include:

- The Australian Solar Mapping Tools; internationally recognised for their impact on communicating the impact and opportunity for solar in distributed energy generation. The maps draw over 14,000 site visits per month and was recognised with the international Energy Globe Award, 2015.
- The Australian-developed PERC silicon solar cell constitutes about half of new solar cell production lines worldwide, and will soon dominate the worldwide solar industry according to the International Technology Roadmap for Photovoltaics (<http://www.itrpv.net/>);
- The Australian-developed hydrogen-passivation of defects that is expected to be adopted by much of the world's solar industry;
- A large fraction of international solar technology and business leaders received their undergraduate or postgraduate degrees, or technology training, in Australia.



Benefits to Australia from these achievements include royalty payments; investment by foreign companies in Australian R&D and Australian companies; student fees; preferential arrangements by foreign alumni; and international prestige at events such as the Paris climate conference. Importantly, the large impact of Australia's grant-supported researchers in accelerating the worldwide solar industry has major benefits for Australia in terms of reduced greenhouse gas emissions and reduced prices for Australian solar energy systems. Since photovoltaics now constitutes approximately one quarter of new electricity generation capacity installed worldwide each year greenhouse benefits are starting to flow in substantial measure.

An example calculation of the benefits of improved solar energy systems in Australia, based upon PERC solar cell technology, is as follows: a 5% relative efficiency improvement on 50% of Australian photovoltaic systems over the ten-year period 2018-2028, with average annual installation rate of 2 Gigawatts per year and average area-related costs of \$1,500 per kilowatt, translates to savings of \$750 million. Worldwide, the savings are about 50 times larger.

Yours Faithfully,

Renate Egan
Chair, Australian PV Institute

Ph 0408 223 653
PO Box 283, West Ryde, NSW 1685
chair@apvi.org.au
www.apvi.org.au

About the APVI

The Australian PV Institute is a not-for-profit, member-based organisation, which focuses on data analysis, independent and balanced information, and collaborative research, both nationally and internationally. Our objective is to support the increased development and use of PV via research, analysis and information.