

## SEIAPI HOLDS STANDARDS WORKSHOP AND TRAINING FOR EFL INSPECTORS

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*Group photo of EFL inspectors and SEIAPI representatives on day 2*

As part of its drive in enabling consistent and structured procedures on the overall grid connection process, SEIAPI approached the Fijian solar industry, Fijian Competition & Consumer Commission (FCCC) and Energy Fiji Limited (EFL) to organize an open forum to deliberate on this important aspect.

A 1-day workshop was organized on Monday 15th July at USP Pacific TAFE, Statham Campus in Suva to provide an overview of the EFL and FCCC grid connected PV systems application process. The objective was to help the Fijian solar industry understand the process and provide the opportunity to ask questions of the representatives of EFL and FCCC. Geoff Stapleton, Executive Officer of SEIAPI facilitated the workshop. Geoff has been a member

of relevant Australian Standards committees for over 30 years and has represented Australia on the International Electrotechnical Commission standards for 10 years. The workshop provided an overview of the key requirements of AS/NZS 5033 and AS/NZS 4777 standards including an overview of the inspection check sheets that have been developed for inspectors by SEIAPI. The application requirements for grid connected PV systems and the licensing and approval process undertaken by FCCC and EFL respectively were presented by their representatives. The day finished with an open forum between SEIAPI members and non-members, EFL inspectors/planning and regulatory staff and FCCC.



*Presenters from FCCC and EFL during the open forum on day 1*

The 2nd day, Tuesday 16th July convened at EFL's Kinoya depot training room where EFL electrical inspectors from all around Fiji gathered to gain fundamental knowledge on solar PV inspections and also to develop skills on completing inspection checklists as part of commissioning grid connected PV systems. The electrical inspectors undertook trial inspections of two grid connected PV systems at Fiji Ports. This training was organized for the EFL electrical inspectors by SEIAPI to build the capacity of electrical inspectors to inspect grid connected PV systems.

A similar one-day training was organized by SEIAPI for Electric Power Corporation (EPC) inspectors and engineers in Samoa earlier this year. SEIAPI believes that inspecting systems to verify that the systems are safe and compliant helps promote renewable energy technologies.

There are plans to provide more training to solar industry and electrical utility staff in the Pacific through donor funding support.



*EFL electrical inspectors undertaking training on day 2*

### **Acknowledgement**

SEIAPI would like to acknowledge USP Pacific TAFE and Global Sustainable Energy Solutions (GSES, Australia) who assisted with the venue and refreshments respectively.



# THE PACIFIC SENIOR ENERGY OFFICIALS MEETING 2024 HELD IN NADI, FIJI

The Pacific Senior Energy Officials meeting series convened at Novotel, in Nadi, Fiji from the 23rd - 27th of September 2024 with 3-day senior energy officials meeting, a *Waste to Energy* symposium, a 2-day *Pacific Women in Energy* conference, *Clean Energy Access in Remote Pacific Island Countries (CLEARPICs)* kick-off event, a *Pacific Adoption of Waste to Energy Solutions (PAWES)* Project steering committee meeting, and a *Pacific Energy and Gender Initiative. (PEGI)* steering committee meeting.



Group photo of participants of the Pacific Senior Energy Officials Meeting

With 64% of Pacific peoples lacking regular electrical energy access, the goal was clear: sustainable, clean, and affordable energy for all. The senior officials have reaffirmed their commitment to a just, inclusive and equitable energy transition, focusing on reducing fossil fuel dependence and ensuring clean, affordable energy for all Pacific peoples.

The “Clean Energy Access in Remote Pacific Island Countries” (CLEARPICs) project is being implemented with support from the University of the South Pacific through a £1 million investment from the UK Government. It is meant to drive innovative off-grid and mini-grid solutions for Papua New Guinea, Solomon Islands, and Vanuatu.

The key focus areas for this project include:

- **Regional Liaison:** Connecting and coordinating efforts across the Pacific

- **Market Intelligence:** Gathering critical data to drive informed decisions
- **Pilot Projects:** Implementing innovative solutions in target communities.
- **Enabling Environment:** Creating supportive Policies and Conditions Supportive Policies and Conditions for Sustainable Energy

SEI API was represented by Geoff Stapleton. He participated in a development partner’s session on Wednesday 25th September where each person could speak for 3 minutes. Geoff spoke on the benefits of an industry association to the region. He related how Australia has excelled in solar installations due to the contributions of the solar industry association and he elaborated on the history of SEI API and the achievements of technical guidelines for the solar industry, an accreditation scheme that did not take off due to lack of training, the need to establish training in-country, and the need for quality inspections, amongst other topics.

# PACIFIC REGIONAL SUSTAINABLE ENERGY TRAINING CENTRE UPDATE

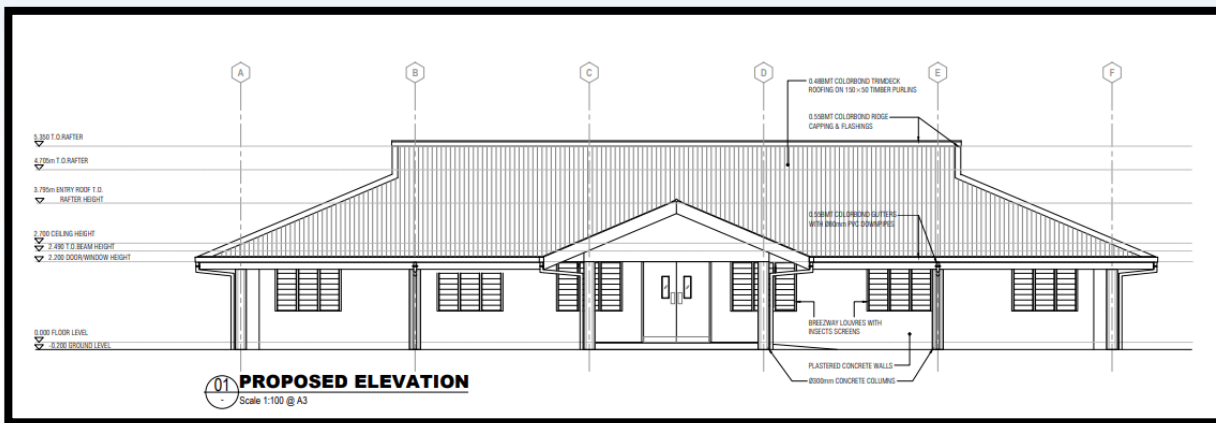
The tender for the much-awaited Pacific Regional Sustainable Energy Training Centre building construction was released by USP's Estates and Infrastructure department in September and closed on 30th September, 2024 at 11am (Fiji time). The training centre building is funded by a private foundation and is being built at USP Pacific TAFE, Statham Campus, Suva, Fiji.

The funding includes:

- Construction of a new training centre building
- A PV/Battery system for the building
- Equipment for undertaking practical training

- Two Fiji-based full-time trainers

The training centre building will comprise a large training workshop space, a lecture/tutorial room, storage space, office space for two trainers and a washroom. There will be a simulated roof at the back where trainees will practice mounting of solar panels. The building will have a roof-top grid connected solar PV system and a battery energy storage system. The PV/BESS system is designed to power all the centre loads under normal conditions.



*Architectural drawing (front view) of the planned Pacific Sustainable Energy Training Centre Building*

The training centre will initially focus on providing the following training courses:

- design and installation of grid connected PV systems
- design and installation of PV based off-grid systems (including PV/fossil fuel hybrids)
- design and installation of residential/commercial battery storage systems on the grid.

Design only and install only courses for the three technology applications will also be available. After those courses are established, the training team will develop other short courses to meet the needs of the private industry, the electricity utilities and interested individuals including O&M, inspector training etc.

The Fijian solar industry will benefit from this regional initiative as this will provide an avenue for existing technicians who wish to upskill in design and installation practices of solar PV systems.

In July 2022, Global Sustainable Energy Solutions Pty Ltd (GSES) signed a partnership agreement with USP Pacific TAFE. Under this agreement USP Pacific TAFE has is already offering the above three courses **online**.

The online design courses will be available for face-to-face training once the centre is operational. Refer to <https://www.training.ac.fj/info/solar/> for more information.

87 students from Fiji, Vanuatu, Solomon Islands, Tonga, Niue and PNG have enrolled for the online courses. Those who complete them will be eligible to undertake practical training in late 2025.

The courses are similar to those GSES conducts in Australia. Those who successfully complete the course are eligible to apply for their PPA/SEIAPI design/install accreditation. For more details, see <https://www.seiapi.com/seiapi-ppa-accreditation>.

## GEOFF STAPLETON SPEAKS AT ISES-UK 50<sup>TH</sup> CELEBRATION

SEIAPI's executive officer was invited to present at the International Solar Energy Society's ISES-UK 50<sup>th</sup> celebration held at The Royal Institution, London Thursday 18<sup>th</sup> September. On behalf of the ISES Board (Geoff has been a member for 10 years), Geoff congratulated ISES-UK on achieving 50 years of promoting solar research and the industry. He spoke on the development of, and future plans for, the [ISES Online Solar Energy Museum](#) that was launched in March this year.

While in London, Geoff had meetings with Ms Sonia Dunlop, Chief Executive Officer of the Global Solar Council and Mr Gabriel Montagu-Pollock, economic adviser in the Indo-Pacific Regional Department of the United Kingdom's Foreign, Commonwealth and Development Office (FCDO). SEIAPI is considering joining the global Solar Council while the FCDO are supporting renewable energy projects in the Pacific.



*Geoff with Bernard McNelis, Colin Porteus and John Twidell  
Note: Dr Twidell taught physics at USP (Suva, Fiji) during its early years  
and was a passionate early advocate for renewable energy in the Pacific Islands.*

## SOLAR DEMAND STUDY FOR GREATER SUVA AREA (FIJI) (MDF, 2024)

On 9 Sept 2024, the Australian DFAT funded Market Development Facility (MDF) in Suva released a joint MDF/Solar Hub study of the potential demand for rooftop solar PV in the Lami-Suva-Nausori corridor. It was presented at a 'sharing event' at the Grand Pacific Hotel by Angus Toward, the MDF Climate Change Manager. SEIAPI was represented by Executive Committee chair, Mr. Peter Johnston.

This Solar Demand Study was designed to better understand current and potential demand for rooftop solar, as well as different market segments' perception, knowledge, incentives, barriers, willingness and ability to pay for solar in urban areas, particularly in Suva. This Study has also reviewed the current landscape for financial services available for solar installations and the challenges and

opportunities to creating access to finance for rooftop solar to urban customers.

Findings are based on an on-line survey of over 5,000 residents and interviews with households, businesses, financial service providers, and key government and development partners. 68% of households were willing to invest in solar systems using their own funds. 94% of households reported power cuts, mostly (63%) once every two months, with a quarter investing in power backup, typically diesel (60%) and small solar, such as lighting (32%). 50% reported willingness to explore loan or subscription finance models for solar. Only 4 out of 17 financial institutions interviewed offer any financial services specifically for solar products. There is a poor understanding in the market on the types of



roof-top solar products available and potential benefits for households and businesses. The study suggests that if adequate supply, financial products, educational marketing and regulatory settings were in place, a significant proportion of households and businesses would switch to solar.

19 businesses based in Suva were also interviewed (10 large; 3 medium, 6 small) of which 37% were retailers and the rest provide a range of services such as co-working, telecommunications, banking, and catering. Businesses invest significantly in backup energy, mainly diesel, to reduce the impact of EFL outages.

## VISION ENERGY SOLUTIONS POWERS SUSTAINABILITY AT DOUBLETREE BY HILTON FIJI RESORT

In a significant move towards sustainability, DoubleTree Resort by Hilton Fiji, Sonaisali Island has partnered with Vision Energy Solutions to install a solar energy system. This installation which has a capacity of 107.8kWp, marks a pivotal step in the resort’s ongoing efforts to reduce its environmental footprint and promote green energy practices.

### Project Overview

The solar energy system installed at DoubleTree Resort by Hilton Fiji; Sonaisali Island is designed to generate substantial energy savings. With an energy generation to date of 23.82MWh, the system has already demonstrated its effectiveness in reducing reliance on traditional energy sources. This shift to renewable energy not only cuts down on operational costs but also significantly lowers the resort's carbon emissions.



financial performance, providing a strong return on investment and allowing funds to be reallocated to other sustainability initiatives.

### Environmental Benefits

One of the most compelling aspects of the solar installation is its positive environmental impact. By generating renewable energy, DoubleTree Resort by Hilton Fiji, Sonaisali Island has saved approximately 9.33 tonnes of CO<sub>2</sub> emissions to date. This reduction is equivalent to planting hundreds of trees or removing several cars from the road annually, illustrating the tangible benefits of investing in green energy. The resort’s commitment to reducing its

### Economic Impact

The resort's transition to solar power has led to notable financial savings, especially when compared to the high costs associated with diesel energy. Given the volatile nature of fuel prices, the stability and predictability of solar energy offer a significant economic advantage. By generating 23.82MWh of clean energy, the resort has reduced its dependency on grid electricity, leading to substantial cost savings. These savings enhance the resort's

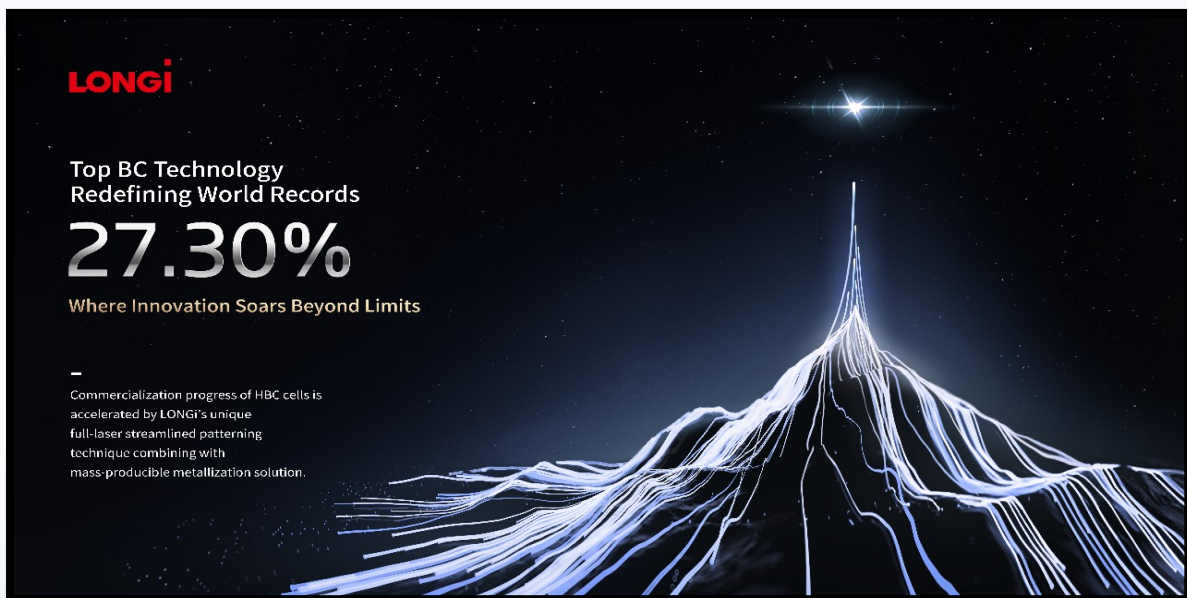
carbon footprint aligns with global efforts to combat climate change and promote environmental sustainability.

The system installation at DoubleTree Resort was carried out by SEI API member, Vision Energy Solutions, from initial design to final installation.

# LONGI ACHIEVES NEW WORLD RECORD FOR SILICON SOLAR CELL EFFICIENCY, INTRODUCING 2ND GENERATION ULTRA-EFFICIENT BC-BASED MODULE

- Innovative solar panel manufacturer proudly announces a groundbreaking achievement: a new record in silicon heterojunction back-contact solar cell efficiency, reaching an impressive 27.30%.
- Additionally, LONGi unveils its latest innovation, the Hi-MO 9 solar module. Boasting an industry-leading silicon solar module conversion efficiency of up to 24.43%, this new module sets a new standard for solar technology, promising exceptional performance and reliability.

In May, 2024, LONGi Green Energy Technology Co. proudly announced its latest milestone, breaking a new world record for silicon solar cell efficiency. Certified by Germany's Institute for Solar Energy Research Hamelin (ISFH), LONGi's silicon heterojunction back-contact (HBC) solar cells have achieved an outstanding efficiency of 27.30% under laboratory conditions, marking the company's 17th world-record achievement in solar cell efficiency since April 2021.



*27.3 % LONGi sets a new world record for silicon solar cell efficiency again*

## Introducing the Hi-MO 9 Module

Highlighting its commitment to pushing the boundaries of solar technology, LONGi unveils its flagship Hi-MO 9 module at the special event in Madrid, Spain. The Hi-MO 9 module, featuring 2nd generation Hybrid Passivated Back Contact (HPBC) solar cell technology and the TaiRay wafer, promises

exceptional performance with a maximum power output of 660W and an impressive conversion efficiency of up to 24.43%. Designed to thrive in diverse environments, including lakes, mountains, and deserts, the Hi-MO 9 module is poised to revolutionize solar energy generation worldwide.



### Hi-MO 9 Module

The panels will be produced at the company’s Jiaxing Production Base which has been recognized by the World Economic Forum as a Global Lighthouse Factory, a group of factories which have been judged to be accelerating the adoption of Fourth Industrial Revolution technologies in manufacturing.

Availability in Australia, NZ and Pacific Islands

The highly anticipated Hi-MO 9 module is scheduled to arrive on Australian shores by Q4 2024, thanks to

LONGi's dedicated efforts to ensure a smooth and timely launch. New Zealand and Pacific Island customers can expect product around the same time.

For those curious to learn more about the product and eager for an exclusive sneak peek, interested parties are encouraged to reach out to their local LONGi representative or contact the company directly at [au@longi.com](mailto:au@longi.com). LONGi's team is ready to answer questions and share their excitement about the upcoming release.

## TECHNICAL ARTICLE

### UNDERSTANDING THE 1000V RULE IN AS/NZS 4777.1:2024



The latest update to the **AS/NZS 4777.1:2024 standard** introduces significant changes for residential solar installations, with one of the most notable being the new **1000V rule**. This change allows installers to implement higher voltage solar systems in residential settings, but **only if they strictly adhere to the updated compliance requirements**.

What is the 1000V Rule?

Previously, residential solar systems were limited to a maximum of 600V. However, under the new **AS/NZS 4777.1:2024**, systems can now operate at up to **1000V** as they cede this limit to AS/NZS 5033. This higher voltage threshold opens up new possibilities for residential solar installations, enabling more



efficient and larger PV arrays. The key benefit of this is that installers can now design systems with fewer strings and components, which can lead to cost savings and improved performance.

#### Compliance is Critical

However, using the 1000V rule is not just a simple switch to higher voltage. It comes with **strict compliance obligations** that must be met. These include updates to safety measures, such as:

- **New signage requirements:** This is particularly important if it is a battery installation because the inverter main switch needs to have the appropriate supply type (alternative vs. independent) specified.

- **Installation verification:** The new standard requires detailed installation checks, including enhanced verification processes to ensure systems meet the revised safety criteria.
- **Protective devices and phase balance:** Installers must also update protective devices to handle higher voltages, and manage phase balance requirements to ensure the stability of the power supply.

**In short, if you use one part of the new standard you must use it all.** Failure to follow these requirements could lead to safety risks and non-compliance, putting installers at risk of fines or system failures.



**PACIFIC POWER ASSOCIATION**

**31st Annual Conference & Trade Exhibition**  
**30 September – 3 October 2024**  
**Tonga**

Conference Theme: ***"The Cost of Transition to Renewables"***

Updates on 31<sup>st</sup> Pacific Power Association Conference 2024 will follow in the next issue.



For more updates, please visit <http://www.seiapi.com> or email on [info@seiapi.com](mailto:info@seiapi.com)/[secretariat@seiapi.com](mailto:secretariat@seiapi.com) for any queries and comments.



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