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Australian Renewable
Energy Agency

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ARENA submission to The Select Committee Inquiry into Regional Australia

This submission summarises how ARENA's investment activities have contributed to economic opportunities for regional Australia, and will continue to do so under the Australian Government's recently released *First Low Emissions Technology Statement* (LETS) and new Budget measures.

About ARENA

The Australian Renewable Energy Agency (ARENA) was established in 2012 by the Australian Government. ARENA's function and objectives are set out in the *Australian Renewable Energy Agency Act 2011*.

ARENA provides financial assistance to support innovation and the commercialisation of renewable energy and enabling technologies by helping to overcome technical and commercial barriers. A key part of ARENA's role to date has been to collect, store and disseminate knowledge gained from the projects and activities it supports for use by the wider industry and Australia's energy market institutions.

Over the years, ARENA's projects have been a catalyst for supply chain development (e.g. large-scale solar) and investment in R&D such as solar PV efficiency has helped to drive the uptake of rooftop solar with a range of flow-on economic benefits. In some cases, ARENA's grant funding has meant that businesses have replaced outdated and inefficient equipment with innovative renewable energy alternatives.

As a key implementation agency for the LETS, ARENA is currently developing its implementation approaches and considering how our investments can best contribute to the Government's broader regional economic development agenda. Our approaches will be shaped by planned legislative changes that (if adopted) would expand ARENA's mandate and provide more flexibility for ARENA to implement the LETS. Through this period of change we expect to

retain a focus on the research, development, deployment and diffusion of new technologies that will reduce Australia's greenhouse gas emissions and promote knowledge sharing and collaboration among stakeholders.

ARENA's contribution to regional Australia through our investments to date are summarised in our [Investing in Regional Australia fact sheet](#)¹. As an example, ARENA's large-scale solar Funding Round played an important role in the development of the large-scale solar industry in Australia by helping to drive down the cost of development, construction and finance. The round also attracted international engineering, procurement and construction (EPC) providers to Australia, which further improved the cost competitiveness of local EPCs. Building, owning and operating large-scale solar farms in Australia no longer requires grant funding. Many of these large-scale solar projects are located within regional areas - the construction of these facilities can provide a temporary, but significant, fillip to local economies.

In 2019, an *Evaluation of ARENA's Impact and Effectiveness* examined job creation in Queensland and NSW and found that:

- *"The direct economic contribution from the construction of ARENA funded projects to the Central and North QLD economy is \$272.6m. The value-added to the region's economy from this investment is estimated at \$103.2m. ARENA funded projects were also expected to create 394 additional jobs (on an FTE basis) for the Central & North QLD region during construction.*
- *The direct economic contribution from the construction of ARENA funded projects to the Central West NSW economy is \$254.6m. The value-added to the region's economy from this investment is estimated at \$96.4 million. ARENA funded projects were also expected to create 339 additional jobs (on an FTE basis) for the Central West NSW region during construction."*²

Future opportunities under the LETS

The strategic intent of the LETS includes creating *lasting partnership between industry, investors, researchers, governments and the broader community to preserve and create jobs, capture new opportunities and revitalise Australia's regional economies* [...]. The LETS outlines the priority technologies with the potential for transformational economic and emissions outcomes, and includes clean hydrogen, energy storage, low carbon steel and aluminum, carbon capture and storage and soil carbon.

Together with other agencies (including the CEFC, CSIRO and the Clean Energy Regulator) ARENA will play a key role in the Government's efforts to accelerate these priority technologies and other emerging and enabling technologies also included in the LETS.

Since 2012, as technologies have matured and reached commercial viability, ARENA's investment strategy and focus has adapted. Our current set of investment priorities of *integrating renewable energy into the electricity system, renewable hydrogen and supporting*

¹ <https://arena.gov.au/assets/2020/02/investing-in-regional-australia-brochure.pdf>

² <https://arena.gov.au/assets/2019/11/evaluation-of-arenas-impact-and-effectiveness.pdf> (p.6)

industry to reduce emissions are well aligned with the intent of the Technology Investment Roadmap and the technologies highlighted in the first Low Emissions Technology Statement.

The priority low emissions technologies identified in the LETS are:

- **Clean hydrogen** - The export of low or zero emissions hydrogen to countries that are constrained in their ability to transition to native renewable energy sources is an economic development opportunity for Australia. Benefits for regional Australia will flow from the potential to co-locate hydrogen production with natural wind and solar power generation and natural geological structures that could be used for underground hydrogen storage or as permanent repositories of carbon dioxide produced from non-renewable energy usage. ARENA is currently delivering the \$70 million Hydrogen Deployment Funding Round to accelerate the deployment of renewable hydrogen technology at commercial scale. ARENA has invested \$54 million in hydrogen related activities to date.
- **Energy storage** - Energy storage (including batteries, pumped hydro and other technologies) is considered a critical enabler for the continued investment in wind and solar power generation in regional Australia. Battery production is also driving demand for minerals including copper, nickel and lithium providing economic opportunities for Australia resources industries. To date, ARENA has provided \$61.5 million in funding to six large scale lithium ion battery projects located in regional and rural Australia, providing employment and accelerating the development and commercialisation of lithium storage technologies. Other storage technologies, such as flow batteries, utilise vanadium (a mineral identified as a priority within the Australian Government's Critical Minerals Strategy). In addition, ARENA has provided \$28 million in funding to 16 pumped hydro studies, representing up to \$90 million in total study costs.
- **Low carbon materials (steel and aluminium)** - Reducing emissions from steel and aluminium production is integral to the achievement of long term global emission reductions goals. The development and implementation of low carbon production processes will support the continued competitiveness of our resource processing industries creating sustainable economic development opportunities for regional communities. ARENA is working with industry to identify pathways towards deep emission reductions in metal processing (including iron, steel and aluminium).
- **Carbon capture and storage** - Carbon capture and storage has a range of potential applications including in power generation and hard-to-abate industries such as natural gas processing and cement that are significant employers in regional Australia.
- **Soil carbon** - Increasing the carbon content in our soils can enhance agricultural productivity while providing new revenue opportunities for farmers in the form of carbon offsets. Accurately measuring changes in soil carbon is a barrier to widespread adoption of soil carbon sequestration on a broad scale.

The LETS identifies 16 emerging and enabling technologies that are likely to play an important role in Australia's transition to lower emissions. To date, ARENA has provided funding to projects in a number of related areas that will increase renewable energy usage while also supporting economic development in Australia's regions:

- **Innovative generation** - ARENA has funded a number of hybrid renewable power systems for off-grid or fringe-of-grid uses in agriculture or mining, solar thermal for use in manufacturing and mining. A heightened interest in microgrids reflect the increasing

potential for solar and storage to reduce diesel fuel consumption and costs in regional and remote area power systems. ARENA's Regional Australia's Renewables (RAR) program supported a number of off-grid microgrid projects that supplied remote isolated communities, isolated mining loads and a combination of both.

- **Low emissions heat** - ARENA has funded a number of projects and studies supporting low emissions heat in rural areas. For example, ARENA funding helped MSM Milling to install a biomass boiler to replace use of LPG at its Manildra plant. ARENA also contributed funding to the Australian Alliance for Energy Productivity (A2EP) to undertake 20 pre-feasibility studies and 10 feasibility studies into renewable energy options for process heat. Many of the sites studies were in regional areas, such as: Leeton (NSW), Devonport (Tas), Ballarat (Vic), Griffith (NSW), Wadonga (Vic), Myrtleford (Vic), Whitton (NSW), Yenda (NSW) and Kyneton (Vic).
- **Waste-to-energy and recycling** - ARENA has funded a number of active and approved projects that utilise agricultural processes and wastes to produce liquid fuels, biogas and renewable power. ARENA has also funded the Australian Biomass for Bioenergy Assessment, which is part of the Australian Renewable Energy Mapping Infrastructure. ARENA's soon to be released Bioenergy Roadmap will help inform the focus of future Low Emissions Technology Statements.
- **Vehicle charging and refuelling infrastructure** - ARENA has committed a total of \$21.0 million to two ultra-rapid battery electric vehicle charging infrastructure projects led by Chargefox and Evie Networks. These projects have a number of stations in regional areas to allow for the connection of key highways throughout Australia to form a "backbone" charging network.

The LETS identifies that ARENA, the CEFC and the Clean Energy Regulator will be the key delivery agencies for the Roadmap.

2020-21 Budget measures

ARENA will administer funding for the following measures announced in the 2020-21 Budget:

- **Regional and Remote Communities Reliability Fund (Microgrids)** - The purpose of the expanded Regional and Remote Communities Reliability Fund (Microgrids) is to support pilot studies for microgrids in regional and remote areas. It complements the Business Grants Hub's Regional and Remote Communities Reliability Fund program, which supports microgrid feasibility studies for off-grid and fringe-of grid communities in regional and remote areas.
- **Future Fuels Fund** - The purpose of this fund is to invest in areas that reduce barriers for businesses and fleets to choose new vehicle technologies in the road transport sector as well as increasing the national public charging network. This will reduce barriers to greater transport use of hydrogen and biofuels through co-investing in refuelling infrastructure.
- **Freight Energy Productivity Program** - The Program aims to increase the use of new truck technology to improve fuel efficiency in the road freight sector, increase productivity and reduce emissions.

ARENA is currently undertaking detailed program design for these Budget measures.

Please contact Jon Sibley, Principal Policy Advisor (jon.sibley@arena.gov.au) if you would like to discuss any aspect of ARENA's submission.

Yours sincerely

Darren Miller

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