



Australian Government
Australian Renewable
Energy Agency

The Australian Renewable Energy Agency and the New Energy Course

Argus Australia Power Generation Fuels



27 February 2013

www.arena.gov.au

Summary

- The Australian renewable energy landscape
- ARENA driving a new course
- Opportunities through ARENA
 - Driving renewable energy deployment in regional and remote locations
- Investment highlights



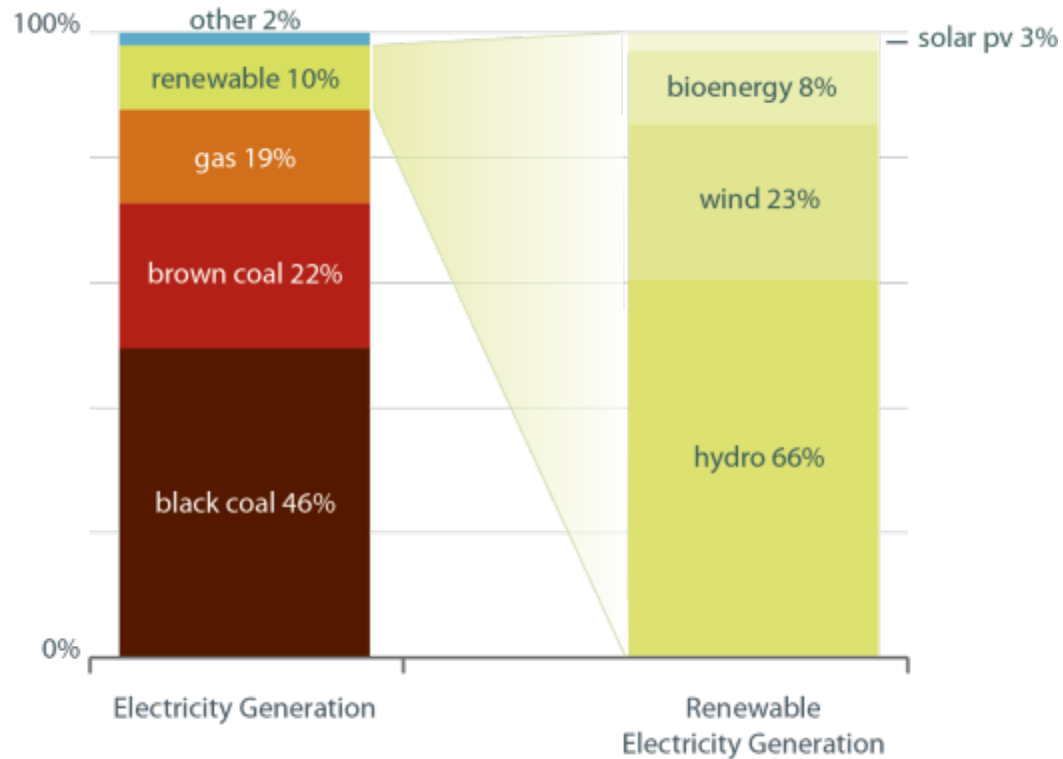
1. The Australian Renewable Energy Landscape



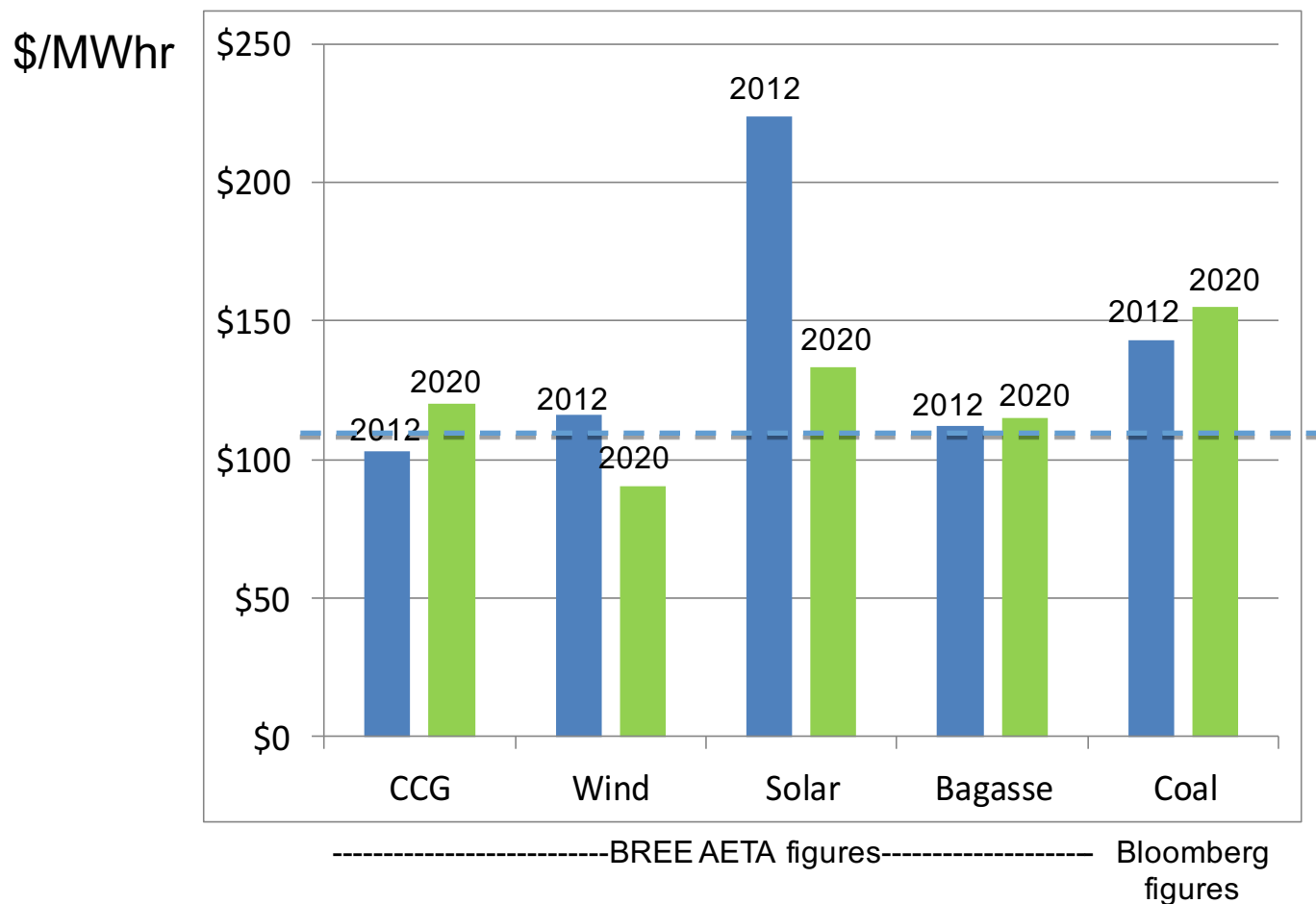
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Australian electricity generation 2010-11



Levelised Energy Costs in 2012 and 2020



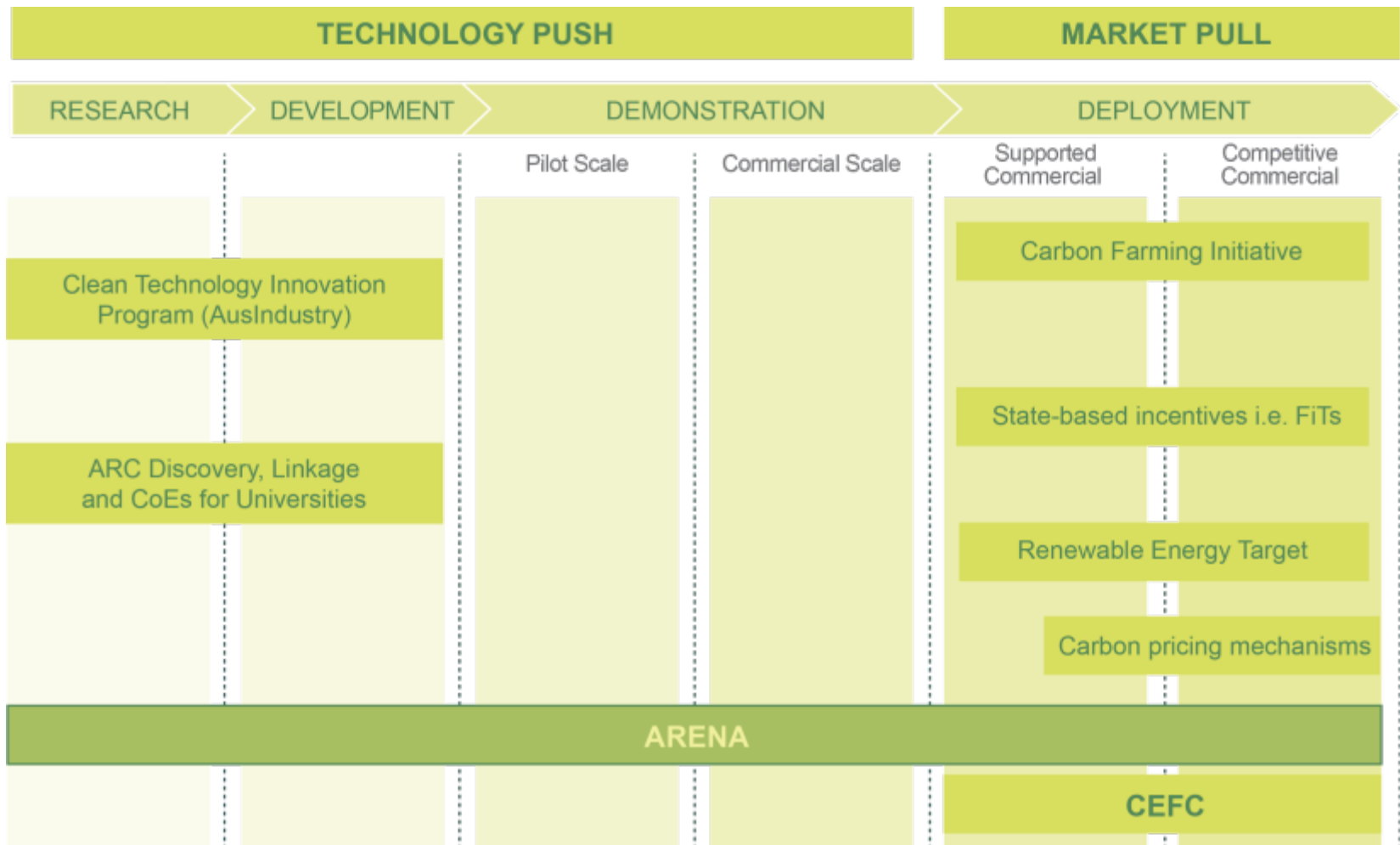
2. Policy drivers



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Australian Government support for renewable energy technology development



General Funding Strategy

GENERAL PRINCIPLES

COMPLEMENTARITY
CONFIDENCE BUILDING
DIVERSITY

ALONG THE WHOLE INNOVATION CHAIN

RESEARCH (basic and applied)
DEVELOPMENT
DEMONSTRATION
COMMERCIALISATION

INVESTMENT PLAN

STRATEGIC INITIATIVES
SUPPORTING INITIATIVES
COMPLEMENTARY INITIATIVES



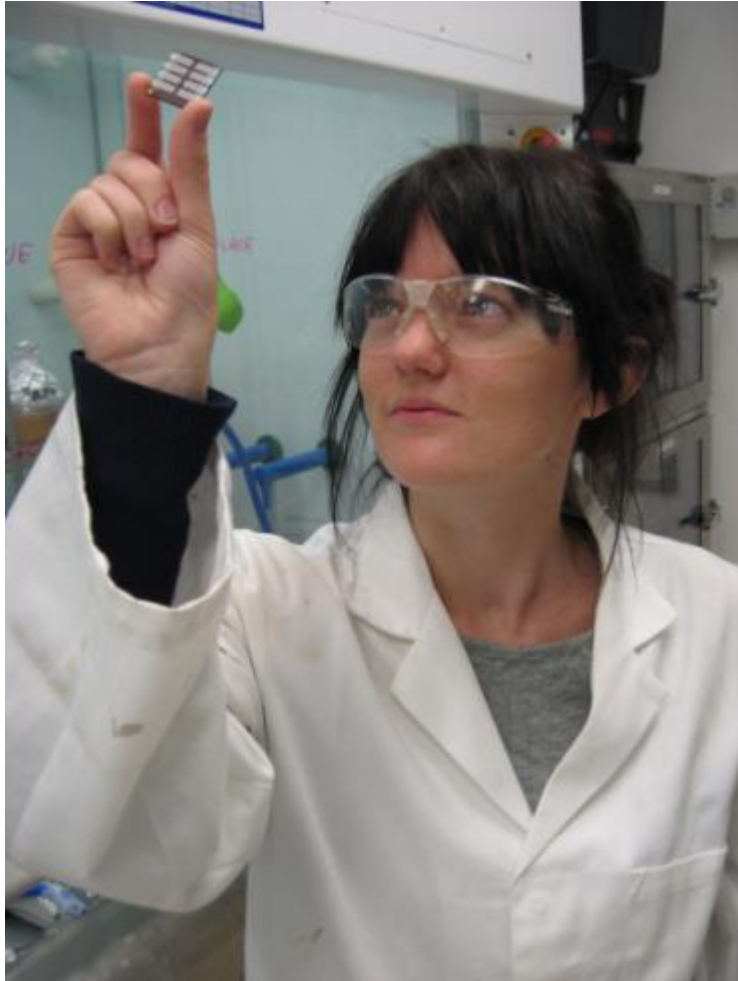
3. Opportunities through ARENA



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Current Opportunities



Current funding opportunities through ARENA:

- \$126 million Emerging Renewables program
- \$200 million Southern Cross Renewable Energy Fund

Coming up:

- Regional Australia's Renewables program
- SHARE (Supporting high value Australian renewable energy)



Regional Australia's Renewables

PROPOSED OUTCOMES



At least 50 MW of renewable energy capacity installed by 2020

2 x

10 MW or more renewable energy systems by 2018



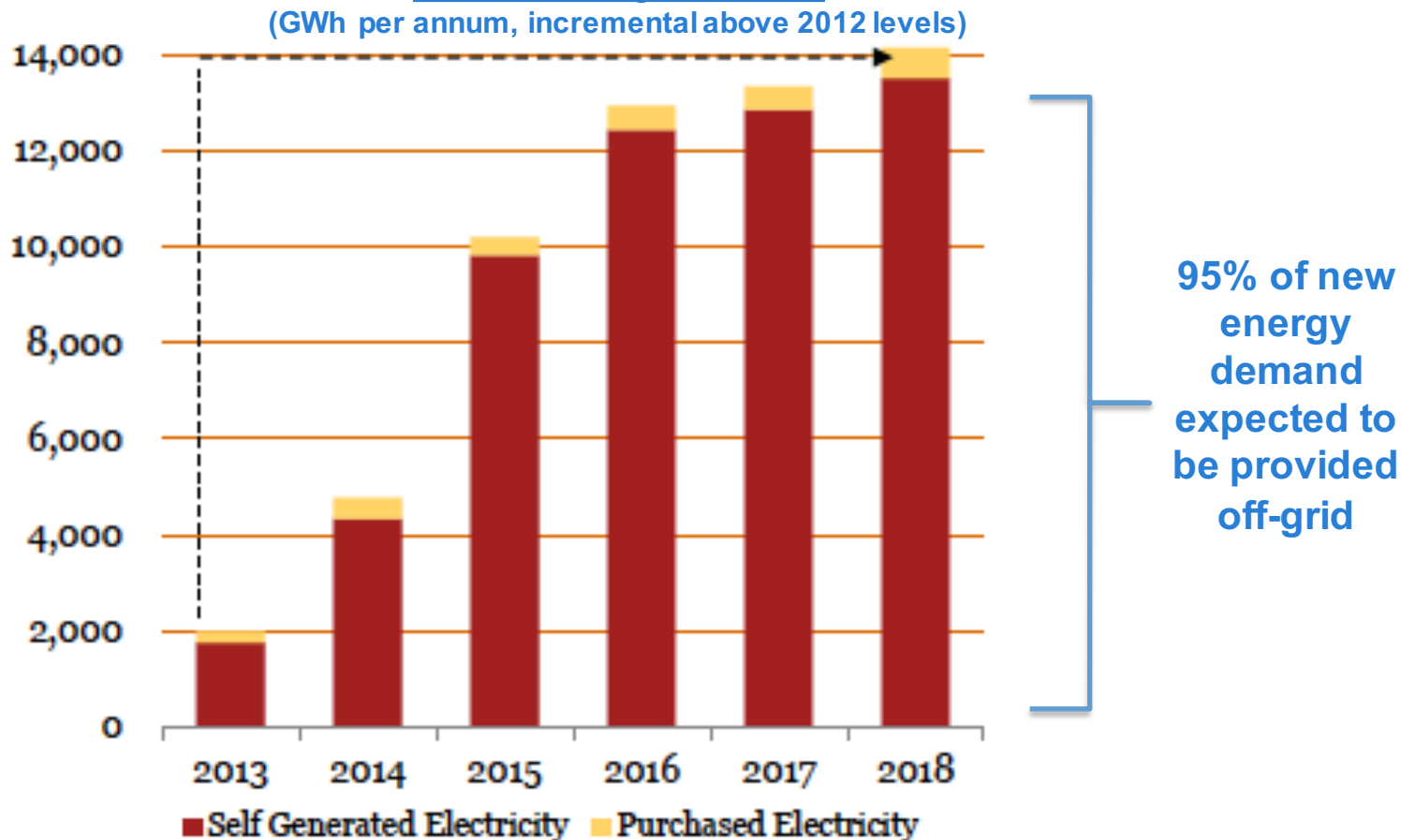
Roadblocks removed. Trained operators of renewables

	Industry	Community	Roadblocks
Size	1MW or more	100kW – 1MW	No size
Type of Support	Grants - capital / or revenue subsidy	Grants - capital subsidy	Grants – project costs
Location of projects	Off-grid or fringe-of-grid	Off-grid	Focus on - system issues, demand management, control systems, storage optimisation etc



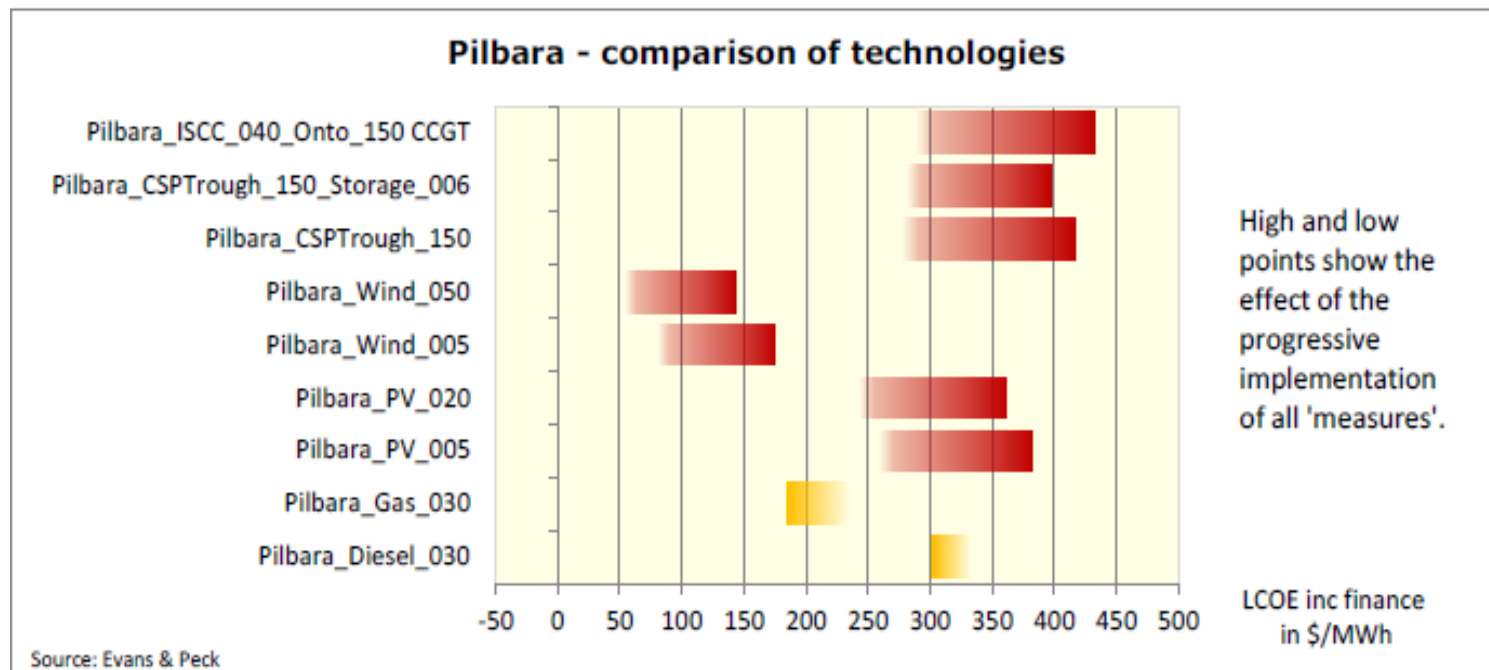
Off-Grid demand is growing: Example WA mining

Example: WA Forecast Increased Minerals And Energy Electricity Demand By Source



The economics of off grid renewables and diesel in Pilbara

Summary of LCOE costs (\$/MWh) for relevant technologies



Barriers to renewables in off-grid applications

Areas noted as “Barriers” to renewable energy by off-grid system owners

Capital Cost

High capital costs. May be misalignment between renewable payback period and business case period (e.g. mine life)

Output / Reliability

Concerns about intermittency, monitoring and forecasting systems, integration with other systems (e.g. diesel hybrid), power quality

Skills & Maintenance

Access to people with expertise to maintain renewable generation plant

Sources: Responses from Clean Energy Working Group, ARENA consultations, ARENA case study research



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Investment opportunities

- Nimble in identifying and capitalising on opportunities to accelerate deployment
 - Capacity to initiate projects, commission research and undertake one-offs
 - Flexible and open to ideas
- Regional Australia's Renewables
 - Looking for energy intensive industry leaders ready to partner with ARENA to set a benchmark for renewable energy



4. Investment highlights



Managing \$650 million in projects and measures



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ARENA support for biofuels

- Emerging Renewables Program Measure – Qantas Feasibility Study on Producing Alternative Aviation Fuels
- \$5 million to the JCU High Energy Algal Fuels Project in Townsville
- \$15 million Advanced Biofuels Investment Readiness (ABIR) Program



CS Energy: Kogan Creek Solar Boost Project



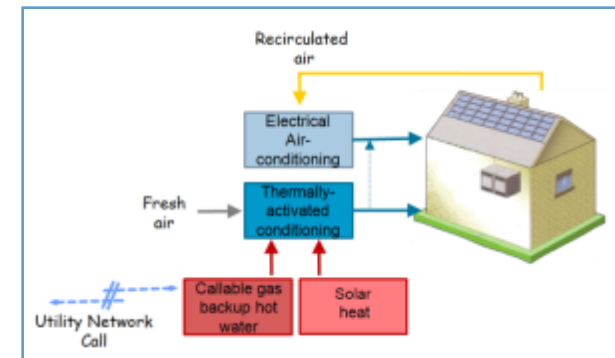
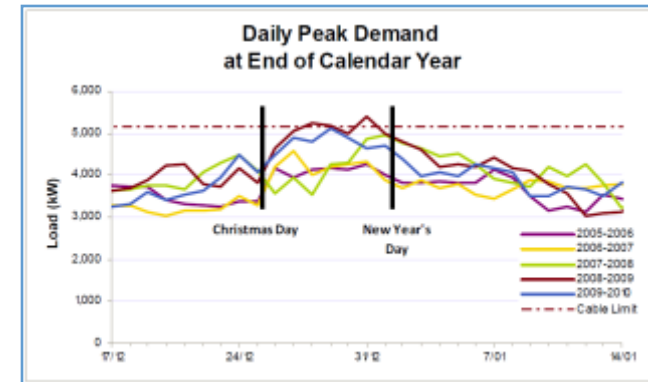
- \$34.9m funding for \$104.9m project
- Project will be the world's largest solar integration with coal fired power station
- 44 MW solar thermal addition to the existing 750MW Kogan Creek Power Station
- AREVA Solar's CLFR technology
- 30 hectare solar field
- Operational in 2013



CSIRO: Solar Energy Management (SEM) system for utilities

CSIRO, Ergon Energy, GWA Group

- \$0.2m funding for \$0.6m project
- Combines CSIRO's thermally-driven residential desiccant solar cooling technology with novel SEM system
- Natural gas-powered back-up
- SEM technology will be tested in 3 residential buildings



RATCH: Pathway to Solar Thermal for Coal-Fired Collinsville

- Feasibility study to assess the viability of converting Queensland's 180 MW coal-fired Collinsville Power Station to a 30 MW hybrid solar thermal/gas power station
- \$2.5m for RATCH Australia
- Results will be publically available



Summary

- Renewables are increasingly cost competitive
- ARENA understands barriers remain to the commercial readiness of renewable technologies
- ARENA looks forward to working with technology developers, industry, communities and network operators to grow renewables in the off-grid sector and Australia more broadly.

