

### Kawene 3MW Solar Farm Project in Vanuatu



**Kawene 3MW Solar Farm**

UNELCO contracted Pacific Engineering Projects Ltd, a SEIAPI member to design and construct the largest solar PV farm in Efatae Island, Vanuatu. The successful completion of the Kawene 3MW Solar Farm represents a major step forward in Vanuatu’s transition to clean and sustainable energy. With an installed capacity of 3 megawatts (MW), this will contribute significantly to reducing reliance on diesel-based generation and supporting Vanuatu’s renewable energy targets.

The key figures of this project include:

- 1944 screw pile
- 4320 of 700W high-efficiency solar panels
- 2 SCADA Panels
- 27 HUAWEI SUN2000-110KTL-M2 inverters
- 22,510m of DC cable
- 1,514m of AC cable
- 280m of RS485
- 250m of fibre optic cables

These figures reflect the scale of the project and the complexity involved in delivering a utility-scale solar installation in a remote location.

A key achievement of the project was that a significant part of the onsite work was done by Ni-Vanuatu personnel across all levels of construction and management including:

- Supervisory roles and above (including subcontractors): 1 site Manager, 2 supervisors, 3 Project Engineer
- Skilled and general workforce: 6 heavy duty machine operators, 2 foreman, 24 skilled labour as well as 12 unskilled labour from Maliudu community
- Female staff (office and site): 1 structural engineer, 1 skilled labour, 1 office administrator and 1 cleaner

These figures include all personnel who contributed to the project, ensuring broad local participation and capacity development.

The project was delivered in close collaboration with UNELCO, whose team played a key role in ensuring technical alignment and operational success. Their support throughout design coordination, construction, and commissioning phases contributed significantly to the overall outcome.



Key UNELCO personnel involved included:

- Tanguy Kerzreho – Director of Electricity Production
- Ron Jacquier – Electricity Project and Planning Manager
- Benjamin Garae – Project Manager
- Nathalie Dovan – Renewable Energy Manager

The partnership was characterized by professionalism, clear communication, and a shared commitment to advancing renewable energy in Vanuatu.



**L-R Nishant Pratap (Regional Manager PEP), Prime Minister of Vanuatu and Charkes Mickey (PEP Site Manager)**

## Waste-to-energy plant consultations for Vuda Point in Fiji

An ambitious proposal to build a waste-to-energy facility in Fiji that could receive hundreds of thousands of tonnes of garbage from Australia and Pacific nations has sparked public backlash and claims of "waste colonialism".

The proposed \$900 million incinerator is being pitched by Australian billionaire Ian Malouf, with the facility reportedly capable of supplying up to 45 per cent of Fiji's electricity grid needs, helping end its dependence on fossil fuel imports.

The incinerator at Vuda Point could generate up to 80 megawatts of power each year, depending on how much rubbish was burned, and would be serviced by a deep-water port. For more details, please visit:

<https://www.abc.net.au/news/2026-04-22/vuda-point-waste-to-energy-plan-sparks-backlash-in-fiji/106557824>



Source: abc.net.au

## Unleash the renewables revolution

UN Secretary-General António Guterres has again urged governments to step up the transition from fossil fuels to clean energy as war and climate risks create unprecedented challenges. The Secretary-General made the case for renewable energy investment, which reached \$2.2 trillion last year or double the amount invested in fossil fuels.

He stressed that "homegrown renewables are the cheapest, fastest and most reliable source of new power," laying the path to real and lasting energy security.

However, this requires action on three fronts: A fair transition; keep your promises; make the right choice

For more details, visit:

<https://news.un.org/en/story/2026/04/1167343>

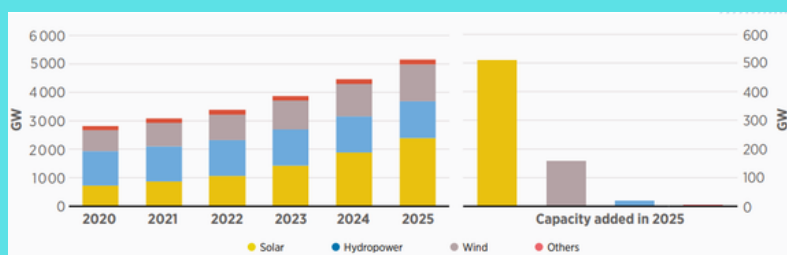
## IRENA Renewable Capacity Statistics 2026

### Renewable Power Capacity by Energy Source

At the end of 2025, global renewable power capacity amounted to 5 149 GW. Solar, in line with the previous year, accounted for the largest share of the global total, with a capacity of 2 392 GW. Renewable hydropower and wind energy accounted for most of the remainder, with total capacities of 1 296 GW and 1 291 GW, respectively. Other renewable capacities were: 154GW of bioenergy; 16GW of geothermal; and 0.5GW of marine energy.

### Renewable Power Capacity Growth

Renewable power capacity increased by 692GW (+15.5%) in 2025. Approximately three-quarters of the capacity expansion was in the form of solar energy, which increased by 511 GW (+27.2%); this was followed by wind energy, with additions of 159 GW (+14.0%). Renewable hydropower capacity increased by 18.4 GW (+1.4%); bioenergy by 3.4 GW (+2.3%); and geothermal energy by 0.3GW (+1.7%). Solar and wind energy continued to dominate renewable capacity expansion in 2025, jointly accounting for 96.8% of all net renewable additions. 2025 marks the highest annual increase in renewable generation capacity to date and the highest growth on record in percentage terms



Even though 2025 marks the largest increase in renewable energy capacity and growth, significant disparities exist amongst countries and regions. Asia accounted for the majority of new capacity in 2025 (74.2%), increasing its renewable capacity by 513.3GW to reach 2 891GW (56.1% of the global total). The majority of this increase occurred in China (+440.1GW). Europe's capacity expanded by 76.8GW (+9.0%) in 2025, with Germany contributing significantly to this growth, adding more than 20.5 GW. Ukraine experienced a notable capacity decline of more than 7.5 GW in 2024, and no change was recorded in 2025. Meanwhile, capacity in North America expanded by 42.1GW (+7.4%), driven by installations in the United States. Africa experienced its largest growth on record, with 11.3GW of additions (+15.9%), driven primarily by Ethiopia, South Africa and Egypt. Oceania's installed capacity increased by 6.1 GW (+8.6%), largely due to additions in Australia; and Central America and the Caribbean expanded capacity by 9.1% (+1.8GW), the largest growth since 2016. The Middle East recorded its largest growth rate, at 28.9% (+12.7GW) in 2025, with Saudi Arabia accounting for the majority of this expansion.

## Solar Power Transforming Pacific Polytech Bua Campus in Fiji



Access to reliable electricity has long been a challenge in rural parts of Fiji, including Bua. However, the installation of a solar power system at the Pacific Polytech Bua Campus marks a major step forward in improving energy access, reducing costs, and supporting sustainable development.

The newly installed solar system now provides electricity to key facilities across the campus. This includes powering three school buildings with lighting and fans, a staff quarter, a colour photocopier, and a borehole pump that supports water access. In addition, the system supplies energy for staff laptops, internet connectivity, and everyday electronic devices such as mobile phones. The solar installation is designed to meet the campus's daily energy needs of 9kWh/day efficiently. The system includes the following:

- A 3-kilowatt solar PV array
- 500 amp-hour battery bank for energy storage
- A 5-kVA inverter/charger
- A 6.0 kVA backup generator



Before the solar system was installed, the campus relied heavily on a diesel generator. This setup required approximately 20 litres of diesel per week, operating around 3 hours per day over 5 days. At earlier fuel prices, this costed about \$44.60 per week (or \$178.40 per month). With April diesel prices rising to around \$2.98 per litre, weekly costs increased to \$59.60, or \$238.40 per month. Annually, the campus spent between \$2,150 and \$2,900 just to run the generator for about 560 hours. These figures did not include additional expenses such as transportation to Nabouwalu to purchase fuel, maintenance, or generator repairs. In rural areas like Bua, fuel costs can be even higher than in urban centres, making this system both costly and inefficient.

With a one-time investment of approximately \$21,000, the solar installation now delivers continuous, reliable energy without the ongoing burden of fuel costs.

The system was installed by the students and staff of Pacific Polytech, led by SEIAPI member, Krishn Raj.

## From Energy Crisis to Energy Security Actions for policy makers

The ongoing conflict in the Middle East has severely disrupted global oil and gas supplies. The selective closure of the Strait of Hormuz, as well as sustained attacks on infrastructure across the region, have fundamentally affected key international energy flows, leading to rapid, erratic increases in oil and gas prices. The effects of these events will be felt across whole economies, extending beyond energy markets into food systems, transportation and wider supply chains, influencing inflation and economic activity simultaneously. Unfortunately, these effects will likely be more pronounced for the most vulnerable communities around the world. There are a variety of actions available to policy makers in their response to the most pressing energy challenges posed by the current conflict that can also ensure their resilience to future fossil fuel shocks:

### Short-term actions (0–6 months)

- Deploy distributed renewable energy solutions to support public services and community responses (healthcare, agriculture, food production, sanitation and other critical infrastructure), leveraging cross-sector partnerships to mobilise rapid responses. Provide financial and logistical support as needed to fast-track deployment.
- Accelerate deployment of solar photovoltaic (PV) battery hybrid mini-grids in off-grid and weak-grid remote areas to reduce the immediate exposure of low-development communities to diesel price volatility and supply disruptions.

### Medium-term actions (6-12 months)

- Fast-track current renewable energy and grid infrastructure projects, and ensure pipeline projects remain funded, including by establishing specific national task forces for this purpose.
- Consider whether existing frameworks and instruments are fit for purpose in the event of high inflation or increasing supply chain costs, and adapt these as needed.

### Longer-term actions (1-3 years)

- Establish comprehensive, clear, supportive policy frameworks to attract energy transition-related investment. Ensure these are coherent with plans and strategies for the energy transition.

Full details available from:

[https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2026/Apr/IRENA\\_policy\\_advisory\\_4-26-1\\_Middle\\_East-\\_2026.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2026/Apr/IRENA_policy_advisory_4-26-1_Middle_East-_2026.pdf)

## Standards Corner Worked Example for Cable Sizing Correction Factors: AS/NZS 3008.1.1:2025

GSES's recent technical article on [AS/NZS 3008.1.1:2025 Updates for Solar Cable Design](#) outlined the key changes introduced in the updated standard which included dedicated DC cable tables, revised HF-110 values, and the terminology shift from “derating factor” to “correction factor.” For solar designers and installers, understanding how to apply cable sizing correction factors under the new standard is just as important as knowing what has changed.

With a new version of AS/NZS 3008.1.1 out, we thought we would revisit cable sizing and correction factors for a typical rooftop PV system. In summary: if the short circuit current of your PV module does not exceed 15A and you are not paralleling strings, 4mm<sup>2</sup> conductors meets this standard. But if you do parallel strings, then you will need to upsize to 6mm<sup>2</sup>.

By the end of this example, you will have a clear picture of when a 4mm<sup>2</sup> DC conductor is sufficient under the 2025 standard, and when project conditions demand an upsize to 6mm<sup>2</sup>.

### System Configuration

For this example, we will consider a typical 10kW inverter PV installation with the following parameters:

- DC array capacity: 13.2kW (30 x 440W modules)
- String configuration: 2 strings of 15 modules
- Cable type: 4mm<sup>2</sup> DC twin XLPE
- Installation method: Enclosed in HD conduit within the roof cavity

### Current-Carrying Capacity (CCC)

Under [AS/NZS 3008.1.1:2025](#), 4mm<sup>2</sup> DC Twin XLPE will use Table 3.22 (new DC table) for Current Carrying Capacity. This is one of the most significant practical changes in the 2025 edition.

DC twin cable is considered 2 single core conductors since each conductor’s insulation is separate and not in an overall sheath.

For this installation, the worst-case scenario is the cable run within the roof cavity, *enclosed in PVC conduit in air*. Although *exposure to sun* yields a lower CCC from the table alone, the enclosed conduit scenario is used here, as it represents the more conservative design condition for Australian rooftop solar installations when correction factors are considered.



From Table 3.22, Column 9: CCC of 4mm<sup>2</sup> XLPE cable = 38A.

Table 3.22 — CCC (d.c.) for two single-core cables — Cross-linked insulation materials (90 °C)

Current carrying capacity (A)

X-90, X-85-90, B-EP-90, B-CPE-90, B-HF-90 or B-CSP-90

TEMPERATURES: Maximum conductor 90 °C / Reference ambient: 40 °C in air, 25 °C in ground

Conductor size (mm <sup>2</sup> )	Installation conditions																			
	Unsheathed					Enclosed					Surrounded by thermal insulation					Buried				
	Spaced		Spaced from surface		Touching	Exposed to sun		PVC conduit in air		Partially		Completely		Buried direct in ground		Buried in PVC underground conduit		Buried in PVC underground conduit		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0.5	14	-	14	-	11	-	9	-	12	-	10	-	6	-	20	-	15	-	17	-
0.75	18	-	18	-	14	-	11	-	15	-	12	-	7	-	25	-	19	-	22	-
1	20	-	20	-	16	-	12	-	16	-	13	-	8	-	28	-	20	-	24	-
1.5	24	-	24	-	20	-	15	-	21	-	16	-	10	-	34	-	26	-	30	-
2.5	36	-	36	-	28	-	21	-	30	-	24	-	14	-	50	-	36	-	41	-
4	48	-	47	-	37	-	28	-	38	-	30	-	19	-	64	-	46	-	53	-
6	61	-	60	-	47	-	36	-	47	-	38	-	24	-	80	-	58	-	66	-
10	84	-	82	-	65	-	48	-	65	-	52	-	32	-	107	-	78	-	87	-
16	112	87	108	84	86	67	64	50	84	65	67	52	43	33	139	107	100	78	112	87
25	151	117	145	112	117	91	86	66	113	87	90	70	58	45	179	139	131	102	146	114
35	186	144	177	137	144	111	105	81	135	105	108	84	72	56	215	167	157	122	175	136
50	228	177	216	167	176	136	127	99	166	129	133	103	-	-	255	198	190	147	211	164
70	291	226	274	212	224	174	161	125	205	159	164	127	-	-	313	243	233	181	250	200
95	361	280	338	262	279	216	198	153	256	198	204	158	-	-	376	291	285	221	309	239
120	423	328	394	306	326	253	230	178	292	227	234	181	-	-	429	332	326	252	358	278
150	487	377	453	350	377	292	263	204	330	255	264	204	-	-	482	373	367	284	402	311
185	567	440	525	407	439	340	305	236	389	302	311	241	-	-	546	424	426	330	464	360
240	682	528	629	487	528	409	363	281	467	361	373	289	-	-	637	494	502	390	540	418
320	794	614	737	562	614	478	428	325	535	412	424	330	-	-	724	568	573	443	626	484
400	918	727	861	667	729	565	492	382	637	494	509	395	-	-	832	645	673	521	718	556
500	1106	858	1034	786	861	668	577	447	787	572	590	457	-	-	957	743	775	601	823	639
630	1315	1019	1202	931	1026	790	680	527	894	693	715	554	-	-	1108	858	925	716	972	753

### Temperature Correction Factor

Roof cavities in Australian climates can reach ambient temperatures of up to 70°C during summer. This significantly exceeds the 40°C reference ambient temperature assumed in the standard’s base CCC tables. Thus, a temperature correction factor (CF) must be applied.

This is where the updated terminology introduced in AS/NZS 3008.1.1:2025 becomes relevant in practice. What was previously called a “derating factor” is now formally referred to as a Correction Factor (CF). The calculation method remains the same, but designers should ensure their documentation and design tools reflect the updated language.

For conductors enclosed in air, the applicable table is Table 3.44.

Table 3.44 — CF for ambient air temperature — Cables in air or heated concrete slabs

Correction factors — a.c. and d.c.

Conductor temperature °C	Air and concrete slab ambient temperature, °C																				
	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	100	110	120	130	140
	150	1.11	1.09	1.07	1.04	1.02	1.00	0.98	0.95	0.93	0.90	0.88	0.85	0.83	0.80	0.77	0.74	0.67	0.60	0.52	0.43
110	1.16	1.13	1.10	1.07	1.04	1.00	0.96	0.93	0.89	0.85	0.80	0.76	0.71	0.65	0.60	0.53	0.38	-	-	-	-
90	1.22	1.18	1.14	1.10	1.05	1.00	0.95	0.89	0.84	0.77	0.71	0.63	0.55	0.45	0.32	-	-	-	-	-	-
80	1.27	1.22	1.17	1.12	1.06	1.00	0.94	0.87	0.79	0.71	0.61	0.50	0.35	-	-	-	-	-	-	-	-
75	1.31	1.25	1.20	1.13	1.07	1.00	0.93	0.85	0.76	0.65	0.53	0.38	-	-	-	-	-	-	-	-	-

NOTE: For heated concrete slabs, the ambient temperature is taken as the operating temperature of the slabs.

Inputs:

- Ambient temperature: 70°C
- Conductor operating temperature (XLPE): 90°C

From Table 3.44: Temperature CF = 0.63

### Bunching Correction Factor

With 2 strings routed through the same conduit, a bunching correction factor must also be applied. Heat dissipation is reduced when multiple cables share an enclosure, which lowers the effective current-carrying capacity of each conductor. Note, that the earth conductor is excluded from the circuit count per the standard’s requirements. For the complete worked example, visit: <https://www.gses.com.au/worked-example-for-cable-sizing-correction-factors/>

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