

## Sustainable Energy Industry Association of the Pacific Islands

### SEIAPI holds Fiji Industry members Meeting

### Updated SEIAPI/PPA Off Grid Guidelines Released



The Sustainable Energy Industry Association of the Pacific Islands (SEIAPI) held an Industry member meeting for its Fiji based members on Wednesday, 8 October from 2 to 4pm at USP Pacific TAFE Campus in Suva, Fiji. There were representatives from CBS Power Solutions, Clay Energy, Core Energy Solutions, Pacific Sun Solar Pte Ltd, Powerlite, Solar Fiji and Vision Energy Solutions who attended this important meeting.

SEIAPI Chair, Peter Johnston began the meeting with opening remarks followed by updates from SEIAPI Executive Officer, Geoff Stapleton on the Pacific Regional Sustainable Energy Training Centre's construction progress. Geoff highlighted the need for training materials and equipment to be used tailored to industry needs.

The meeting also provided an opportunity to introduce Mosese Nabulivou, SEIAPI Technical Projects Officer to the Fiji based members. The Chair, Peter Johnston further facilitated discussions on the Strategic Plan that SEIAPI will be developing over the next 6+ months in order to get inputs from the members. In other items, Geoff mentioned release of updated versions (version 3) of Off grid PV system Design and Install guidelines due to changes in Australian standards and technological advancements since the last update.

Attendees discussed regulatory challenges in scaling grid connected solar, with plans to enhance engagement with utilities and regulators. The group also committed to boosting industry awareness and sharing updates through revamped newsletters featuring more case studies and training schedules. As the association refines its strategic direction for 2025 and beyond, SEIAPI remains dedicated to sustainable energy advancement, market growth, and workforce development across the Pacific Islands.

On 9th October, SEIAPI released version 3 of the Off-grid PV Power System (Design and Install) guidelines as part of SEIAPI's contribution to the Market Development Facility (MDF) - SEIAPI Collaboration project. These guidelines focus on best practices in accordance with the relevant Australian and New Zealand (AS/NZS) standards. The initial versions of these guidelines (released in 2012) were updated through the Sustainable Energy Industry Development Project (SEIDP) administered by the Pacific Power Association (PPA), funded by the World Bank. These 2018 guidelines were later revised and utilised for a World Bank project in Uganda and for PNG off grid PV systems funded through the Economic and Social Infrastructure Program (ESIP). Those guidelines have been prepared by Global Sustainable Energy Solutions Pty Ltd. These guidelines can be downloaded from: <https://www.seiapi.com/guidelines/>

The solar PV industry is evolving quite rapidly which prompted the AS/NZS standards to be updated over the past years. The previous Off-grid PV system guidelines did not incorporate the requirements of AS/NZS 5139:2019 (Electrical installations - Safety of battery systems for use with power conversion equipment) since it did not exist at that time (2018). Previously, lead acid batteries were widely used but now lithium-ion batteries are getting popular, hence, it is important that the safety and installation requirements were relayed to the Pacific solar industry. Other standard changes include AS/NZS 5033:2021 and AS/NZS 4777:1: 2024.

SEIAPI hosted an online webinar on Thursday 23rd October that was conducted by SEIAPI Executive Officer, Geoff Stapleton on Off grid Design guidelines and it was attended by 33 participants from the solar companies, electrical utilities and other relevant stakeholders from the Pacific region.



## Lighting up learning across the Pacific and Timor-Leste



Supported by the Australian Government through REnew Pacific and earlier pilots under the Business Partnerships Platform (BPP), their local partners are lighting up schools and learning spaces with renewable energy across the Pacific.

In Fiji, Its Time Foundation, in partnership with Fiji's Ministry of Education and the Australian Government, is expanding access to clean energy for 30 remote and maritime schools through REnew Pacific. Each site will receive reliable 24-hour solar power, high-speed internet and simple computer labs, helping bridge the digital divide and improve learning conditions for students and teachers. The new project builds on a successful pilot at Buakonikai Primary School on Rabi Island, where clean, reliable solar power and internet connectivity have transformed the learning environment for 115 students. Teachers now report higher engagement, new opportunities for digital lessons and annual savings of more than AUD 6,000 in fuel costs, reinvested in classroom improvements.

In Solomon Islands, Superfly is installing solar hybrid systems at Goldie College and Sir Dudley Tuti College. Around-the-clock electricity will enable longer study hours, safer dormitories and better access to digital learning for more than 1,400 students and teachers.

In Papua New Guinea, over 200 students at Kokoda College now have access to reliable, renewable power through a new solar mini-grid. Delivered by the Kokoda Track Foundation and the Australian Government through a Department of Foreign Affairs and Trade (DFAT), Business Partnerships Platform (BPP) pilot that was completed in March, the system powers classrooms, an IT lab, water and waste facilities, as well as supporting climate-smart agriculture on campus.

And in Vanuatu, the Global Green Growth Institute (GGGI) is working with local partners to bring solar power and clean water to schools and health centres across Santo, Paama, Tanna and Malekula islands.

## All Energy Australia 2025

All Energy Australia is the Southern Hemisphere's largest and most anticipated event in the clean energy sector's annual calendar. Organised by RX Global and held in partnership with the Clean Energy Council, this free-to-attend event provided delegates with exclusive access to the latest technology, information and trends relevant to those working or investing in the renewables sector. All-Energy Australia 2025 took place on October 29–30 at the Melbourne Convention and Exhibition Centre (MCEC).



For 15+ years, All Energy Australia serves as a vital platform for industry professionals, experts, and enthusiasts to gather and witness the latest developments, innovations, and trends in the renewable energy sector.

This event provided a comprehensive showcase of cutting-edge technologies and solutions in areas like solar, wind, bioenergy, energy storage, and electric transportation. Attendees explored a wide range of products and services, connected with key industry players, and gained insights into sustainable energy practices.

All Energy Australia was not only an exhibition and conference but also a knowledge-sharing hub. The conference component featured a series of insightful presentations, panel discussions, and workshops, where experts shared their insights and expertise on critical topics related to renewable energy, climate change, policy, and market trends.

SEIAPI was represented by Executive Officer, Geoff Stapleton who met with SEIAPI members, liaised with potential companies that could join SEIAPI, fostered better relationships with manufacturers, explored common products deployed in the Pacific region and identified products that could be obtained at a reasonable price for the Pacific Regional Sustainable Energy Training Centre.

## Solar myths and misconceptions

Extracted from PV magazine International

Authors: Prof. Ricardo R  ther, Universidade Federal de Santa Catarina (UFSC), Prof. Andrew Blakers Australian National University (ANU)

Misinformation and disinformation about solar energy continue to be propagated. Here we set the record straight about some plausible myths:

- “Solar only provides a small fraction of primary energy.” Primary energy is a silly measure. What really counts is end-use energy. Solar electricity can be used directly in most applications with high efficiency. However, burning coal to make electricity or burning oil to drive a car throws away most of the primary energy as useless heat.
- “Solar uses vast amounts of land.” Complete decarbonisation of an advanced economy using solar and wind to provide all energy for transport, heating and industry requires 40-80 m<sup>2</sup> of solar panel per person (depending on latitude and wind energy contribution), which is far smaller than the area devoted to agriculture or roads. High photovoltaic conversion efficiency is key both to reducing prices and reducing land use. Efficiency has improved around fourfold since the 1950s. Some people conflate the area spanned by a solar or wind farm with the area alienated from agriculture by the turbines and panels, which is far smaller.
- “Biomass is a better solution than running cars with electricity.” Electric cars running with solar electricity require 100 times less land than running cars with ethanol produced from sugar-cane.
- “Solar waste is a big issue.” With a 25+ year lifetime, only a few square metres of solar panel per person retires each year. This solar panel waste, about 16 kg each, is 10%, 1% and 0.1% respectively of the annual per capita mass of human excrement, other solid waste and avoided carbon dioxide.
- “Solar uses toxic metals and critical minerals.” Most of a solar panel is glass. There is a small amount of plastic encapsulation, silicon and conductive metals. Nearly all of this can be recycled. There are no materials that are not substitutable.



Image: Andrew Blakers

- “Solar needs too much energy to manufacture.” The payback time to recover the energy used in manufacturing is about one year compared with a lifetime of 25- 30 years.
- “You can’t run a grid on solar and wind; you need baseload power.” Many countries are headed towards 90-100% electricity from variable solar and wind. For example, Australia is an advanced economy located in mid-latitudes that cannot share electricity across national borders. Only 7% of its electricity comes from hydroelectricity and biomass, and it has zero nuclear or geothermal electricity. It is tracking towards 75% of electricity from solar and wind in 2030, trending towards 95% in later years.

Full article is available from: <https://www.pv-magazine.com/2025/07/16/solar-myths-and-misconceptions/>.

## The significance of battery state-of-charge

Properly measuring and managing battery state-of-charge (SoC) is important for the efficiency, longevity, and safety of battery energy storage system, especially for lithium ferro-phosphate (LFP) devices. SoC is typically expressed as a percentage of a battery’s total energy storage capacity. For example, an SoC of 50% means a battery is half-charged. Errors of up to 5% can occur in the SoC measurement of advanced, well-maintained battery systems, and can be significantly higher in poorly managed systems.

The SoC of a lithium-ion battery can’t be measured directly but is estimated based on voltage, current, and temperature. These measurements are influenced by type of battery and cell chemistry, cell voltage, usage patterns including time to fully charge, the depth of discharge and ageing.

LFP batteries are robust and have a flatter voltage curve than other li-ion chemistries, so voltage varies less with SoC. It is thus more challenging to estimate SoC accurately using voltage-based methods alone, requiring additional data points, such as temperature and current. LFP batteries are generally more tolerant to temperature variation, but extreme temperatures can affect SoC accuracy. For larger systems, multiple LFP battery modules are connected in series to form a rack and multiple racks connected in parallel configurations. If SoC is not accurately managed, some modules or racks may become overcharged while others are undercharged, leading to uneven wear and reduced overall efficiency. With robust SoC measurements, operators can reduce imbalance, maintain system health, and maximize efficiency, all while safeguarding their investment.

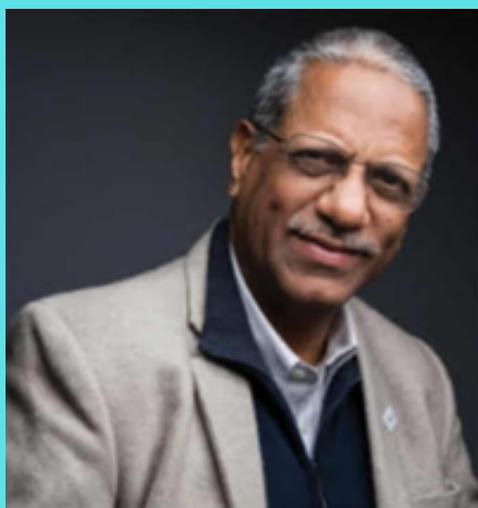
Visit: <https://www.pv-magazine.com/2024/09/26/the-significance-of-state-of-charge/>

## Professor Atul joins FNU

Former SEIAPI Executive Committee member, Professor Atul Raturi has recently joined Fiji National University (FNU) as the Dean College of Engineering & Technical Vocational Education & Training on 3rd September, 2025.

Professor Raturi has over 35 years of international academic and professional experience. He has contributed significantly to the fields of renewable energy and sustainable development in the Pacific region, especially in research, teaching, policy advising and capacity building across the Pacific Islands.

He has worked on the development of long-term energy planning strategy (LEDS) for Fiji which involved development of decarbonization scenarios and modelling of energy systems. The LEDS report was launched in 2018 at the COP24.



Professor Atul has participated in a few of the annual Pacific Power Association conferences held in the region sharing his broad insights and knowledge of renewable energy technologies to the Pacific electrical utility board executives, engineers and CEOs.

He has also shared his ideas and strategies with the former SEIAPI Executive Committee over the years on how to grow the solar industry, build capacity and bring in quality and sustainability to the solar PV systems installed in the region.

He was involved in the kick-start discussions with the University of the South Pacific on setting up a regional sustainable energy training centre which is finally being built at the Statham campus, USP Pacific TAFE campus, Suva, Fiji. SEIAPI would like to wish him all the best for his new role.

### International Conference

6th International Conference on Solar Technologies and Hybrid Mini-Grids to improve energy access  
**SAVE THE DATE**

8-10 April 2026, Mallorca, Spain

[www.energy-access-conferences.com](http://www.energy-access-conferences.com)

## Standards Corner

In recent months, SEIAPI has been conducting webinars related to the current Australia and New Zealand Standards and we will arrange similar webinars for the USA National Electrical Code. To supplement these webinars, the newsletter includes this 'standards' corner highlighting an installation identified during a site visit in the Pacific that does not comply with relevant standards, SEIAPI guidelines or international best practices.



The above photo illustrates array cables (>120 V d.c.) being single insulated and without any form of mechanical protection. The above installation does not comply with the following standard requirements:

- AS/NZS 5033:2021 4.4.3, 4.3.2.3 & 4.4.5.2.2 - Generally, where PV d.c. cables are installed external to the building, and not in a restricted access location, they shall be installed in a wiring enclosure to ensure restricted access of the PV d.c. cables. Furthermore, insulated and sheathed UV resistant cables shall be used.

In addition, plastic cable ties shall not be used as primary means of support.

The following shows the correct way of putting array cable in wiring enclosure.



For more updates, please visit  
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