

**ADVANCING SOLAR IN AUSTRALIA  
THROUGH RD&D INVESTMENT**  
FINAL REPORT -  
SUMMARY FOR STAKEHOLDERS

JANUARY 2017



Australian Government  
Australian Renewable  
Energy Agency

**ARENA**

## Advancing solar in Australia through RD&D investment

### Summary for stakeholders

ARENA has conducted a review of the Australian and global solar research, development and demonstration (RD&D) sector. This was initiated through an in depth review and analysis drawing on existing literature, extensive stakeholder engagement in Australia and globally, and guidance through an expert panel. The review was undertaken to identify the highest priority RD&D needs to accelerate the competitiveness of solar energy in Australia, and the most efficient investment approach to maximise research outcomes and economic and social returns. The key findings of the review are detailed in the report: Advancing solar in Australia through RD&D investment ('Report').

ARENA has conducted follow up stakeholder engagement to refine the four key challenges identified in the review which are constraining growth of solar energy in Australia.

The outcomes of this work will inform ARENA's investment pathway for solar, to be captured in ARENA's Investment Plan in 2017. Future investment in solar RD&D will address key challenges, and contribute to Australia's commitments to Mission Innovation<sup>1</sup>.

### Review Key Findings

The review identified four critical challenges constraining the growth of solar energy in Australia.

- Challenge 1: Further reduction in solar costs and improvement in reliability
- Challenge 2: Improvements in the capacity of existing grids to accept intermittent supply sources for solar electricity generation
- Challenge 3: Identifying and developing attractive new applications
- Challenge 4: A supportive regulatory environment

The review identified Australia's solar RD&D sector as needing a mix of:

- Long term academic research to identify future step changes in technology, and
- Near term commercialisation research to underpin the transition from the laboratory to market adoption.

### ARENA's Next steps

ARENA has begun work on the review's key findings (detailed in the Report).

Next steps include:

- **Continued funding for early stage research in photovoltaics (PV)**, including continued support for the Australian Centre for Advanced Photovoltaics (ACAP). Focus will be on step-change and transformational improvements to efficiency, improved capacity factors, reduced manufacturing and Australian-specific installation costs, and increased lifetime of key system components (e.g. PV modules).
- **Continued funding for concentrating solar thermal power (CSTP)**, including continued support of the Australian Solar Thermal Research Initiative (ASTRI). The aim is to prove the viability of CSTP technology through demonstration of components like high temperature sodium receivers, supercritical CO<sub>2</sub> cycles, and modular scalable CSTP systems. This would be a step towards utility scale facilities with large-scale storage capability to support secure and reliable electricity supply in the long term.
- Proactively convening meetings of key industry stakeholders to develop solutions to the challenge of integrating variable renewable generation with Australia's grid through further investment in **ARENA's grid integration innovation lab, A-Lab**.
- **Continued support for projects demonstrating large-scale storage** solutions to balance electricity supply and demand, build a local market and demonstrate capability of these systems to improve system reliability in a grid with increasing variable generation.

The review's findings are feeding into ARENA's wider investment priority setting, including more in-depth investigation into how ARENA could best invest to achieve long-term outcomes, in industrial processes and exports underpinned by renewable energy.

### Contact details

To provide feedback or seek further information, please contact ARENA at [consultations@arena.gov.au](mailto:consultations@arena.gov.au).

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1 <http://mission-innovation.net/>

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