

ISOLATED POWER SYSTEMS CONNECT 2017
ROTTNEST ISLAND, WESTERN AUSTRALIA
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Australian Government
Australian Renewable
Energy Agency

ARENA

ARENA and its investment priorities

INVESTMENT PRIORITIES



DELIVERING SECURE AND RELIABLE ELECTRICITY

Delivering affordable low emission electricity solutions that keep the lights on.



ACCELERATING SOLAR PV INNOVATION

Making solar PV more efficient and affordable through research and development.



IMPROVING ENERGY PRODUCTIVITY

Helping reduce energy cost and emissions in the transport, building and industry sectors.



EXPORTING RENEWABLE ENERGY

Creating new, scalable export value chains in renewable energy.



Regional Australia's Renewables (RAR) initiative

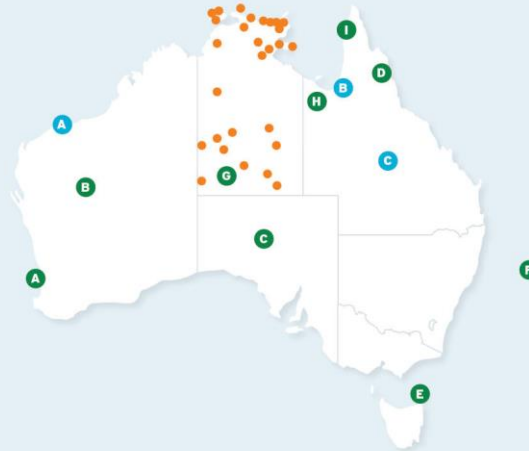
- RAR initiative open to applications June – December 2013
- Funding Agreements for ARENA grant funding executed between 2014 – 2015
- First project commissioned in 2014, most projects commissioned in 2017
- Grant funding for projects focussed on displacing diesel in communities and mines
- Program had multiple aims:
 - Bridge commerciality gap
 - Stimulate off-grid and fringe-of-grid renewable energy market
 - Reduce project risk for stakeholders
 - Reduce long-term system risk (through building demonstration projects as benchmarks)



RAR projects

ARENA REGIONAL AUSTRALIA'S RENEWABLES PROGRAM PROJECTS

- SOLAR PV**
- A** Karratha, WA
 - B** Normanton, QLD
 - C** Barcaldine, QLD
- HYBRID**
- A** Rottnest Island, WA
 - B** DeGrussa, WA
 - C** Coober Pedy, SA
 - D** Lakeland, QLD
 - E** Flinders Island, TAS
 - F** Lord Howe Island, NSW
 - G** Yulara, NT
 - H** Doomadgee, QLD
 - I** Weipa, QLD
 - SETuP, NT

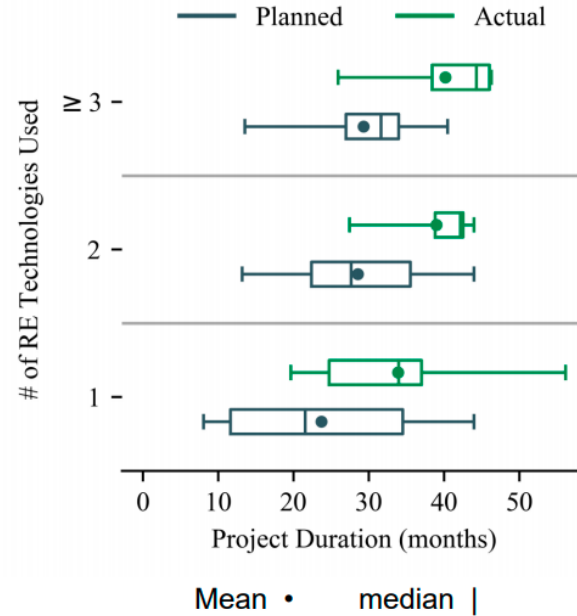


Project	Application	PV (MWp, MWdc)	Wind (MW)	Battery Storage
Barcaldine	Fringe-of-grid	25	-	-
Coober Pedy	Off-grid community	1.34	4.1	1 MW, 0.5 MWh
DeGrussa	Off-grid mine	10.56	-	6 MW, 1.81 MWh
Doomadgee	Off-grid community	0.264 + 1	-	-
Flinders Island	Off-grid community	0.2	0.9	0.75 MW, 0.3 MWh
Karratha Airport	Fringe-of-grid	1.02	-	0.47 MW, 0.32 MWh
Lakeland	Fringe-of-grid	13	-	1.4 MW, 5.3 MWh
Lord Howe Island	Off-grid community	0.45	0.55	0.4 MW, 0.4 MWh
To be announced	Off-grid community	0.51	-	3.75 MW, 1.5 MWh
Normanton	Fringe-of-grid	5	-	-
NT SETuP	Off-grid community	10	-	0.8 MW, 1.6 MWh
Rottnest Island	Off-grid community	0.6	0.6	-
Weipa	Off-grid mine	1.71	-	-
Yulara	Off-grid community, tourism	1.8	-	-



Project timelines

- Most projects have been unable to complete within the planned timeframe
- Delays averaged 10-12 months
- Causes:
 - Securing financing
 - Land acquisition
 - Legal approval
 - (Minor) project execution delays
- All delays compound stakeholder risk



Lessons learnt

- Remoteness sites are far removed from supply of labour, spares and institutional knowledge – everything more expensive
- Tendency to underestimate capital costs in remote locations, where integration and stakeholder engagement is more difficult/expensive
- Good design and execution is critical: important to communicate concepts and actively educate stakeholders to manage risks effectively
- Developers of projects underestimate risk aversion to new technology and overestimate capabilities of the technology
- RAR was actually a demonstration, not deployment, program (despite ARENA's expectations)



Knowledge sharing and data

- ARENA finding that project budgets are being squeezed, which is causing recipients to reconsider installing monitoring equipment
- Important not to underestimate importance of monitoring equipment and collecting data about both existing equipment (e.g. performance of diesel gensets) and proposed equipment (e.g. meteorological data)



Resources available

- ‘Identifying risks, costs and lessons from ARENA-funded off-grid renewable energy projects in regional Australia (EU PVSEC paper)
- ARENA publications: An introduction to ARENA’s Remote and Regional Projects
 - Insights from the portfolio of projects funded under the Regional Australia’s Renewables (RAR) Program
 - The data specification design to benefit financial and operational yields
- Knowledge Sharing Reports - DeGrussa Solar Project
- Laing O’Rourke White Paper
- And more to come...If you have a need, let us know.



Thank you

Contact us at offgrid@arena.gov.au

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