GN SEC Global Network Regional Sustainable Energy Centres

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

PCREEE Pacific Centre for Renewable Energy and Energy Efficiency
SE4ALL Centre of Excellence to Promote Sustainable Energy Markets, Industries and Innovation

TERMS OF REFERENCE

For the delivery of specialised services related to the development of the Pacific Renewable Ocean Energy Readiness Programme (PROERP) in support of the climate resilience and blue-green economy aspirations of Pacific Islands and Territories

UNIDO Project Title: The Global Network of Regional Sustainable Energy Sustainable Centres Platform: South-South and triangular cooperation for accelerated progress (Project ID 180301), Date: 17 March 2025

1. INTRODUCTION

The United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability. The mission of UNIDO, as described in the *Lima Declaration* and the *Abu Dhabi Declaration*, is to accelerate inclusive and sustainable industrial development in Member States. Accordingly, the Organization's programmatic focus is structured in four strategic priorities: Creating shared prosperity; Advancing economic competitiveness; Safeguarding the environment; and Strengthening knowledge and institutions.

Since 2010, UNIDO supports regional economic communities in the Global South in the creation and operation of regional sustainable energy centres, that provide technical support "from the region for the region". The ten centres cover 120 member states, including most least developed countries (LDCs) and small island developing states (SIDS). UNIDO hosts the GN-SEC platform, that facilitates south-south and triangular cooperation on innovative renewable energy and energy efficiency solutions of common interest and priority. In support of the blue economy, climate mitigation and adaptation aspirations of SIDS, the area of low-carbon shipping and renewable ocean energy (OE) for productive uses was selected as one of the prioritised SSTC activities under the GN-SEC platform.

This correlates with the international climate commitments under the UNFCCC and recommendations of the High Level Panel for a Sustainable Ocean Economy that has identified seven ready-to-implement and viable ocean-based climate solutions that can deliver up to 47% of the annual greenhouse gas (GHG) emissions reductions needed by 2050 to keep the planet from warming a catastrophic 2 degrees Celsius. Most of these solutions are either directly or indirectly addressing the energy sector, such as the scaling of ocean-based renewables, the decarbonisation of ocean-based transport and coastal tourism, the phasing out of offshore oil and gas, the expansion of sustainable blue food production, restoring of coastal and marine eco-systems, as well as carbon removal and storage.

2. BACKGROUND

Renewable OE includes an array of technologies using marine space (e.g., offshore wind, floating PV) or non-living marine resources (e.g. wave and tidal energy, ocean thermal energy conversion, salinity gradients, seawater air conditioning, biofuels or bioenergy from algae). It also comprises non-ocean based renewable energy solutions serving traditional and emerging marine industries, such as fishery and aquaculture, desalination, biotechnology, deep sea mining, ocean intelligence, coastal tourism, shipping and ports. In terms of shipping and ports, this also offers a critical pathway for maritime decarbonisation in the Pacific, supporting port electrification, alternative fuels for shipping (such as green hydrogen and ammonia), and energy self-sufficiency for remote island transport networks. By

co-location, OE has the potential to become a multifunctional enabler for all kinds of blue industries in SIDS and coastal countries, including the production of green hydrogen.

However, ocean energy technologies (OETs) are at different stages of readiness and a number of them have still not reached market adoption. Whereas offshore wind (bottom fixed and floating) and blue solar PV applications have reached industrial roll-out, other solutions are still at pre-commercial stage or lower levels of technology readiness. In the maritime sector, additional barriers include the absence of regional incentives for low-carbon shipping, the lack of alternative fuel infrastructure at ports, and limited demonstration projects for green shipping. Due to ambitious deployment and support programs in the Global North - particularly in Europe, US and Asia - it is projected that most of these technologies will become commercial during the next decade. Therefore, SIDS have a particular window of opportunity to harness the benefits of OE and decouple economic activity from expensive fossil fuel imports within the exclusive economic zones.

Energy security and economic competitiveness of Pacific island countries and territories (PICTs) highly depends on a successful transition away from imported fossil fuels to renewable energy and the adaptation of energy infrastructure to climate change impacts, particularly in the power and transport sector. In this context, Pacific governments have adopted ambitious renewable energy targets and have started to address infrastructure resilience in National Adaptation Plans (NAPs) and energy planning. Due to limited land availability and technical limitations of variable renewable energy and storage solutions, OETs become an interesting complementary solution particularly in the mid- and long-term.

However, so far PICTs and SIDS in general, do not benefit from these emerging technologies and only a few prototypes have been implemented. OETs are often mentioned in blue economy plans but are not considered in energy policies, power expansion plans or coastal spatial planning. There are manifold demand- and supply-side barriers related to policy, regulation, standards, knowledge, capacity, technology access, finance, innovation and investment. Therefore, a regional and global SIDS-SIDS approach can facilitate equal progress among countries, joint learning, economies of scale and significantly contribute to the full commercialisation of these technologies.

In this context, the Fifth Meeting of the Pacific Regional Energy and Transport Ministers, held from 11 to 12 May 2023 in Vanuatu, adopted the „Port Vila Call for a Just Transition to a Fossil Fuel Free Pacific" and acknowledged the importance of renewable OE for building a climate-resilient Pacific Ocean-Energy Economy. The potential of renewable OE has been mentioned in several key policies of the Pacific, including the 2050 Strategy for the Blue Pacific Continent, the Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) 2017 – 2030 and the Framework for Energy Security and Resilience in the Pacific (FESRIP) 2021–2030. The Minister's meeting also called for the development of a Pacific One-Maritime Framework (POMF), and the zero draft of the POMF 2026-2050 (March 2025) has green maritime transport, infrastructure, and ports as one of the six goals, aligning closely with the Pacific's energy transition goals.
Based on a prepared policy paper, the Pacific Minister of Energy directed UNIDO and the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE), hosted by the Pacific Community (SPC), to develop a regional ocean energy readiness program, which aims to mitigate barriers and bring the latest innovations to the Pacific. The Ministers further encouraged close cooperation with the Global Ocean Energy Alliance (GLOEA), which was launched by UNIDO, SIDS DOCK and various SIDS governments under the GN-SEC at the UN Ocean Conference in 2022. The GLOEA provides a platform to connect SIDS and coastal developing countries in the Global South with the emerging OE industry, as well as concessional finance and venture capital from the Global North. The GLOEA will be implemented through an intra-regional approach involving several GN-SEC centres, including CCREEE, SICREEE, ECREEE, SACREEE and CEREEAC.

3. OBJECTIVES AND SCOPE OF WORK

On this background, UNIDO and PCREEE seek consultancy support for the development of a technical OE baseline and needs assessment, as well as a project document for the Pacific Renewable Ocean Energy Readiness Program (PROERP). Both documents will be presented for approval in the Sixth Meeting of Pacific Ministers on Energy and Transport in 2026. The assignment includes the following scope of work and key deliverables:

First, the contractor will develop the Pacific Ocean Energy Baseline and Needs Assessment Report (max. 40 A4 pages), which will inform decision-makers on the future perspectives of renewable OE in the Pacific. The report will focus on the following aspects:

- Definition of renewable OETs (in line with the wider definition indicated above);
- Overview on the global readiness, economics, deployment status and perspectives of OETs;
- Deployment status and previous OE experiences in PICTs and other SIDS; assess the integration of OE in existing policy and planning frameworks of PICTs;
- Identify and categorise key market enablers for OE among PICTs (public institutions, science, financiers and investors, corporates, entrepreneurs); provide a list with key contacts;
- Cost-benefit analysis: identify potential economic, social and environmental opportunities/benefits and risks/costs (cost-benefit analysis) for PICTs; describe the potential contribution of OE to climate change mitigation, adaptation and disaster response;
- Identification of key demand-side and supply-side barriers, which hinder the OETs market uptake in PICTs;
- Suggest a practical roadmap and identify concrete actions to address them on regional and national level in the short- and long-term; these actions will be incorporated in the project document;
- Undertake a consultative needs assessment (e.g. interviews, surveys) to assess the awareness and perceptions of decision-makers and experts of PICTs, donors and financiers on OETs and to identify priority actions to overcome barriers; this will also consider the perspectives of maritime sector stakeholders, ensuring that ocean energy solutions align with the specific needs of shipping, ports, and island connectivity needs;
- Identify PICTs, which have a particular interest in the regional program or national OE projects to be funded by donors or climate finance (e.g. GEF, GCF, Adaptation Fund);

The deliverable requires a broad range of virtual consultations with national and regional key stakeholders in PICTs and with potential financiers (e.g. ADB, Australia, New Zealand, Nordics, Japan, EU, China). Due to the very early OE technology deployment status and limited budget there is no need for country visits. The online consultations shall be led by a local expert (preferably located in Fiji) as part of the consultancy team and will be supported by PCREEE and UNIDO. A physical meeting with the SPC teams of the Energy and Ocean and Maritime Programmes is recommended.

In line with provided UNIDO templates, the contractor will develop a project document on Pacific Renewable Ocean Energy Readiness Program (max. 60 A4 pages incl. results framework with measurable gender aggregated indicators and five-years budget) to be executed by UNIDO in partnership with PCREEE/SPC, SIDS DOCK and other partners. The program will position PCREEE as a regional knowledge and service hub for the promotion of OE technology markets in PICTs during the PCREEE Third Operational Phase 2026-2030. The program will also consider leveraging phase 2 (2025-2027) of the Pacific Maritime Technology Cooperation Centre (MTCC-Pacific) for the maritime sector. The program will address existing barriers through targeted regional actions in the areas of policy and regulation, knowledge management and awareness, qualification and certification,

demonstration of technology and business models, as well as the promotion of investment, entrepreneurship and innovation. It will also build triangular partnership with key institutions and industry associations in Europe, US and Asia. The program will include a SIDS-SIDS cooperation component within the scope of the Global Network of Regional Sustainable Energy Centres (GN-SEC). The contractor will schedule meetings with other GN-SEC centres with SIDS coverage to identify potential synergies and joint activities. For example, the CCREEE in Bridgetown, Barbados, has already undertaken OE awareness raising and training activities in the past. Knowledge and technology transfer from pioneering countries in SIDS and internationally (e.g. Europe, US, China, Japan) will be part of the program.

Deliverable 1:

- Inception Report (incl. list of documents to be reviewed, interviews and meetings to be held)

Deliverable 2:

- Pacific Ocean Energy Baseline and Needs Assessment Report including a short summary for policy makers and presentation deck

Deliverable 3:

- Project document on the regional OE readiness program (incl. results framework and budget, gender aggregated indicators, risk assessment)

4. DETAILED TASKS, DELIVERABLES AND TIME-LINE

All produced end-products need to be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in English. All the documents are subject to rounds of quality reviews and feedback loops, which might take some time and cause longer delays. The detailed deliverables of the assignment are explained below:

Tasks/Activities	Deliverables	Tentative schedule	Location
1. **Inception phase** The contractor will provide an inception report, incl. a work-time diagram, description of the applied methodologies and tools, a list of literature and stakeholders to be contacted, as well as a table of content for the baseline and needs assessment. The inception report and commencement of the assignment requires approval by UNIDO HQs and PCREEE. At least one online inception meetings will be required.	Inception report in English (word document or presentation deck), incl. a work-time diagram, description of the applied methodologies and tools, a list of literature and stakeholders to be contacted, as well as a table of content for the baseline and needs assessment.	One month after contract countersignature (3 working days)	Home based
2. **Develop the Pacific Ocean Energy Baseline and Needs Assessment Report**, including a summary with policy recommendations for decision makers, in line with the requirements described	- One (1) baseline and needs assessment report (max. 40 A4 pages) provided, fully edited and designed,	The draft report is required four months after contract	Home based

under section 3 above; the assessment requires approval by PCREEE and UNIDO and is subjects to several rounds of commenting.	ready to be published in English. - A summary with policy recommendations for decision makers (max. 1-2 A4 pages). - A presentation deck on the main findings of the assessment - Digital library of used documents and modifiable files with raw data, analytics and graphics.	countersigna ture (the final version needs to be submitted together with the project document within 6 months) (30 working days)	
3. Develop a project document on the Pacific Renewable Ocean Energy Readiness Program in line with the provided UNIDO template, incl. results framework with measurable gender aggregated indicators, five-year budget; the project document will be completed in close teamwork with UNIDO; the final version requires approval by UNIDO and PCREEE;	- One (1) project document (max. 60 A4 pages) provided, fully edited and designed, ready to be published in English. - PROERP leaflet and slide desk fully edited and designed, ready to be published in English - Digital library of used documents and modifiable files with raw data, analytics and graphics.	Six months after the contract countersigna ture (20 working days)	Home based and in STP
4. Coordination and consultations with key stakeholders in PICTs and internationally - Regular online meetings with the team of UNIDO, PCREEE and other GN-SEC centres (at least monthly); - Undertake online surveys and interviews with key stakeholders in PICTs, OE industry, donors and financiers; - Presentation of the baseline and needs assessment and the project document in the context of 2 online consultations with PICTs, facilitated by UNIDO and PCREEE under the GN-SEC;	<u>Deliverables in English:</u> - Meeting minutes in project related engagements - Report on the online consultations - Presentation decks	Six months after contract countersigna ture (7 working days)	Home-based and in STP

5. Total		**60 working days (int. rates/local rates as applicable)**	

5. IMPLEMENTATION AND PAYMENT SCHEDULE

The activities under this contract shall be completed within six (6) months from the effectiveness of the contract. It is required that the contractor employs at least one local expert in PICTs (preferably located in Fiji) to ensure quality data and local buy-in. The work-time diagram is indicated below:

Deliverables	Months						Payment Schedule
	1	2	3	4	5	6	
Deliverable 1 – Inception report							20%
Deliverable 2 – Draft baseline report, summary for decision-makers and power point presentation				X			30%
Derivable 3 Final project document and baseline report, leaflet and slide decks						X	50%

The documents will be provided by the contractor fully edited, designed (incl. graphs) and ready to be published in English; All documents will include an executive summary at the beginning. In addition, the contractor will be required to deliver the following:

- Item **High-resolution photographs (min. 3 MB, at least 20)** – that illustrate the undertaken activities. The consultants will cede all appertaining rights to unlimited use of the respective pictures to UNIDO and PCREEE (SPC).
- Item **All used raw files and calculation sheets** in editable form (e.g. xls). All files need to be handed over and become property of UNIDO and PCREEE (SPC). Collected data will be distributed through the national energy information system.

6. COORDINATION AND REPORTING

The contractor will report to the UNIDO Project Manager and his team in Headquarters (Vienna) and closely coordinate with the PCREEE Manager in Tonga, as well as the Ocean and Maritime Programme of SPC. The contractor will closely coordinate with the PCREEE National Focal Institutions (NFIs) relevant key stakeholders in SPC Member States, international donors and partners. All draft and final deliverables are subject to approval by UNIDO and PCREEE. It is the overall responsibility of the contractor to collect reliable quality data through its local team. The main communication language will be English. The assignment requires close coordination with energy institutions in PICTs and international partners.

7. Application Procedure

Bidders are requested to submit their proposals by registering on the UNIDO e-procurement portal (https://procurement.unido.org/). In case of difficulties, please contact the UNIDO Help Desk at procurement@unido.org.

8. Qualification Requirements and Technical Evaluation Criteria

Please refer to Appendix 2 "Qualification Requirements and Evaluation Criteria" of the Bidding Documents for the full list of technical requirements.

9. Commercial Evaluation Criteria

The financial proposal in Euro (EUR) shall be comprehensive comprising all costs (including a detailed work-time-expert-diagram indicating daily rates for individual team members according to their level of expertise). Offers without clearly stating the all-inclusive price will be rejected. UNIDO is exempt from all direct taxes, customs duties and charges of a similar nature. Proposals must be exclusive of VAT and other applicable taxes.

Please refer to Appendix 2 "Qualification Requirements and Evaluation Criteria" of the Bidding Documents for the full list of commercial requirements. The commercial proposal must follow the instructions provided in Appendix 3 "Preparation of Financial Proposal" of the Bidding Documents.

10. Further information

- GN-SEC platform, www.gn-sec.net and https://gn-sec.net/content/global-ocean-energy-alliance-gloea
- UNIDO projects, https://open.unido.org/projects/M0/projects/180301 and https://open.unido.org/projects/M0/projects/230058%C2%A0%C2%A0&
- PCREEE, www.pcreee.org and www.spc.int
- GLOEA, https://gloea.org/
- Outcomes of the 5th Pacific Regional Energy and Transport Ministers Meeting (2023), https://gem.spc.int/meetings/5th-pacific-regional-energy-and-transport-ministers-meeting-2023
- CALL FOR OCEAN ENERGY ACTION – POWERING THE GREEN AND BLUE ECONOMY ASPIRATIONS OF THE PACIFIC, E10_Call for Ocean Energy Action_final_270323

Note to suppliers: **A circular economy** is an economic system that tackles global environmental challenges like climate change, biodiversity loss, waste, and pollution. It is a framework of four principles, driven by design: eliminate waste and pollution, keep products and materials in use, regenerate natural ecosystems and use renewable energy.

Bidders are encouraged to display the products' circularity and sustainability compliance with the Economic, Social and Governance principles under the UN Compact (https://www.unglobalcompact.org/take-action/leadership/integrate-sustainability/roadmap/supply-chain).