
APVI Storage Workshop

Discussion

March 2014

Background

The APVI hosted a Workshop on *Storage Solutions and the Future of the Electricity Grid* as part of the International Battery Association Conference, Brisbane, 5th March 2014.

Program:

- 2:15pm** Jonathan Pye (GSES) - What electricity customers are currently doing with storage; why and where might this be headed?
- 2:45pm** Michelle Taylor (Ergon Energy) - What aspects of storage are electricity utilities interested in for better grid management?
- 3:15pm** Discussion & Afternoon Tea
- 3:45pm** Adrian Ho (SMA-Australia) – Grid Connected Storage Solutions already available right here, right now
- 4:15pm** Graeme Bell (Hybrid Energy Consulting) - Assessing and valuing the various approaches to incorporating storage in the grid.
- 4:45pm** Discussion & Drinks

Two discussion sessions were held and are summarised below:

Discussion

Issues still needing resolution with regard to storage uptake include:

- truer costing of battery options and trends - NPV and LCA over a variety of battery technologies
- matrix of advantages and disadvantages of different types of batteries (technical and operational parameters, including implications of different cycling regimes)
- which battery is most appropriate for which application
- failure modes and how best to monitor for them
- state of charge implications and field test measurement
- temperature tolerances and implications
- relative social / economic merits of network-focussed storage (policy) solutions cf individual customer approaches
- how fast is the storage landscape likely to keep changing, what new trends are on their way, and can regulatory change keep pace
- What physical sizes are available and what standardisation should be targeted
- merits of roll-out of big storage projects (utility scale) versus many small applications (residential and small commercial)

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- What are the reasons behind and implications of tier 1, 2 and 3 battery suppliers?
- What manufacturing regulations apply
- What standards are relevant for installation and operation
- What regulations exist or should be developed regarding export to the grid
- What grid interfaces are available or are needed to optimise storage use and performance
- What values can the PV inverter provide wrt storage interface

Attachment A: Background on the APVI

The APVI is an association of companies, government agencies, individuals, universities and research institutions with an interest in solar photovoltaic electricity. In addition to Australian activities, we provide the structure through which Australia participates in the International Energy Agency (IEA) PVPS (Photovoltaic Power Systems) and SHC (Solar Heating and Cooling) programmes, which in turn are made up of a number of activities concerning PV and solar system performance and implementation. Further information is available from www.apvi.org.au.

APVI Objective

The objective of the APVI is to support the increased development and use of PV via research, analysis and information.

APVI membership provides:

Information

- Australian PV data and information
- Standards impacting on PV applications
- Up to date information on new PV developments around the world (research, product development, policy, marketing strategies) as well as issues arising
- Access to PV sites and PV data from around the world
- International experiences with strategies, standards, technologies and policies

Networking

- Opportunity to participate in Australian and international projects, with associated shared knowledge and understanding
- Access to Australian and international PV networks (PV industry, government, researchers) which can be invaluable in business, research or policy development or information exchange generally
- Opportunity to meet regularly and discuss specific issues which are of local, as well as international interest. This provides opportunities for joint work, reduces duplication of effort and keeps everyone up to date on current issues.

Marketing Australian Products and Expertise

- Opportunities for Australian input (and hence influence on) PV guidelines and standards development. This ensures both that Australian products are not excluded from international markets and that Australian product developers are aware of likely international guidelines.
- Using the information and networks detailed above to promote Australian products and expertise.
- Working with international network partners to further develop products and services.
- Using the network to enter into new markets and open new business opportunities in Australia.

The International Energy Agency Programmes

PV Power Systems (IEA PVPS)

- **Mission:** *To enhance the international collaborative efforts which facilitate the role of photovoltaic solar energy as a cornerstone in the transition to sustainable energy systems*
- **Focus** (26 countries, 5 associates)
 - PV technology development
 - Competitive PV markets
 - Environmentally & economically sustainable PV industry
 - Policy recommendations and strategies
 - Neutral and unbiased information

Australia currently participates in:

PVPS Task 1: Information Dissemination

PVPS Task 13: PV System Performance

PVPS Task 14: High Penetration PV in Electricity Grids.

Solar Heating & Cooling (IEA SHC)

- **Mission:** *International collaboration to fulfil the vision of solar thermal energy meeting 50% of low temperature heating and cooling demand by 2050*
- **Focus** (21 countries, 2 associates)
 - Components
 - Systems
 - Integration into energy system
 - Design and planning tools
 - Training and capacity building

Current Australian participation:

- SHC Task 51 – PV in Urban Environments
- SHC Task 48 – Quality Assurance Support Measures for Solar Cooling Systems
- SHC Task 47 – Solar renovation of non-residential buildings
- SHC Task 46 - Solar Resource Assessment and Forecasting
- SHC Task 43 - Solar Rating & Certification Procedures
- SHC Task 42 - Compact Thermal Energy Storage
- SHC Task 40 - Net Zero Energy Solar Buildings

For further information on the Australian PV Association visit: www.apvi.org.au

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For further information on the IEA PVPS Programmes visit www.iea-pvps.org and www.iea-shc.org