

THE SOLAR FUND (FIJI) ESTABLISHED BY ITS TIME FOUNDATION

Article by: Rob Edwards

Off-grid solar is a simple, effective and environmentally sound solution to give kids in remote schools 24-hour power and therefore the opportunity of a modern education. To date [Its Time Foundation](#) has installed 32 school solar systems and is currently working to significantly increase that number. That's great, but these systems require monitoring and on-going maintenance to ensure they last for decades, delivering their social and climate impacts.

Its Time Foundation established [The Solar Fund \(Fiji\)](#) as a protected fund for the financing and overseeing of maintenance of those remote school solar projects in the Fiji Islands.

Under the guidance of highly credentialed board members and advisors, The Solar Fund (Fiji) accumulates funds that are readily available to deploy quick response repairs to the school solar systems when issues occur. The Fund has a retained solar/electrical contractor to monitor and do preventive maintenance on the solar systems, as well as being at the ready to deal with outages and other issues.



The Solar Fund (Fiji) attracts revenue from multiple sources. These include: inviting initial project donors to contribute an additional amount earmarked for system maintenance; a modest portion from the fuel savings created by the solar system is contributed by the schools; businesses and Not For Profits are invited to be part of the journey as supporting partners; direct donations; grants and [raffles by supporting Not For Profits and tourism partners](#).

It appears that The Solar Fund (Fiji) maybe the first independent protected maintenance fund for small scale infrastructure in the South Pacific. Hence in 2025 we are developing a guidance document and examples for the establishment of similar entities for other impacts and countries. The document will include our processes and various documentation. Our advisory consultant that developed our procedures and documentation is available to guide in the establishment of similar entities. Please feel free to contact Its Time Foundation by mid Q1 2025 should you be interested in a copy of the document.



\$125M TO SUPPORT THE PACIFIC'S RENEWABLE ENERGY TRANSITION

Article by: SEIAPI Secretariat

The Australian Government has announced a \$125 million investment to support renewable energy in the Pacific, addressing key challenges in energy access and climate resilience. Announced at COP29, this funding will:

- Deliver off-grid and community-scale renewable energy in rural and remote areas through the \$75 million "REnew Pacific" program.
- Boost skills, training, and Pacific-led energy transition projects with \$50 million through the Australia-Pacific Partnership for Energy Transition (APPET).

This initiative aims to help Pacific Island countries reduce reliance on imported fossil fuels, improve energy security, and meet climate goals while supporting livelihoods and resilience in the region. Delivered by the Australian Infrastructure Financing Facility for the Pacific, the 'REnew Pacific' program will help deliver off-grid and community scale

renewable energy in remote and rural parts of the Pacific.

The program will enable lighting, access to water, improved agriculture, better food security, quality education and health services, reliable communications connectivity and enhanced incomes.

The \$50 million APPET funding responds to Pacific priorities to capture more of the benefits of renewable energy investments. This may include energy transition modelling, grid studies, renewable energy project feasibility studies, university collaborations and other activities to support energy transition progress.

It will support the skills and training needed to grow the Pacific's renewable energy workforce and provide practical, Pacific-led support to Pacific governments and energy operators.

Australia recently announced an additional \$9 million contribution to the Pacific Regional NDC Hub, which is designed to respond to Pacific requests for support on a range of climate activities.

COP 29 UPDATE – TRIPLE FINANCE TO DEVELOPING COUNTRIES

With a central focus on climate finance, COP29 brought together nearly 200 countries in Baku, Azerbaijan, and reached a breakthrough agreement that will:

1. Triple finance to developing countries, from the previous goal of USD 100 billion annually, to USD 300 billion annually by 2035.
2. Secure efforts of all actors to work together to scale up finance to developing countries, from public and private sources, to the amount of USD 1.3 trillion per year by 2035.
3. Known formally as the New Collective Quantified Goal on Climate Finance (NCQG), it was agreed after two weeks of intensive

negotiations and several years of preparatory work, in a process that requires all nations to unanimously agree on every word of the agreement.

The new finance goal at COP29 builds on significant strides forward on global climate action at COP27, which agreed a historic Loss and Damage Fund, and COP28, which delivered a global agreement to transition away from all fossil fuels in energy systems swiftly and fairly, triple renewable energy and boost climate resilience.

COP29 also reached agreement on carbon markets – which several previous COPs had not been able to achieve. These agreements will help countries deliver their climate plans more quickly and cheaply, and make faster progress in halving global emissions this decade.

For more information, please refer:

<https://unfccc.int/news/cop29-un-climate-conference-agrees-to-triple-finance-to-developing-countries-protecting-lives-and>

ASIAN DEVELOPMENT BANK TO FUND SOLAR PV PROJECTS IN SOLOMON ISLANDS AND TONGA

Article By: SEI API Secretariat

The Asian Development Bank (ADB) has partnered with the governments of the Solomon Islands and Tonga to support each state's energy transition, with solar PV at the heart of the agreements.

The grant and loan agreements, drafted at COP29 in Azerbaijan, will support the *Solomon Islands Renewable Energy Development project*, which aims to implement solar PV power plants in the provinces of Guadalcanal and Malaita; and the Tonga Grid Enhancement for Sustainable Energy Transition project, involving the construction of a new electricity network to transmit energy from a solar PV power plant.

In a media statement, the ADB confirmed that it had struck a US\$15 million agreement with the Solomon Islands, consisting of a US\$10 million concessional loan and a US\$5 million grant.

The Solomon Islands Renewable Energy Development project will help deliver solar PV power plants with a total capacity of 2.5MW and help

facilitate the development of what the ADB claims is the island nation's first utility-scale battery energy storage system (BESS).

These projects also aim to create an environment that will enable more private sector participation and investment in renewable energy.

Meanwhile in Tonga, ADB has signed an agreement to provide US\$4.6 million in grants to support the country's energy transition.

The Tonga Grid Enhancement for Sustainable Energy Transition project aims to help the government of Tonga meet its 70% renewable energy target by constructing a new 33kV electricity network to evacuate energy from a solar PV power plant and upgrading a portion of the existing 11kV network.

Reproduced from: <https://www.pv-tech.org/asian-development-banks-deals-solomon-islands-and-tonga-pacific-solar-pv/>

UPDATES ON PACIFIC POWER ASSOCIATION 31ST ANNUAL CONFERENCE

30 SEPTEMBER – 3 OCTOBER 2024, NUKUALOFA, TONGA



Participants at the official opening of the 31st PPA Conference in Tonga

The recent PPA 31st Annual Conference and Trade Exhibition 2024 was held in Nukualofa, Tonga at the Falemasiva Hall from the 30th September to the 3rd of

October. The conference was themed **"The Cost of Renewables to Transition"** which brought together Active members, Allied Members, Affiliate Members,

Donor Partners, Researchers and Experts to explore the financial, technological and strategic challenges of shifting towards renewable energy. The event provided a platform for in-depth discussions on how to balance economic costs of renewable energy adoption with the urgent need for sustainable and clean energy solutions. The conference emphasized the importance of understanding the true costs associated with renewable energy projects, from initial investments and infrastructure development to long-term maintenance and integration into existing energy grids. The Keynote Speaker, Chief Guests and presenters addressed topics such as the impact of technological innovations in reducing costs, and strategies for accelerating the transition while ensuring economic viability.



SEIAPI Secretary, Sandip Kumar presented on boosting solar inspections to ensure safe and sustainable systems – Mr. Sandip Kumar, Sustainable Energy Industry Association of the Pacific Islands

The accompanying trade exhibition with **38 exhibitors** showcased the latest advancements in renewable technologies, offering attendees the opportunity to engage in cutting-edge solutions in solar, wind, hydro and other sustainable energy sources. This convergence of thought leadership and technological innovation highlighted the collaborative effort required to overcome cost barriers and accelerated the global transition to a more sustainable energy future.



Sandip Kumar & Geoff Stapleton of SEIAPI with Praneel Kumar & Mohammed Tazil of Sunergise & Nishant Pratap of Pacific Engineering Projects at SEIAPI booth

The conference and trade exhibition attracted **221 delegates** in total where 68 delegates were from 19 power utilities, 97 delegates from 58 Allied member companies, 1 Observer, 5 spouses & 1 child, 35 delegates from Affiliate members, donor partners, government representatives and 14 delegates from the PPA Secretariat & Tonga Power Limited organizing committee.

CEO's Retreat

The CEO's retreat was held at the Faonelua Convention Centre. CEOs and senior representatives from 19 Power Utilities attended the retreat. The retreat was coordinated by Ms. Jane Romero of the Pacific Regional Infrastructure Facility (PRIF) which included representatives from donor partners such as the World Bank (WB), Asian Development Bank (ADB), Department of Climate Change, Energy, the Environment and Water (DCCEEW), Australian Infrastructure Financing Facility for the Pacific (AIFFP)-Department of Foreign Affairs and Trade (DFAT), Australia, International Finance Corporation (IFC), the Ministry of Foreign Trade New Zealand (NZMFAT), British High Commission, FSM Department of Resources and Development and Hawaii Natural Energy Institute. A total of fifty participants attended the retreat.



CEOs Retreat in session

The presentations at the CEOs retreat were as follows.

1. *Camco – Building Resilient and affordable power supply in the Pacific Islands*
2. *ADB – Emerging Areas in Energy Transition*
3. *ADB – ADB's engagement in shifting fossil fuel to renewable energy in power sector*
4. *ADB – Energy Sector Overview*
5. *MEC – Reform, IRRP and Performance Improvements at MEC*
6. *AIFFP – Energy, Pacific Islands, PNG & Timor-Leste*
7. *DCCEEW – Australia Pacific Partnership for Energy Transition*
8. *Hawaii Natural Energy Institute – Capacity Building on Renewable Energy Integration in Pacific Island Countries*
9. *IFC – Powering Pacific Island Countries Renewable Electricity Generation in the Pacific*

10. MFA – New Zealand’s Renewable Energy Cooperation in the Pacific
11. Foreign, Commonwealth & Development Office – Support for the Clean Energy Transition in the Pacific

Engineers Workshop

Alongside the CEOs retreat was the Engineers Workshop which took place on Monday, Tuesday and Thursday and this was facilitated by Mr. Abraham Simpson and Mr. Eugene Singh. The workshop was also held at Faonelua Convention Centre with engineers from the 19 Power Utilities attending this workshop. The following topics were covered in this workshop.

1. Introduction to Performance Management & Balanced Scorecard
2. BSC Perspectives & Strategic Objectives
3. Financial Objectives
4. Customer Objectives
5. Process & Operational Objectives
6. Measures (KPIs)
7. Case Study – Nauru
8. Renewable Technology
9. Introduction to the Benchmarking Application
10. Performance Monitoring of Power Utilities
11. Pacific Women in Power
12. Presentations from Allied Member: Wartsila, Aggreko, Geogas, ITP Renewables & Karpowership
13. FWE Solutions



Engineers Workshop session

Utility Board Directors Workshop

The Utility Board of Directors Workshop was a two-day event which was also held at the Faonelua Convention Centre facilitated by representatives of the University of New South Wales, Dr. Iain McGill, Dr. Anna Bruce, Mr. Janendra Prasad and Mr. Edoardo Santagata.

The discussions covered the following topics.

1. Electricity Sector Transition
2. Barriers to RE Uptake a Sectoral Review
3. Rooftop PV Study – A Case Study for Efate Grid
4. Tariffs
5. Energy Planning Framework
6. The Energy Transition Model (ETM)



Utility Board Directors Workshop in session

Allied Members Formal Meeting

The Allied members formal meeting was held after their informal meeting and afternoon tea. The Allied members Chairman, Mr. Joe Reed together with PPA’s Executive Director and Board Chairman conducted the meeting at the Faonelua Convention Centre.

The PPA acknowledges the kind sponsorship from Nauru Utilities Corporation for the morning and afternoon teas and Pohnpei Utilities Corporation for lunch on Monday.



PPA Allied Members

Day 3 of the conference started off with the speed networking at the Oholei Beach Resort. The speed networking was facilitated by the PPA Allied Members Chairman, Joe Reed, Mana

Pacific. Each Allied member was given 2 minutes each with the 19 Active member utilities. After lunch, all delegates were taken on a field trip to both Tonga Power Limited's Wind Turbine farm in Li o Manumataongo and Popua Power Station in Anana.



Speed Networking in progress



Field Trip at the Wind Turbine Farm and Power Station

SUPERFLY LIMITED POWERS GOOD SAMARITAN HOSPITAL WITH A 70KW SOLAR HYBRID INSTALLATION.

Article By: Gavin Pereira

Superfly Limited is proud to announce the successful completion of a major solar hybrid energy project at Good Samaritan Hospital in the Solomon Islands.

This project features a 70kW_p photovoltaic (PV) system integrated with advanced energy storage and management solutions. It marks a significant milestone for Superfly Limited (SEIAPI member), showcasing the capabilities of a locally-owned company in delivering large-scale, high-quality renewable energy systems.

About the System

The installation comprises:

- **70kW_p of Solar PV:**
 - 35kW_p connected to the AC bus via a Fronius 27kW Eco inverter.
 - 35kW connected through Victron SmartSolar MPPT charge controllers.
- **Energy Storage:** 230kWh of state-of-the-art lithium battery storage, supplied by BSL Battery, ensuring reliable and consistent power for the hospital.

- **Inverter System:** A robust 45kVA Victron Quattro inverter bank to handle the hospital's energy demands seamlessly.

This system ensures uninterrupted power for essential medical services, enabling Good Samaritan Hospital to operate independently of the grid. It provides a cleaner, more reliable energy source, reducing reliance on diesel generators and cutting operational costs.

Project Impact

Good Samaritan Hospital, a vital healthcare facility serving rural communities, now benefits from consistent power for critical services such as lighting, refrigeration for vaccines and medicines, and life-saving medical equipment. This reliable power supply enhances the hospital's ability to deliver quality healthcare to thousands of patients annually.

The project was funded by the Australian Government Business Partnerships Platform, and the Australian Infrastructure Financing Facility for the Pacific Islands, emphasizing the importance of international collaboration in achieving sustainable development goals. Superfly Limited worked closely with local and international partners to ensure the project's success.

Event Highlights

The launch of the system was celebrated in a ceremony attended by dignitaries from the Australian Department of Foreign Affairs and Trade (DFAT) and key stakeholders. Their presence underscored the project's significance in strengthening healthcare infrastructure through renewable energy.

For more information on how Superfly Limited is transforming lives through solar energy, visit [Superfly Limited's Facebook page](#) or email: superflysolomons@gmail.com.

POWERLITE POWERS LEKUTU SCHOOLS WITH SOLAR

Article By: Powerlite Fiji Pte Limited

Powerlite Fiji has successfully established projects with EPC and amongst all the most recent one is the 54kW Off Grid PV System installed for Lekutu Secondary and Primary School using SUNGROW power products.



Powerlite Fiji has introduced the HV Power batteries, hybrid inverter system with the online monitoring feature to the Off grid solar industry for remote power requirements for their installations. HV Series Lithium iron phosphate (LFP) batteries operate at voltage between 108-584Vdc reducing the power consumption losses with the large operating battery voltage. These batteries are compact, light, single person installation and off plug and play design with no cables between battery modules minimizing the thought of tempering.

For Lekutu Schools, SUNGROW offers digital intelligence for energy all on Isolar Cloud for simple



online monitoring of the system performance without any added components but the feature offered within the Hybrid Inverter is with the availability of Internet connection at the dongle.

This PV Energy System would greatly benefit the Tikina Lekutu and Navakasiga, including villages and maritime communities bringing the excess to the modern-day technology and equipment for the Computer Lab, Technical Science classes and many other needs of the education system.

The system has been installed by SEI API member, Powerlite who are also a licensed electrical contractor in Fiji.

SEIAPI Supports the 5th Edition of the S-@ccess Conference on Solar Technologies and Hybrid Mini-Grids

Article By: Trama TecnoAmbiental

The 5th Edition of the International Conference on Solar Technologies and Hybrid Mini-Grids to Improve Energy Access recently took place from September 4-6, 2024, at the University of the Balearic Islands in Palma, Spain. This year's event brought together 138 participants from 39 countries across six continents, highlighting the global commitment to advancing energy access.



Co-organized by SEIAPI's member TTA, and supported by SEIAPI as media partner, the conference created a valuable platform for practitioners from industry, academia, and development institutions to engage in meaningful exchanges focused on decentralised energy access and local development. Participants explored a wide range of topics, from technical and environmental aspects to business and management considerations, all aimed at sharing experiences and fostering collaboration.

Key Outcomes

Strong Global Presence: The conference's impressive turnout showcased the global commitment to improving energy access.

Engaging and Collaborative Program: Attendees engaged in over 70 presentations and 7 roundtable discussions. Around 25 participants participated in a pitch contest. Notable highlights included sessions focused on innovative design, regulatory frameworks, financing schemes, social integration, and integrated planning methods.

Interactive Side Events: Three side events enriched the conference experience:

- The Energy Access Innovation Lab organised by WISE/RLI.
- An interactive workshop on Sustainable Cooling to Unlock Food Security hosted by Efficiency for Access.
- The World Bank's ESMAP workshop addressing Electricity Access for Underserved Customers, specifically focusing on undergrid mini-grids.

Unique Solar Cooking Event: A "Solar Lunch" showcased meals prepared with solar cookers, illustrating the practical potential of solar technology in everyday life. Participants found these hands-on demonstrations

effective in raising awareness about clean cooking technologies.

Insights from the Pacific

A notable presence at the conference was the delegation from the National Energy Authority of Papua New Guinea (PNG). Elisha Kakis, Manager of Off-Grid Projects at the National Energy Authority, presented in Session 4A, focusing on policy regulations and enabling factors affecting mini-grid access globally.

His presentation, titled "**Policy and Regulation Reforms: Papua New Guinea's Challenges on Mini-Grid Access,**" outlined the significant obstacles faced in mini-grid development, including policy and regulatory gaps, an unstable political climate, and low private sector investment. Key challenges identified were the delayed gazettal of off-grid regulations, the lack of renewable energy sub-sector policies, and the absence of approved standards and guidelines.



Despite these challenges, Kakis highlighted upcoming opportunities for improvement in the 2025 National Planning and Budgeting process. This includes developing renewable energy policies, adopting energy standards and guidelines, and reviewing existing energy policies and acts. Moreover, pre-feasibility studies for five pilot mini-grid sites were scheduled to commence in September 2025.

Participant Reflections

Feedback from participants underscored the conference's vital role in discussing major challenges, such as the need for increased financial resources to achieve universal energy access. The engaging presentations also emphasized real-world applications, like the use of Internet of Things (IoT) technology in solar thermal systems to enhance reliability and build trust in solar technologies.

Attendees appreciated the inclusive, family-like atmosphere of the conference, which fostered collaboration while also providing a space for serious discussions about the future of energy access.

Encouraged by the success and positive feedback from this year's conference, the partner organisations, along with the Scientific and Organising Committees, are excited to announce plans for a 6th Edition of the conference in the spring of 2026, with details to be defined soon.

For those interested in further details, please visit the S-@ccess conference website at www.energy-access-conferences.com.

Stay connected for updates by following the S-@ccess Conference series on [LinkedIn](#) and [X](#).

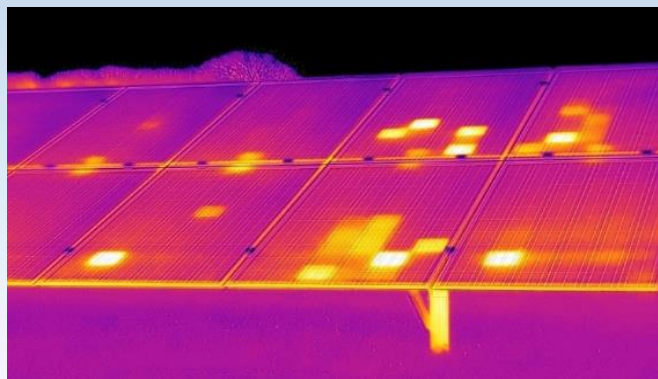
TECHNICAL ARTICLE BY: 

HOT SPOTS IN SOLAR PANELS

Ensuring the safety and efficiency of solar system is paramount. Numerous factors contribute towards the system's safety and efficiency including quality of the equipment utilized, standard of installation, site selection, installation techniques etc. Regarding equipment quality, it is essential to choose a high-quality solar panel. A significant risk associated with low quality solar panel is the emergence of hot spots.

What is Hot Spot in the Solar Panel

Hot spots are areas of excessive heat caused by a defective cell within a panel absorbing power from its surrounding instead of generating it. This not only diminishes the overall efficiency of the panel but, in extreme cases, may pose a fire risk. However, with thoughtful design, rigorous testing and a strong warranty, these risks can be effectively migrated.



Extreme proximity of the current to the short-circuit current can trigger temperature spikes, potentially leading towards the combustion of the panel. Essentially, hotspot drain energy instead of generating it, reducing the panel's efficiency. Sometimes, hot spots appear as brown spots or obvious damage on the panel's surface. However, in most cases, hot spots are invisible to the naked eye. Therefore, just because we cannot see it doesn't imply that it isn't present. The best way to detect hot spot is through **Thermal Imaging**, which can reveal hot spot.

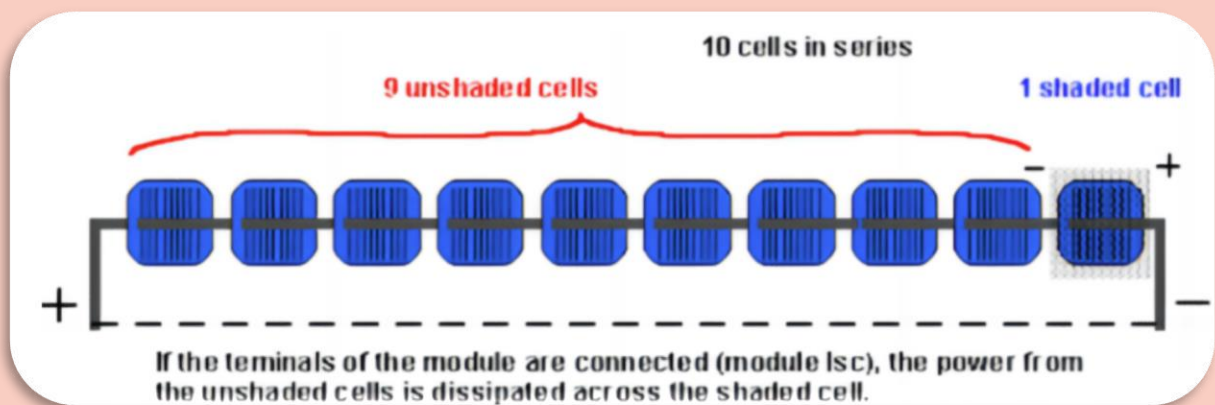


What causes Hot Spot in the Solar Panel?

- 1. Mismatch Panels in Series connection** – In solar system installation where panels are connected in series, a mismatch in panel specifications or conditions could contribute towards to inconsistent power generation in the system. This disparity can cause certain panels to operate at lower current than others, rendering them more prone to hot spot formation particularly during the high solar irradiance periods.
- 2. Partial Cell Aging** - Over time, individual solar cells in the panel may age differently due to factors such as inconsistent sunlight exposure, resulting in a performance imbalance among the cells. This can be another

contributing factor towards creation of hot spot in the panel as certain cells degrade faster than others, impacting the overall efficiency of the solar panel.

3. **Inadequate Ventilation** – Inadequate airflow around the solar panel can also lead to heat accumulation, especially in warmer climates. Insufficient airflow can impede the dissipation of heat generated during energy conversion, exacerbating the hot spot effect. Proper design considerations for ventilation are crucial to maintain the optimal operating temperature.
4. **Installation Errors** – Errors during installation, such as improper tilt or orientation can affect the consistency of sunlight exposure across the solar panel array. This uneven exposure may lead to localized overheating highlighting the necessity of accurate installation practices and standard to prevent hot spot formation.
5. **Shadow masking** – One of the primary factors of hot spots on the solar panel is Shading. When part of the panel is shaded, a substantial reverse bias voltage may arise across the shaded cells due to the series connection of the cells. This may result in the buildup of heat, increase in temperature and development of hot spots in the solar panel. Additional, shading can reduce the overall efficiency of the panel as the shaded cell cannot generate electricity as effectively as the other cells. Another factor contributing to hotspots is the accumulation of dirt and debris. Dirt and dust on the surface of the panel can block some of the incoming sunlight, leading to reduce performance and increased temperature. Debris can also disrupt with the panel’s ability to dissipate heat and airflow.



How to prevent Hot Spot effect?

1. **Choose high-performance solar panels** – high efficiency solar panels can convert solar radiation into electricity energy more efficiency, reducing energy loss and mitigating the severity of the hot spot effect. High performance solar panel typically have lower temperatures sensitivity, enabling them to sustain high energy conversion efficiencies even in the high-temperature environments, mitigating the negative impact of the hot-spot effect on the performance. This is why selecting a solar panel with outstanding performance is crucial.
2. **Optimal orientation and mounting of the solar system** – Ensuring that the solar panels are aligned and tilted in an optimal manner is essential to ensure that the sun’s rays are evenly directed at the solar cells to prevent hot spot problems. By carefully adjusting the orientation and tilt angel of the solar panel, the energy capture efficiency of the solar system can be maximized. An optimised design helps to ensure that the light energy is evenly distributed across the entire surface of the solar cell, avoiding shadow masking to prevent overheating in certain areas and improving the overall performance and stability of solar system.
3. **Air circulation** – Hot spot does not occur for no reason but are due to heat build-up and can be result of a few factors. However, hot spot effects are more likely to occur if the airflow in the solar panel system is restricted. To ensure good system operating, adequate ventilation and air circulation must be ensured to prevent the panels from overheating. Installing power optimisers could be one of the best preventative measures

as they automatically reduce power generation when needed ensuring stable production levels.

- 4. **Regularly cleaning solar panels** - Dirty and dusty panels are more prone to the hot spot effects. It is also necessary to ensure that trees, leaves and other debris do not block direct sunlight from

reaching the solar panels to ensure that light energy is fully utilized. Through the combined application of these methods, solar panels systems can be effectively prevented from developing hot spot effects and their stable and reliable performance can be guaranteed.



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

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