

CTCN Technical Assistance

Pre-feasibility Study on Ocean Energy focusing on Salinity Gradient Energy Technology and Electrochemical Ocean Thermal Energy Conversion in Papua New Guinea

Project Steering Committee (PSC) Meeting Reports

Consolidated Package

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Implementer: **Korea Institute of Energy Research (KIER)** – Distributed Energy Team, Jeju Global Research Center

Period covered: November 2024 – March 2026

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1. Introduction

This consolidated package presents the records of the Project Steering Committee (PSC) meetings held during the implementation of the CTCN Technical Assistance to Papua New Guinea on the pre-feasibility study of Salinity Gradient Energy (SGE), Electrochemical Ocean Thermal Energy Conversion (e-OTEC), and Blue Battery Technology (CTCN Request ID# 2024000020 / PCA Reference CTCN 24-017).

The package consolidates: agendas, attendance records, key discussions, decisions taken, and action items from each PSC meeting held over the implementation period (November 2024 to March 2026). It is submitted as a supporting record under Output 2 (Activity 2.1) of the Response Plan and is intended to support CTCN closure and NDE validation.

A total of five PSC meetings were held during implementation: three online and two in-person. The PSC functioned as the principal governance body for the technical assistance, providing strategic guidance, validating outputs, and coordinating engagement among PNG counterparts and the implementer (Korea Institute of Energy Research, KIER).

2. Project Steering Committee – Composition and Role

2.1 Composition

The Project Steering Committee was established at the start of the technical assistance and comprises representatives of the following organisations:

Organisation	Representative(s)	Role
Korea Institute of Energy Research (KIER)	Dr. Hanki Kim – Chief, Distributed Energy Team Dr. Woonho Baek (Primary)	<i>Implementer</i>
Climate Change and Development Authority (CCDA) <i>Head: Ms. Debra Sungi (Acting Managing Director)</i>	Mr. Danny Nekitel – Manager, Mitigation / CTCN Focal Point (Primary) Ms. Emily Pomoh – CCDA technical lead	<i>National Designated Entity (NDE)</i>
National Energy Authority (NEA) <i>Head: Mr. Ronald Meketa (Managing Director)</i>	Mr. Larsen Daboyan – Manager, Research and Statistics (Primary)	<i>Proponent</i>
Independent Consumer and Competition Commission (ICCC) <i>Head: Mr. Paulus Ain (Commissioner & CEO)</i>	Mr. Francis Sakato – Manager, Productivity (Primary) Mr. Willie Tondop – Principal Analyst, Productivity (Alternate)	<i>Regulator</i>
National Institute of Standards and Industrial Technology (NISIT)	Mrs. Miriam Idok (formerly Namaliu) – Executive Manager, Standards Development Division (Primary)	<i>Standards / Technology</i>

Organisation	Representative(s)	Role
<i>Head: Mr. Victor Gabi (Director General)</i>	Mr. Russell Kilalema – Project Coordinator, Standards Development Division (Alternate)	
University of Papua New Guinea (UPNG) <i>Head: Prof. Chalapan Kaluwin</i>	Prof. Chalapan Kaluwin – Professor of Environmental Science; Director, Centre for Climate Change & Sustainable Development (Primary)	<i>Academia / Capacity-building partner</i>
Conservation and Environment Protection Authority (CEPA) <i>Head: Mr. Jude Tukuliya (Managing Director)</i>	Mr. Walimu Apaka – Principal Scientific Officer (Hydrology), Infrastructure and Utilities Unit (Primary)	<i>Environmental safeguards</i>
PNG University of Technology (Unitech) <i>Head: Prof. Ora Renagi OL (Vice-Chancellor)</i>	Dr. A/Prof. Dapsy Olatona – Associate Professor (Primary) Dr. Shoeb Ahmed Syed Mr. Kenny Michael (Alternate)	<i>Academia / Capacity-building partner</i>
Water PNG <i>Head: Mr. Benard Thomas (Acting CEO)</i>	Mr. Vali Mae (Primary)	<i>Utility (water) / Stakeholder</i>
PNG Power Limited (PPL)	/	<i>Power utility</i>
Department of Petroleum & Energy	/	<i>Ministry</i>
UNEP-CTCN	Dr. Suil Kang – UN CTCN Mr. Hoyoung Jo – UN CTCN	<i>Funding institution/oversight</i>

2.2 Role of the PSC

The PSC is the principal governance body for the technical assistance and is responsible for:

- Providing strategic guidance on the direction and scope of the TA;
- Reviewing progress against the work plan and Response Plan logframe;
- Endorsing key deliverables (work plan, M&E plan, gender assessment, pre-feasibility study, GCF Concept Note, closure report)
- Guiding site screening and equipment deployment plans;
- Coordinating in-country logistics for missions and workshops;
- Tracking risks and issues identified during implementation;
- Approving deviations from the Response Plan, including the two no-cost extensions.

3. Summary of PSC Meetings

#	Meeting	Date	Format	Key focus
1	1st PSC Meeting	19 February 2025	Online (Zoom)	Inception; introduction of PSC members; presentation of SGE and e-OTEC technologies; monitoring instrument plan; PNG visit planning
2	2nd PSC Meeting	19 March 2025	Online (Zoom)	Confirmation of monitoring site; techno-economic assessment of SGE / e-OTEC / Blue Battery; visiting plan to PNG
3	In-person PSC + Country Mission	25–30 May 2025	In-person, Port Moresby	Site visit to Kalo (Central Province); installation of lab-scale RED equipment at UPNG; capacity-building seminars; KIER–UPNG young professionals workshop on marine energy
4	3rd PSC Meeting	19 December 2025	Online (Zoom)	Project administration update; deadline extension to 31 May 2026; marine energy potential assessment results (4 GW SGE / 368 MW technically feasible / e-OTEC at ~20% efficiency – corrected in the revised pre-feasibility study to ~1.2 GW gross / ~360–368 MW; ~20% is efficiency relative to the Carnot limit, ~1% absolute); planning of South Korea wrap-up program
5	4th PSC Meeting (Final, wrap-up)	9 March 2026	In-person, Jeju (Republic of Korea)	Final review of TA deliverables; GCF Concept Note review with Ecosian; preparation for joint visit to GCF on Day 6 (visit subsequently canceled)

4. 1st PSC Meeting – 19 February 2025

4.1 Meeting overview

Date	19 February 2025
Format	Online via Zoom
Chair / convener	Dr. Hanki Kim (KIER) – Implementer
Welcome remarks	Mr. Danny Nekitel (CCDA / NDE)
Attendance	7 participants, around 14% women

4.2 Indicative agenda

The 1st PSC meeting was structured as an inception meeting introducing PSC members, the implementer (KIER), and the technical scope of the TA.

Agenda items:

- Welcome remarks from CCDA / NDE (Mr. Danny Nekitel);
- Introductory statements by each PSC member institution on their roles and responsibilities;
- Technical presentation: Salinity Gradient Energy and e-OTEC (Dr. Hanki Kim, KIER);
- Discussion: monitoring instrument plan and site identification;
- Discussion: visiting plan to PNG.

4.3 Key discussions

Introduction of PSC members

Each PSC member institution introduced its role, mandate, and the contribution it would bring to the technical assistance. Discussions emphasized the multidisciplinary nature of the PSC, spanning the national designated entity (CCDA), the proponent (NEA), the regulator (ICCC), environmental safeguards (CEPA), utilities, standards (NISIT), and academic institutions (UPNG, Unitech). The implementer (KIER) presented the team composition, including Dr. Hanki Kim as project lead and senior researchers from the Distributed Energy Team at the Jeju Global Research Center.

Technology presentation: Salinity Gradient Energy and e-OTEC

Dr. Hanki Kim presented the underlying technologies covered by the TA:

- Salinity Gradient Energy (SGE) and Reverse Electrodialysis (RED): power generation through electrochemical reaction at the interface of seawater and freshwater. Chemical potential equivalent to ~200 m (as presented; ≈270 m for 2.7 MJ/m³) of hydraulic head; achievable power density >200 W/m² of electrode (or 0.5–1.0 W/m² of membrane); LCOE of USD 0.05–0.30/kWh depending on input water source (brine yields the lower bound treated wastewater the upper bound);
- Electrochemical Ocean Thermal Energy Conversion (e-OTEC): generates electricity through electrochemical reactions driven by temperature gradients between surface and deep seawater. Achieves

~10–15% efficiency (relative to the Carnot limit; ≈1% absolute) vs. 2.5–3.0% absolute for conventional turbine-based OTEC;

- Blue Battery Technology: seawater-based energy storage with non-flammable design and LCOS <0.2 USD/kWh (target);
- KIER track record: Korea’s first 5 kW RED plant in Jeju, South Korea (2018), with net energy efficiency 29.2% and availability 20/24 hours; record of 1.9 W/m² power density on patterned ion-exchange membrane; 10 kWh Blue Battery pilot operation.

Monitoring instrument plan and site identification

KIER presented the plan for deploying seawater and river-water monitoring instruments. Discussions covered:

- Confirmation of monitoring site (to be validated during the in-country mission, then planned for March–April 2025);
- Selection of measurement equipment: pressure sensors, current meters, RBR CTD instruments, and conductivity/temperature/pH sensors (RBRcoda³ T.ODO with 8μM accuracy and depth rating to 6,000 m);
- Data acquisition methodology and analysis approach;
- Identification of local partners for ongoing monitoring support.

Visiting plan to PNG

Initial planning for the in-country mission was discussed: targeted timing of March–April 2025 (subsequently shifted to late May 2025), duration of 7–10 days, and a scope that included site validation, equipment deployment, capacity-building seminars at UPNG, and an in-person PSC meeting. Logistics coordination would be handled with CCDA support.

4.4 Decisions

- PSC formally established with PNG-side member organizations plus KIER (implementer).
- Dr. Hanki Kim confirmed as PSC convener; quarterly PSC meetings to be held during implementation (in practice, meetings were held in February, March, May and December 2025 and March 2026).
- KIER to proceed with detailed planning of the in-country mission (target March–April 2025).
- Seawater monitoring instrument procurement and deployment plan endorsed in principle.

4.5 Action items

Action	Responsible	Deadline
Confirm specific monitoring site location for site validation	KIER, with NEA / CCDA support	Before 2nd PSC
Procure and prepare monitoring instruments for shipment	KIER	By April 2025
Coordinate visa, accommodation and transport for the in-country mission	CCDA / KIER	Before mission
Identify local logistics partner for marine site access	UPNG / NEA	Before mission
Schedule 2nd PSC meeting	KIER (convener)	Mid-March 2025

5. 2nd PSC Meeting – 19 March 2025

5.1 Meeting overview

Date	19 March 2025
Time	15:00 – 17:00 KST / 16:00 – 18:00 PGT (2 hours)
Format	Online via Zoom
Chair / convener	Dr. Hanki Kim (KIER)
Attendance	9 participants, around 22% women

5.2 Agenda

Three agenda items, separated by a 10-minute break, per the 2nd PSC agenda document:

- Agenda I (15:00–16:00 KST / 16:00–17:00 PGT) –Installation and implementation plan of seawater monitoring instrument: confirmation of monitoring site; preparation of instruments for seawater monitoring (conductivity/salinity, temperature, pH); data acquisition and analysis; river water data collection; management of local partners;
- Agenda II (16:10–17:00 KST / 17:10–18:00 PGT) – Techno-economical assessment of seawater-based energy system in PNG: standard SGE; hybrid (with desalination plant) SGE; e-OTEC; seawater-based energy storage;
- Agenda III – Visiting plan: confirmation of visiting schedule (March–April 2025, 7–10 days); installation of seawater monitoring instrument; plan to install a demonstration plant in PNG (capacity, budget); invitation plan to KIER (Jeju Global Research Center).

5.3 Key discussions

Site selection and monitoring strategy

The PSC reviewed candidate sites for monitoring deployment. Discussions emphasized the need for measurement of conductivity (salinity), temperature, and pH at multiple depths to characterize the salinity gradient and the ocean thermal profile in PNG coastal waters. Initial focus on the Port Moresby coastal region was confirmed, with specific site validation to be conducted during the in-country mission.

Techno-economic assessment

KIER presented preliminary techno-economic comparisons among the technology options:

- Standard SGE (RED): feasibility for direct deployment using seawater + freshwater from PNG rivers;
- Hybrid SGE: coupling with desalination plants for higher energy density and freshwater co-production;
- e-OTEC: leveraging the ocean thermal gradient available in PNG tropical waters;
- Seawater-based energy storage (Blue Battery): application for grid stability and curtailment management.

PNG visit and demonstration plant planning

The PSC discussed the proposed in-country mission timing and scope, including the potential to install a demonstration plant in PNG and the invitation of PNG counterparts to visit KIER's Jeju Global Research Center for technical training (7–14 days, including technical tours of the 5 kW RED plant and other Jeju demonstration sites).

5.4 Decisions

- In-country mission to PNG confirmed for late May 2025 (revised from initial March–April target due to logistics coordination).
- Scope of mission to include: site validation, equipment deployment, capacity-building seminars, KIER–UPNG young professionals workshop on marine energy, and in-person PSC meeting.
- Lab-scale RED equipment to be installed at UPNG to provide an ongoing platform for joint research and training.
- PSC endorsed the techno-economic framework for further development in Output 3.

5.5 Action items

Action	Responsible	Deadline
Finalize the visiting plan for the May 2025 mission	KIER (Dr. Hanki Kim)	By 15 May 2025
Confirm Kalo as primary site for validation; identify backup sites	KIER + NEA + UPNG	Before mission
Coordinate UPNG hosting of the lab-scale RED installation	Prof. Chalapan Kaluwin (UPNG)	Before mission
Coordinate logistics for in-person PSC meeting in Port Moresby	CCDA	Mid-May 2025
Prepare KIER–UPNG young professionals workshop program with gender equity focus	KIER + UPNG	Before mission

6. In-Person PSC Meeting and Country Mission – 25–30 May 2025

6.1 Mission overview

Dates	25 – 30 May 2025 (6 days)
Locations	Port Moresby (main hub); Kalo, Central Province (field site visit); UPNG campus (technical seminars and lab installation)
KIER delegation	Dr. Hanki Kim (lead) and supporting researchers from the KIER Distributed Energy Team
PNG host coordination	CCDA (Mr. Danny Nekitel) – overall coordination; UPNG (Prof. Chalapan Kaluwin) – academic and field logistics; NEA (Mr. Larsen Daboyan) – sectoral coordination
Cumulative attendance	Approximately 60, around 30% women (attendance figures across the in-person PSC meeting, the inception/technical seminars at UPNG, the KIER–UPNG young professionals workshop, and the Kalo site visit briefings)

6.2 Mission program

The 6-day mission combined PSC governance activities, technical seminars, equipment installation, and field site validation. The high-level program:

Day	Activities
Day 1 – 25 May	Arrival of KIER delegation in Port Moresby; courtesy call and orientation with CCDA
Day 2 – 26 May	In-person PSC meeting (morning); technical seminar at UPNG (afternoon)
Day 3 – 27 May	Site visit to Kalo (Central Province) for site validation; collection of seawater and freshwater samples; salinity and temperature measurements
Day 4 – 28 May	Installation and commissioning of lab-scale Reverse Electrodialysis (RED) equipment at UPNG; equipment operation training for UPNG staff and students
Day 5 – 29 May	KIER–UPNG young professionals workshop on marine energy with explicit gender equity focus; bilateral meetings with NEA, ICC, CEPA, PPL
Day 6 – 30 May	Wrap-up debrief with PSC; departure of KIER delegation

6.3 In-person PSC meeting (Day 2)

The in-person PSC meeting reviewed mission progress to date and agreed on the activities for the remainder of the mission. Discussion items:

- Confirmation of Kalo (Central Province) as the primary candidate site, based on available regional data and geographic proximity to Port Moresby;
- Walkthrough of the planned UPNG installation: lab-scale RED stack, monitoring instrumentation, and training program for UPNG staff and students;
- Stakeholder coordination plan: bilateral meetings with each of the regulatory and utility PSC members during Day 5;

- Confirmation of the gender mainstreaming approach for the KIER–UPNG young professionals workshop.

6.4 Site visit to Kalo (Day 3)

The site visit assessed Kalo as a candidate site for marine renewable energy assessment. Field activities included:

- Visual inspection of coastal access, infrastructure connectivity, and proximity to potential off-takers;
- Collection of seawater and freshwater samples for KIER laboratory analysis;
- Initial in-situ measurements of salinity (conductivity) and temperature;
- Discussion with local representatives regarding community impacts, fisheries activity, and environmental considerations.

6.5 Equipment installation at UPNG (Day 4)

KIER installed a lab-scale Reverse Electrodialysis (RED) system at UPNG and trained UPNG staff and students on its operation. The installation provides:

- An ongoing platform for joint research between KIER and UPNG;
- A teaching tool for UPNG students in renewable energy and electrochemistry;
- A baseline for further capacity-building, including the future graduate-student exchange program.

6.6 KIER–UPNG young professionals workshop (Day 5)

The workshop was designed with explicit gender equity considerations and provided opportunities for women students at UPNG to engage with frontier marine energy technologies. The workshop covered the science of SGE, e-OTEC and Blue Battery; potential applications in PNG; and pathways into careers in renewable energy.

6.7 Decisions

- Kalo (Central Province) confirmed as the primary site for the pre-feasibility study and follow-on demonstration. Note: the pre-feasibility study subsequently assessed the Central Province coast more broadly, and the CCDA Technical Review (April 2026) identified the Kemabolo–Hula coastline as the optimal zone; final site selection is carried forward to the feasibility stage;
- UPNG confirmed as the host institution for the lab-scale RED installation and ongoing capacity-building;
- Stakeholder consultation framework agreed for Output 3 (pre-feasibility study);
- Initial discussions on a Korea–PNG cooperation framework, with potential MOUs to be developed.

6.8 Action items

Action	Responsible	Deadline
Process Kalo seawater and freshwater samples; conduct laboratory analysis of salinity, ion composition	KIER	July 2025
Continue operating lab-scale RED at UPNG; report monthly data summaries	UPNG (with KIER remote support)	Continuous
Begin technical pre-feasibility analysis using collected data + ocean-model data	KIER	By 30 Sept 2025
Schedule 3rd PSC meeting (online)	KIER	Q4 2025
Prepare gender-disaggregated mission report and attendance records	KIER + UPNG	Within 4 weeks

7. 3rd PSC Meeting – 19 December 2025

7.1 Meeting overview

Date	19 December 2025
Time	22:00 KST
Format	Online via Zoom
Chair/convenor	Dr. Hanki Kim (KIER)
Attendance	9 participants, around 22% women

7.2 Agenda

- Item 1: UN CTCN TA Project Update – deadline extension; budget status; Korea visit invitation.
- Item 2: Marine Energy Potential Assessment in PNG – sharing of results.
- Item 3: Planning Next Steps for CTCN TA – graduate student program; new project development.

7.3 Key discussions

Project administration and extension

KIER reported on the project administration status:

- Project completion date officially extended to 31 May 2026 – accommodating previous budget administration delays and ensuring sufficient time for the final wrap-up workshop and reporting;
- Previous budget administration issues fully resolved, allowing commencement of high-level activities, including the South Korea invitation program.

Marine Energy Potential Assessment results

KIER presented the results of the Marine Energy Potential Assessment for PNG, conducted using HYCOM ocean-model data (2024–2025) combined with AI-based satellite interpretation. Key findings:

- Salinity Gradient Energy (SGE) potential in PNG: approximately 4 GW theoretical, with approximately 368 MW technically feasible at ~30% membrane efficiency, equivalent to approximately 27 GW of solar power capacity. Note: the 4 GW and 27 GW figures were derived from peak (flood) river flows and are withdrawn in the revised pre-feasibility study; gross potential at mean flow is ≈ 1.2 GW, and ≈ 360 –368 MW is technically feasible;
- Four target rivers contributing a combined flow of approximately 455 m³/s (historical gauge records, CCDA Technical Review, Appendix 11) – among the most favorable conditions in the Pacific SIDS region;
- Sea-surface temperature variation of ~ 26.4 – 31.5 °C between seasons supports e-OTEC application; $\sim 20\%$ efficiency (relative to the Carnot limit; $\approx 1\%$ absolute) vs. $\sim 3\%$ for conventional turbine-based OTEC;
- Vertical stability at 10 m depth confirmed through halocline analysis: surface salinity highly variable in the wet season, but the 10 m depth remains stable (≥ 34.4 PSU); providing the rationale for the recommended ≥ 10 m intake depth specification;
- Findings are being prepared for publication in an SCI-level scientific paper, supporting the credibility of the GCF Concept Note and follow-on financing.

South Korea wrap-up program

The PSC discussed the planning for the South Korea wrap-up program, scheduled for February–March 2026 (subsequently confirmed for 8–13 March 2026). Program objectives:

- Final 'wrap-up meeting' to conclude the TA project and transition to the implementation phase;
- Visits to Jeju Island (KIER demonstration sites), Seoul, and Incheon;
- Final results sharing – presentation of the complete pre-feasibility study findings;
- Joint visit to the relevant GCF department to submit the GCF Concept Note;

7.4 Decisions

- Project end date confirmed as 31 May 2026 (second no-cost extension);
- South Korea wrap-up program endorsed in principle, dates to be finalized;
- PNG delegation of approximately 8 representatives (PSC members) to be selected for the Korea visit.

7.5 Action items

Action	Responsible	Deadline
Send formal invitation letters to the CCDA Managing Director for the South Korea visit	Dr. Hanki Kim (KIER)	Early Jan 2026
Finalize the list of approximately 8 PNG representatives (PSC members) for the trip	Mr. Danny Nekitel (CCDA)	Upon receipt of invitation
Facilitate visa processing with the Korean Embassy in Port Moresby	CCDA / KIER	Feb 2026
Finalize the implementation roadmap and future business development plans	All stakeholders	During Korea visit

8. 4th PSC Meeting (Final, Wrap-up) – 9 March 2026

8.1 Meeting overview

Date	9 March 2026 (afternoon, as part of Day 2 of the Korea wrap-up program)
Time	13:30 – 17:00 KST
Location	Maison Glad Jeju (seminar room), Jeju Special Self-Governing Province, Republic of Korea
Format	In-person; held within the Korea wrap-up program (8–13 March 2026)
PNG delegation (8 PSC representatives)	Mr. Danny Nekitel (CCDA – NDE / delegation lead) Ms. Emily Pomoh (CCDA – technical lead) Mr. Larsen Daboyan (NEA – Proponent) Mr. Francis Sakato (ICCC) Mr. Russell Kilalema (NISIT) Prof. Chalapan Kaluwin (UPNG) Dr. Dapsy Olatona (Unitech) Dr. Shoeb Ahmed Syed (Unitech)
KIER team	Dr. Hanki Kim (project lead) and Distributed Energy Team senior researchers; supported by KIER Global Strategy Team
UN CTCN representatives	Dr. Suil Kang and Mr. Hoyoung Jo
Additional invited	Ecosian representative – for the GCF Concept Note review session
Total attendance (gender-disaggregated)	13 participants, around 15% women

8.2 Korea wrap-up program structure (8–13 March 2026)

Day	Location	Activities
Day 1 – 8 March	POM → SIN → Jeju (Glad Jeju)	Travel of PNG delegation from Port Moresby via Singapore to Jeju Island; arrival 07:20 on TR812; reception and orientation; welcome dinner at Samdajeong (Jeju black pork)
Day 2 – 9 March	Jeju (Glad Jeju)	AM: Jeju Agricultural Research Institute (Gangjeong) and Seogwipo Organic Waste Recycling Facility. Lunch in Jungmun (galchijorim). PM 13:30–17:00: Final (4th) PSC meeting at Maison Glad Jeju seminar room – review of TA deliverables and GCF Concept Note review session with Ecosian. Dinner: Jeju black pork (heukdwaeji-gui)
Day 3 – 10 March	Jeju (Glad Jeju)	AM 09:00: Jeju Provincial Government visit, including a meeting with the Governor (coordinated by Mr. Kim Gwang-ho); Dongmun Market visit. Lunch near Dongmun Market. PM 14:00 KIER Jeju Global Research Center technical tour (5 kW RED pilot plant, 10 kWh Blue Battery pilot, Sector Coupling and Integration Convergence Research Center); 15:00 CFI Promotion Hall; 16:00 Jeju Technopark Lava Seawater Business Division. Dinner: networking reception at Maison Glad with Jeju-based renewable energy companies, research institutes, and university experts
Day 4 – 11 March	Jeju → Seoul (Glad Yeouido)	AM 07:30 checkout and transfer to Jeju Airport; 09:25 Jeju → Seoul on Korean Air KE1158. Lunch in Yeouido. PM 13:00–18:00: CTCN TA cRD&D Marine Energy Specialist Workshop at GLAD Yeouido (Project A Room), with three keynote speeches (Mr. Danny Nekitel, Dr. Hanki Kim, Mr. Hoyoung Jo) and five capacity-building sessions delivered by Korean academic and industry experts. Banquet at GLAD Yeouido
Day 5 – 12 March	Seoul (Glad Yeouido)	AM 09:00 Cultural tour – Gyeongbokgung Palace and Namdaemun. Lunch traditional Korean (royal court cuisine, galbi-jjim). PM 13:00 Cultural tour – Myeongdong and Yongsan. Dinner at GLAD Yeouido
Day 6 – 13 March	Seoul → Incheon → HK → POM	AM 09:00: Planned joint visit to GCF headquarters (cancelled). PM 13:45: Incheon → Hong Kong → Port Moresby – departure

8.3 Key discussions and outcomes

Final review of TA deliverables

The PSC reviewed the status of the TA deliverables:

- Output 1 – work plan, M&E plan and impact statement, Gender Assessment & Action Plan, Closure and Data Collection Report (drafts), this consolidated PSC meeting reports package;
- Output 2 deliverables: site selection report, inception workshop materials, lab-scale RED installation at UPNG;

- Output 3 deliverables: pre-feasibility study (technical, socio-economic and financial analyses) with Multi-Criteria Decision Analysis (MCDA) (draft), stakeholder consultation report;
- Output 4 deliverables: GCF Concept Note with supporting documents, final compiled report, in-person workshop materials.

GCF Concept Note review with Ecosian

A dedicated session within the 4th PSC meeting was held with an Ecosian representative (Concept Note advisory partner) to review the GCF Concept Note prepared under Activity 3.1 of the Response Plan. The review covered:

- Alignment of the Concept Note with GCF strategic plan priorities (T1, T6, T7);
- Quantification of Core Indicators 1–4 (CO₂e avoided, resilience, beneficiaries, funding leveraged);
- Accredited Entity selection considerations (UNDP, ADB, or other Pacific-active AE);
- Pathway to the full Funding Proposal, including PNG NDA Non-Objection Letter (NOL) coordination through CCDA;
- Refinements to the Executing Entity structure (NEA-led EE with CCDA NDE oversight, CEPA safeguards, ICCC regulation, PPL utility partnership).

Long-term cooperation mechanisms

Discussions covered the establishment of longer-term cooperation mechanisms between KIER and PNG counterparts (CCDA, UPNG, Unitech) to formalize cooperation beyond the TA period.

Preparation for the joint GCF visit (Day 6)

The PSC reviewed the preparation for the joint visit to the Green Climate Fund (GCF) headquarters in Songdo (Incheon) scheduled for Day 6 of the wrap-up program, including the GCF Concept Note submission package and the delegation composition for the GCF meeting.

8.4 Decisions

- The PSC endorsed the completion and submission of the TA deliverables to CTCN, subject to NDE validation of the final versions. (The NDE subsequently provided a Technical Review of marine-energy data (April 2026) and comments on the pre-feasibility study and safeguards screening, which are addressed in the revised versions.)
- Long-term cooperation arrangements between KIER and PNG counterparts to be formalized;
- GCF Concept Note to be submitted via joint visit on Day 6; further refinements to be made based on GCF feedback and the Non-Objection Letter (NOL) process. (The Day 6 visit was cancelled; the Concept Note is delivered as a TA deliverable and will be submitted to the GCF once an Accredited Entity is identified.);
- PNG NDA engagement on the Concept Note to be coordinated through CCDA.

8.5 Action items (post-TA)

Action	Responsible	Deadline
Submit all TA deliverables to CTCN for review and acceptance	KIER	By 31 May 2026
Coordinate NDE validation of all deliverables prior to CTCN acceptance	CCDA + KIER	By 31 May 2026
Coordinate Non-Objection Letter (NOL) for the GCF Concept Note	CCDA / PNG NDA	Q2 2026
Continue operation of lab-scale RED at UPNG and report data to KIER	UPNG	Continuous
Address NDE comments on the pre-feasibility study and safeguards screening	KIER	

9. Cross-Meeting Decisions and Action Items Tracker

This section provides a consolidated view of major strategic decisions taken across the five PSC meetings and the status of cross-cutting action items at the close of the technical assistance.

9.1 Strategic decisions across the PSC

Decision area	Decision	Meeting
PSC governance	PSC formally established with PNG-side member organizations and KIER as implementer; quarterly meetings planned	1st PSC
Site selection	Kalo (Central Province) confirmed as the primary site for the pre-feasibility study – subsequently broadened to the Central Province coast; Kemabolo–Hula identified by the CCDA Technical Review (April 2026)	In-person PSC (May 2025)
Capacity-building host	UPNG confirmed as host institution for the lab-scale RED installation and ongoing capacity-building	2nd PSC + In-person PSC
Project extension	Project end date confirmed as 31 May 2026, following two no-cost extensions	3rd PSC
Korea wrap-up program	Program structure and dates confirmed (8–13 March 2026, Jeju–Seoul–Incheon)	3rd PSC + 4th PSC
GCF financing pathway	GCF Concept Note prepared; planned joint submission visit (Day 6) canceled; PNG NDA engagement for NOL	4th PSC
Gender mainstreaming	KIER–UPNG young professionals workshop with explicit gender focus; gender-disaggregated participation tracking across all events	Across all PSC meetings

9.2 Cross-cutting action items – status at TA closure

Action item	Responsible	Status
Pre-feasibility study (final, English)	KIER	Revised in response to NDE comments; for NDE validation
GCF Concept Note (final, English)	KIER	Revised; delivered as a TA deliverable. GCF submission once an Accredited Entity is identified
M&E Plan and Impact Statement (final)	KIER	Revised; for NDE review
Gender Assessment and Action Plan (final)	KIER	Revised; for NDE review
Closure and Data Collection Report (final)	KIER	Revised; for NDE review
Consolidated PSC meeting reports	KIER	Submitted (this package)
Inception workshop report (consolidated)	KIER	To be submitted as a separate package
CCDA Technical Review of marine-energy data	CCDA	Completed (April 2026); findings integrated in the revised pre-feasibility study
NDE comments on the ESRS and pre-feasibility study	KIER	Addressed in the revised pre-feasibility study and Annex G.3
Lab-scale RED operation at UPNG	UPNG (with KIER remote support)	Ongoing post-TA
GCF Non-Objection Letter (NOL)	CCDA / PNG NDA	To be coordinated post-TA

10. Annexes

The following annexes are submitted alongside this consolidated PSC reports package:

Annex A – KIER PSC presentation deck (technologies, institutional context, visiting plan)

Annex B – Visiting Plan: Detailed program of the 25–30 May 2025 country mission to PNG

Annex C – 3rd PSC meeting report (December 2025), including the draft program of the South Korea wrap-up program

Annex D – Korea wrap-up program materials (8–13 March 2026), the CTCN TA cRD&D Marine Energy Specialist Workshop program, presentations, and photos

Annex E – Ecosian GCF Concept Note review session notes (4th PSC, 9 March 2026)