

SEGRA 2016-17 Challenge 4

How can we get off the grid and secure 24/7 renewable energy for sustainable regional development?

The purposes of the *Challenge* pitch were threefold.

1. To introduce and explore the advantages and benefits of 24/7 thermal generation systems for sustainable regional development to potential stakeholders and investors from regional organisations, Local Government Authorities (LGAs) and communities of interest.
2. To identify the essential actions that stakeholders need to take to get off the grid and secure 24/7 renewable power in rural and remote regions. For example:
 - initiating appropriate regional and local ownership and governance for the initiative
 - undertaking focused pre project feasibility to ensuring that there will be power purchasing agreements
 - identifying sources and securing funding
 - carrying out triple bottom line project feasibility assessment
 - planning and siting installations to optimise existing and potential regional resource and industrial enterprise advantages
 - cost effectively delivering 24/7 CSP to regional customers
3. To foster stakeholder confidence and indicate the pathway to self-empowerment in order to take the essential actions for securing 24/7 renewable energy for sustainable regional development.

Notes from Challenge 4 *Promotion Poster* confirmed the popularity of the topic to attendees and they made the following points:

- Battery storage options are essential,
- Micro-grids and energy efficiency programs must be part of the energy efficiency mix to optimise 24/7 renewable electric power
- Incentives-financial and taxation incentives are essential
- Can't rely on early adopters-the financial case must make sense
- Communities need to invest in solar thermal technology because 24/7 capability is proven and it stacks up economically
- If goal is town based off-grid, then designate de-risked areas for renewable projects so that they can be installed quickly and at lower cost
- Consider community solar projects -refer to RMI ORG (Rocky Mountains Institute for recent technical paper)
- Look at partnering solar and geo thermal technology in a comprehensive system as ambient air temperatures and other factors make them work well together. Look at utilising the grid structure where it exists to ensure value of the investment is retained (ie 75% of electricity bill in Qld is paying of infrastructure)
- Need political will and commitment such as a national renewable energy policy and a dedicated minister
- Need to overcome the issue of obtaining power purchasing agreements before the renewable energy industry can really take off and support itself

- Identify locations where grid access is weak and there are potential situations to undertake case studies and demonstrate renewable energy options
- Overcome concerns raised that lower numbers of users on the grid because of off-grid systems could increase power costs to those who have no choice but to remain on the grid

Participants in the *Challenge Session* on the 26th urged that the realities in being able to 'get off the grid' be acknowledged. Specifically, we have:

- wind power installations of a range of generating capacities
- solar voltaic (SV) systems at scales ranging from household roof tops to supplying community and industrial needs
- concentrated solar power (CSP) at demonstration and small industrial installation scales
- 24/7 renewable energy at the property and enterprise scales

Also, it was recognised that we already have proven technology to store electricity chemically and thermally. However, it was also acknowledged that we don't yet have 24/7 at the decentralised community scales in Australia. And that the technology used overseas for thermal storage was developed in this country.

In summing up, participants in the *Challenge Session* were in full agreement that:

- People in regional Australia want to reduce dependence on grid based centralised fossil fuel electricity
- Although we don't currently have integrated electricity storage systems to ensure 24/7 supply we have the wherewithal to overcome this situation.

To this end, participants in the *Challenge Session* listed the ingredients for getting off the grid as follows.

- A vision and belief that it can be done
- Political will to initiate and deliver
- Appropriate independent corporate entity to drive the initiative
- Power purchasing agreements to guarantee cash flow
- Suitable places to locate projects
- Eclectic and open minds towards the technology mix to generate and store electricity
- Identified collaborative/innovative PPP funding sources

Participants emphasised that the way forward needs to be underpinned by:

- Community commitment
- Ongoing championing
- Passion to succeed and to celebrate

Participants saw the next action step to be undertaken is a set of awareness raising sessions at selected centres in regional Australia and this could be catalysed by a workshop/forum at **SEGRA 2017**.