

EIGHTH MEETING OF THE PACIFIC METEOROLOGICAL COUNCIL

PMC-8

Nuku'alofa, Tonga • 10, 11, 14 September 2026

Eighth Meeting of the Pacific Meteorological Council (PMC-8)

Weather Ready for a Secured and Sustainable Pacific

10, 11, 14 September 2026 | Nuku'alofa, Tonga

Agenda Item 23.1: Powering a Weather Ready Pacific Initiative - Building Energy Resilient, Sustainable and Low Carbon Meteorological Services

Purpose:

To seek PMC approval for the Powering a Weather Ready Pacific Initiative and the development of a Regional Policy and costed Implementation and Investment Plan to transition Pacific NMHSs towards more energy resilient, financially sustainable and low carbon operations.

Objectives:

The objectives of the Powering a Weather Ready Pacific Initiative are to:

1. **Strengthen the energy resilience and continuity of Pacific NMHS operations**, particularly critical forecasting, observing, communications and early warning services, through reliable and resilient energy solutions.
2. **Reduce the operational costs of Pacific NMHSs** associated with electricity and transport, thereby improving their long-term financial and operational sustainability.
3. **Reduce dependence on imported fossil fuels** through the progressive adoption of appropriate renewable energy, battery storage, energy efficiency measures and sustainable transport solutions.
4. **Strengthen the lifecycle sustainability of energy investments** by integrating asset management, maintenance, replacement, business continuity and lifecycle costing into the design and operation of NMHS energy systems.
5. **Reduce the carbon footprint of Pacific NMHSs** and support, where appropriate, national energy transition priorities, Nationally Determined Contributions and wider regional climate commitments.
6. **Develop a coordinated and financeable regional investment pathway** that enables countries, SPREP, Weather Ready Pacific and partners to mobilise climate, energy and development financing for phased implementation according to national circumstances.

EIGHTH MEETING OF THE PACIFIC METEOROLOGICAL COUNCIL

PMC-8

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Background:

Pacific National Meteorological and Hydrological Services (NMHSs) provide essential 24-hour services that underpin national multi-hazard early warning systems, disaster preparedness, aviation, marine safety and climate services. The continuity and reliability of these services depend on secure and affordable energy to operate meteorological offices, observation and communications infrastructure, forecasting systems and transport.

A significant focus of Weather Ready Pacific (WRP) is strengthening the long-term sustainability and resilience of Pacific NMHSs. While WRP is investing in institutional capacity, observation and forecasting infrastructure, communications, training and sustainable maintenance, the long-term cost of operating these systems must also be addressed. The existing paper identifies electricity and transport fuel as important recurrent operating costs for NMHSs and recognises the need to explore measures that can reduce these costs.

Pacific NMHSs remain highly dependent on electricity systems and transport powered by fossil fuels. This creates both a financial and operational vulnerability. High and fluctuating energy and fuel costs place pressure on already constrained operational budgets, while dependence on electricity grids and fuel supply chains can create additional risks to the continuity of meteorological and early warning services during and following major disasters.

A preliminary survey undertaken through Weather Ready Pacific illustrates the scale of this issue. Across the 15 Pacific NMHSs included in the survey, reported annual expenditure on electricity and transport fuel was approximately US\$1.0 million, comprising approximately US\$660,000 for electricity and US\$340,000 for transport fuel. In several NMHSs where operational budget information was available, electricity and transport costs represented a significant proportion of operational expenditure.

The preliminary survey also indicates that many NMHS offices remain predominantly dependent on fossil-fuel-based electricity and that diesel-powered vehicles remain common across the services surveyed. At the same time, some NMHSs are already using or investing in renewable energy, demonstrating an existing foundation upon which a broader regional transition could be developed.

There is therefore an opportunity to consider energy transformation as part of the wider sustainability of Pacific meteorological and early warning services. Appropriate combinations of renewable energy, battery storage, resilient backup power, energy efficiency measures and sustainable transport solutions could reduce recurrent operating expenditure and fossil fuel dependence while strengthening the energy security and business continuity of NMHS operations.

Importantly, the proposed Powering a Weather Ready Pacific Initiative should be viewed primarily as an investment in the resilience, continuity and financial sustainability of Pacific meteorological and multi-hazard early warning services, with reduced greenhouse gas emissions providing an important additional benefit. Such investments may also contribute, where appropriate, to national energy-transition priorities, Nationally Determined Contributions and wider regional climate commitments.

However, the transition must be carefully planned. Renewable energy and sustainable transport investments create their own lifecycle requirements, including maintenance, battery and equipment replacement, technical capacity and asset management.

EIGHTH MEETING OF THE PACIFIC METEOROLOGICAL COUNCIL

PMC-8

Nuku'alofa, Tonga • 10, 11, 14 September 2026

Energy solutions must also be appropriate to individual country circumstances and sufficiently resilient to operate in the challenging environmental and disaster conditions experienced across the Pacific.

A coordinated regional approach provides an opportunity to establish national energy and emissions baselines, identify priority investments, develop common technical and resilience standards, incorporate lifecycle and maintenance requirements, aggregate investment needs and mobilise climate, energy and development financing.

The Powering a Weather Ready Pacific Initiative therefore proposes the development of a Regional Policy and costed Implementation and Investment Plan for Energy Resilient, Sustainable and Low Carbon Pacific Meteorological Services, providing a pathway for phased implementation across Pacific NMHSs according to national circumstances.

Weather Ready Pacific carried out a survey and data collection on the use of fossil fuels to power the NMHSs in the Pacific. The data is stipulated in table 1.

Power and fuel consumption of the NMHSs - Consumption Data

Country	Annual electricity cost (USD)	Annual transport costs (USD)	Total power and fuel cost (USD)	Annual operation budget (USD)	% of Ops budget attributed to electricity and fuel (USD)
Tonga	20,000	40,000	60,000	165,000.00	36.3%
Fiji	120,000	40,000	160,000	1,270,938.00	12.50%
Samoa	50,000	10,000	60,000	171,306.00	35.00%
Niue	10,000	10,000	20,000	70,000.00	28.60%
Palau	17,365	52,095	69,460	317,700.00	21.90%
RMI	47,000	17,800	64,800	200,000.00	32.40%
PNG	48,030	15,660	63,690	313,468.00	17.10%
Tokelau	2,000	600	2,600	17,441.00	14.90%
Cook Is.	12,000	1,450	13,450	27,900.00	48.20%
Solomon Is,	25,000	24,000	49,000	228,994.00	21.40%
Nauru	16,000	0	16,000	45,895.00	34.90%
FSM	108,000	33,000	141,000	746,575.00	18.90%
Kiribati	24,000	49,035	73,035	173,796.00	42.00%
Tuvalu	15,000	12,000	27,000	152,286.00	17.80%
Vanuatu	145,000	42,500	187,500	441,458.00	42.50%
Totals	\$659,395	\$348,140	\$1,007,535	\$4,342,757	28.5%

Table 1: Power consumption data from Pacific NMHS's related to fossil fuel costs vs Operational Budget

**please note that some are estimates based on conversations with Directors who don't have full control over their operational budget but have given estimate of what they feel their operational budget is close to. Figures have changes as well from the initial survey from FSM as FSM has 3 different Met Services operating independently of each other.

EIGHTH MEETING OF THE PACIFIC METEOROLOGICAL COUNCIL

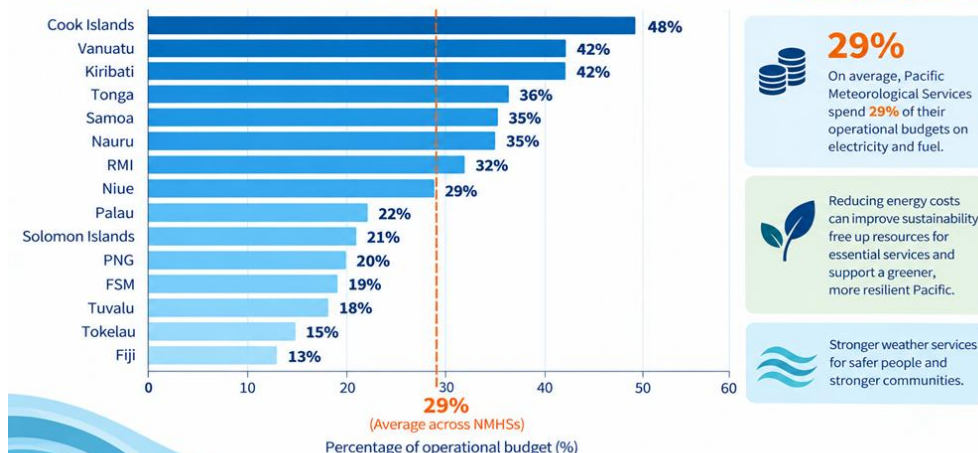
PMC-8

Nuku'alofa, Tonga • 10, 11, 14 September 2026

Share of Meteorology Operational Budget Spent on Electricity and Fuel

Pacific Meteorological Services (Survey Results)

Weather Ready Pacific
Safer People. Stronger Communities.



29%

On average, Pacific Meteorological Services spend **29%** of their operational budgets on electricity and fuel.



Reducing energy costs can improve sustainability, free up resources for essential services and support a greener, more resilient Pacific.



Stronger weather services for safer people and stronger communities.

Figure 1: Share of Pacific NMHSs operational budgets eaten up by fuel and power costs

Figure 1 shows percentage of the NMHSs National operational budget that goes to fuel and electricity. The Operations Budget show here is what's left after Salaries are deducted.

Annual Meteorological Service Operational Budgets

Pacific Island Countries & Territories

Weather Ready Pacific
SAFER PEOPLE
STRONGER COMMUNITIES



PEOPLE
Safer communities



PARTNERSHIPS
Stronger collaboration



RESILIENT FUTURES
A more secure Pacific

A Weather Ready Pacific

FOR A SAFER, STRONGER TOMORROW

Figure 2: Share of Pacific NMHSs operational budgets eaten up by fuel and power costs

Operational budget range after salaries is USD12K-1.27M. The percentage that goes to fuel and power averages between 20-30%. Salaries account 70-80% of the Met Service budget. The entire Pacific operations budget added up is USD4.3M. This is the value of

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PMC-8

Nuku'alofa, Tonga • 10, 11, 14 September 2026

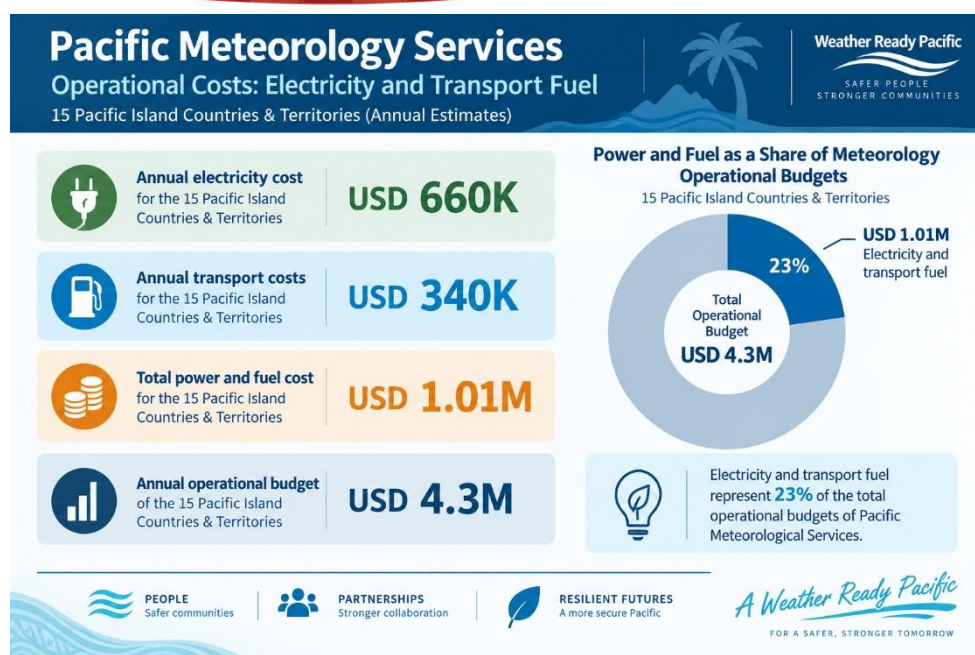


Figure 3: Annual regional totals vs operations budget



Figure 4: Renewable energy target scenarios

If a realistic target of 90% renewable is set by regional met offices for the reducing of operational costs and building resilience of early warning systems. A 90% renewable will mean a saving of USD9.1M

EIGHTH MEETING OF THE PACIFIC METEOROLOGICAL COUNCIL

PMC-8

Nuku'alofa, Tonga • 10, 11, 14 September 2026

Recommendations:

The Meeting is invited to:

1. **Endorse** the Powering a Weather Ready Pacific Initiative to support the progressive transition of Pacific National Meteorological and Hydrological Services (NMHSs) towards energy-resilient, financially sustainable and low-carbon operations, recognising the importance of reliable and affordable energy to the continuity of meteorological and multi-hazard early warning services; and
2. **Request** SPREP, through Weather Ready Pacific, to work with Members and partners to develop a Regional Policy and costed Implementation and Investment Plan, including national energy, expenditure and carbon baselines and appropriate renewable energy, energy storage, energy-efficiency and sustainable transport solutions, according to national circumstances.
3. **Request** that implementation prioritise reduced operational costs, energy resilience and service continuity, and incorporate lifecycle costing, maintenance, asset replacement and business continuity, linked where appropriate to the proposed Weather Ready Pacific Sustainable Maintenance Facility.
4. **Encourage** Members to integrate NMHS energy priorities into relevant national energy, climate and development frameworks; and invite development partners, climate and energy funds, development banks and the private sector to support phased implementation and financing, with progress reported to the Pacific Meteorological Council.
5. **Request** approval of the following text to be included in the **Ministerial Declaration**

“We the endorse the progressive decarbonization and greening of Pacific NMHSs as a measure to strengthen the resilience and financial sustainability of multi-hazard early warning systems; request SPREP, through Weather Ready Pacific, to work with Members and partners to establish national energy and carbon baselines and develop a Regional Decarbonization and Greening Policy, costed Implementation and Investment Plan, including measurable targets, lifecycle and maintenance requirements, resilient renewable energy systems and sustainable transport solutions; and invite climate, energy and development financing partners to support phased implementation according to national circumstances.”

EIGHTH MEETING OF THE PACIFIC METEOROLOGICAL COUNCIL

PMC-8

Nuku'alofa, Tonga • 10, 11, 14 September 2026

Annex 1 - Results of the De-carbonisation Survey on energy consumption of NMHSs Office power and Transport

Country	% Diesel powered Office	Officer power bill	% Renewable powered Office	Annual budget for renewables	Are all Met vehicle diesel	Average annual diesel budget for vehicle
Fiji	80	120,000	20	2,000	Yes	40,000
Tuvalu	90	15,000	10	0	Yes	12,000
Tonga	80	20,000	20	10-20K	Yes	30-40K
Cook Islands	100	11,000	0	No answer	Yes	11,000
Niue	80	10,000	20	0	No	Less than 10K
Vanuatu	80	144266.05	20	42431.19	No	42431.19
PNG	100	178,246.80	0	0	Yes	69,760.50
Tokelau	90	2000	10	No sure	Yes	600
FSM	90	30,000	10	0	Yes	3,000
Samoa	90	50,000	10	10,000	Yes	10,000
Palau	80	48,000-50,000	10	NA	Yes	6,000-8,000
Kiribati	90	24,000	10	5,000	Yes	68,681 AUD
Naoero	90	18,000	10	No renewal	No	0
Solomon is	90	24,864.32	10	8,000	Yes	24,000.00
RMI	90	30,000	10	3,000	Yes	6,000