Australian Government
Cotton Research and Development Corporation

TRAVEL, CONFERENCE or SCIENTIFIC EXCHANGE REPORT 2017

Part 1 - Summary Details

Please use your TAB key to complete Parts 1 & 2.

CRDC Project Number: CSD1702

Project Title: Attend Australian Energy Storage Conference 2017

Project Commencement Date: 14/6/2017 **Project Completion Date:** 15/6/2017

CRDC Research Program: 1 Farmers

Part 2 – Contact Details

Administrator: Jon Welsh
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Principal Applicant: Jon Welsh
Organisation: CSD - details as above
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Supervisor: N/A
Organisation:
Postal Address:
Ph: **Fax:** **E-mail:**

Signature of Research Provider Representative: _____

Date Submitted: _____**26 June 2017**

Part 3 – Travel, Conference or Scientific Exchange Report

(Maximum two pages)

1. A brief description of the purpose of the travel.

To investigate the latest energy storage technology which may be applicable to irrigated cotton pumping systems, with the view to lowering energy costs.

2. What were the:

a) major findings and outcomes

- Lithium-ion battery technology is becoming more affordable in some scenarios. Several case study presentations on incorporating solar/batteries into hospitals and schools revealed low payback periods and high penetration (~80%) lowering the dependence on grid technology;
- Flywheel energy storage - a potential addition to energy storage for irrigators. Flywheel provides short term energy and offers flow-on benefits through longevity of battery storage systems, which are renowned for a short (10 y) life;
- Cost of solar - the cost of solar has continued to be reduced through productivity gains. The reduction in RECs from 15 to 14 years has been mnore than offset by a reduction in panel prices; and
- Engineering contacts and providers to regional areas - I have made contacts of companies servicing cotton areas. Competition among service providers has been an issue in remote areas where cotton is grown.
- Hydrogen as an energy source - some interesting R&D going on in this space which will be investigated further in the next 3 year project term.

b) other highlights

- Hybrid vehicle technology
- Industrial storage technology - large projects in California
- Roundturn and battery storage - "energy in vs energy out" on a charge cycle for a range of different battery technologies

3. Detail the persons and institutions visited, giving full title, position details, location, duration of visit and purpose of visit to these people/places. (NB:- Please provide full names of institutions, not just acronyms.)

Ben Kolle - Gem Energy
Aaron Hilton - Gem Energy
Raegan Jubb - Solar Edge
Terry Teoh - Zen Energy
Brian Power - ANT solutions
Jae Han - LG Chem
Tony Hunter - SPB storage

Suppliers and engineers of energy storage and solar PV equipment

4. a) Are there any potential areas worth following up as a result of the travel?
b) Any relevance or possible impact on the Australian Cotton Industry?

Yes. Multiple combinations of energy storage solutions for investigation/application to irrigators.

5. How do you intend to share the knowledge you have gained with other people in the cotton industry?

The findings, contacts and resources will be used in the upcoming contract - FRP051 "Climate and Energy for cotton farming businesses" commencing on 3 July, 2017. Results of feasibility will be disseminated as per project requirements i.e e-news, face-to-face workshops, conferences etc.

Please email your report 30 days after travel/conference to: research@crdc.com.au