



Australian Government  
Australian Renewable Energy Agency

ARENA

# *The Australian off grid market*

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Isolated Power Systems Connect 2016, Flinders Island

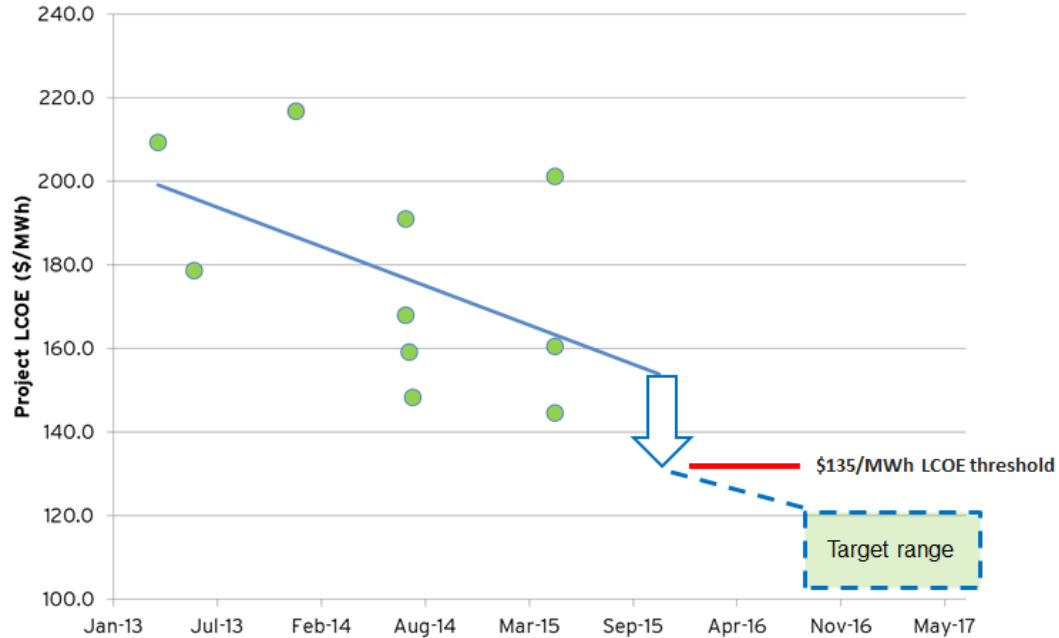
1 December 2016

# What's ARENA doing in this rapidly evolving sector?

- Funding projects
- Collecting and disseminating data
- Identifying and tackling common problems

# Large Scale Solar becoming bankable

Solar PV in Australia is approaching the \$135/MWh LCOE mark



# Operating Off Grid projects

## Rio Tinto - Weipa

- Reliability story - 99.73% availability
- Low penetration PV = low risk
- Operating 14 months
- 600,000 Litres of diesel saved per year

## Voyages

- Long term power supply
- Commercial load
- Operating 8 months

## Degrussa

- 10 MW PV and 6MW of storage into

# ARENA's suite of Off Grid projects

## Projects for mining operations

DeGrussa: <http://arena.gov.au/project/degrussa-solar-project/>

Weipa: <http://arena.gov.au/project/weipa-solar-farm/>

**Redeployable solar** - main focus for this project is to address high CAPEX of fixed solar and short mine life through a redeployable solar solution on a leasing arrangements, but also promising option for other opportunities where there is a need for short-term power supply.

<http://arena.gov.au/project/redeployable-hybrid-power/>

Plus their knowledge sharing report:

<http://arena.gov.au/files/2016/04/Laing-ORourke-MS-2-ii-Case-Study.pdf>

## Community off-grid energy projects

Cooper Pedy: <http://arena.gov.au/project/cooper-pedy-renewable-diesel-hybrid/>

Lord Howe Island: <http://arena.gov.au/project/lord-howe-island-hybrid-renewable-energy-system/>

Rottnest Island: <http://arena.gov.au/project/rotnest-island-water-and-renewable-energy-nexus-wren-project/>

Flinders Island: <http://arena.gov.au/project/flinders-island-hybrid-energy-hub/>

Kind Island: <http://arena.gov.au/project/king-island-renewable-energy-integration-project/>

SETuP: <http://arena.gov.au/project/northern-territory-solar-energy-transformation-program/>

Yulara: <http://arena.gov.au/project/yulara-solar-project/>

Doomadgee: <http://arena.gov.au/project/doomadgee-solar-project/>

Karratha airport: <http://arena.gov.au/project/karratha-airport-solar-plant/>

# ARENA's suite of Off Grid projects (cont.)

## Cloud forecasting

Fulcrum 3D cloud forecasting: <http://arena.gov.au/project/predicting-cloud-movements-to-maximise-solar-pv-use/>

Plus their knowledge sharing report: <http://arena.gov.au/files/2016/11/Fulcrum3D-CloudCAM-ARENA-Public-report.pdf>

## Studies

CSIRO plug and play: <http://arena.gov.au/project/plug-and-play-solar-power/>

AgGrow: <http://arena.gov.au/project/investigating-a-bioenergy-alternative-for-mines/>

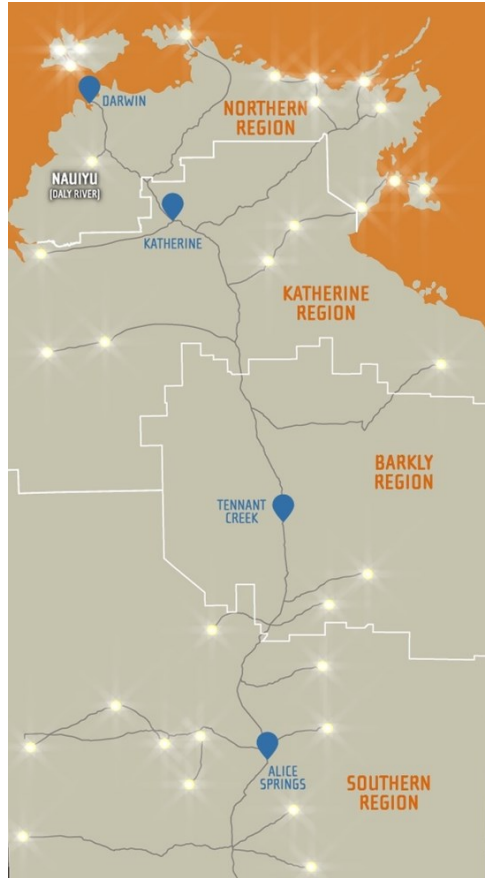
AECOM strategy report for ARENA (a bit dated now): [http://arena.gov.au/files/2014/12/ARENA\\_RAR-report-20141201.pdf](http://arena.gov.au/files/2014/12/ARENA_RAR-report-20141201.pdf)

## Recent blog

From Coober Pedy to Jakarta: How Australia's off-grid revolution can help Indonesia's shift to renewables

<http://arena.gov.au/news-media/blog/coober-pedy-to-jakarta/>

# Different business cases for different needs



## SETuP

- Business transformation
- 30 sites
- 10MW solar PV integrated with existing diesel
- Diesel fuel displacement

# Part of a greater plan for sustainability

## Rottnest Island

- One element of a 20 year vision for Rottnest Island's sustainability
- Scaleable platform
- Increase RE generation to 45%
- Displace diesel
- Demand side management for water desalination





# Off Grid RE solutions make sense

## DeGrussa

- Copper-gold mine
- High penetration solar + storage + integration
- 5,000,000 Litres of diesel saved per year
- Commissioned in June 2016
- 3<sup>rd</sup> party diesel operator
- 3<sup>rd</sup> party debt financed



# You have everything to gain from each other

- Ask for what you need
- Share what you've learnt
- You're helping to grow this market



# ARENA is here to help connect you to the info you need

## How we can help

- Providing operations performance data
- Building an evidence base
- Running small workshops
- Developing products for end users





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# Thank you

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