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Technical support & assistance to Euroclima LAC
& the Caribbean Green Deal programs



TERMS OF REFERENCE- Wave Energy Feasibility Assessment for four Caribbean Countries and one Territory

Code:

Title: Wave Energy Feasibility Assessment for four Caribbean Countries and one French Overseas Territory

Work Package: Work Package 1: Technical & Investment

Duty Station: Remote with mandatory field missions to Antigua and Barbuda, Barbados, Grenada, and Saint. Vincent and the Grenadines, and Saint Barthélemy

Reports to: Caribbean Centre for Renewable Energy and Energy Efficiency - CCREEE

The term “Participating Jurisdictions” is used to define four countries and one French Overseas Territory throughout the document.

Note:

The award of the contract for the scope of work relating to Saint Barthélemy shall be subject to:

1. The signing and formalization of the relevant Memorandum of Understanding (MoU) between the administration of Saint Barthélemy and the Caribbean Centre for Renewable Energy and Energy Efficiency
2. Conclusion of the grant agreement between the European Union and the Caribbean Centre for Renewable Energy and Energy Efficiency

Consultants are therefore advised to take this condition into consideration when preparing and submitting their Technical and Financial Proposals. The submission of a proposal shall not constitute a commitment by CCREEE to award the contract until the required MoU and grant agreement have been duly executed.

Context: This TOR is Work Package 1 of a two-package study. WP1 (this document) undertakes the full technical and investment feasibility assessment, including a 12-month in-situ data collection programme, and delivers a definitive go/no-go determination on wave energy viability and investment prospects for each country. The duration of WPI is sixteen (16) months.

WP2 (Policy & Governance, separate TOR) is a conditional follow-on: it will be scoped and funded based on WP1 findings, with EU and regional financing sources being explored in parallel. WP2 builds directly on WP1 deliverables; all relevant data, models, and findings are structured for handover at the close of WP1.

A. Background and Context

The Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE), through the Euroclima programme, is commissioning a comprehensive wave energy feasibility assessment for participating jurisdictions i.e., four Eastern Caribbean countries and a territory: Antigua and Barbuda, Barbados, Grenada, and Saint Vincent and the Grenadines and Saint Barthélemy. This assessment responds to growing regional interest in marine renewable energy as part of broader energy transition strategies aligned with NDC commitments and the pursuit of energy security in Small Island Developing States (SIDS). This assessment is the first of two planned work packages and constitutes the primary technical evidence base for wave energy viability in the region.

Wave energy represents an emerging opportunity for the Caribbean region. Global resource assessments indicate modest wave energy potential (~10 kW/m) compared to higher-latitude locations, though site-specific conditions may support viable deployments (IRENA, 2014; Eelsalu et al., 2025). Recent commercial interest, including MoUs signed by Barbados and Grenada with developers Seabased and Wavepiston, respectively, underscores the need for rigorous, evidence-based feasibility analysis before investment decisions are made.

The Participating Jurisdictions share common challenges: high fossil fuel dependency (93–99% of electricity generation), vulnerability to oil price volatility, small grid systems (21–300 MW peak demand), and exposure to climate impacts including hurricanes. Each country has set ambitious renewable energy targets (60–100% by 2030–2040).

A critical gap in previous assessments has been the absence of in-situ wave measurement data. This TOR therefore includes, as a core activity, the deployment of directional wave buoys and Acoustic Doppler Current Profilers (ADCPs) for a 12-month measurement campaign across priority sites in the participating jurisdictions, alongside bathymetric and geotechnical surveys. This investment in primary data collection is essential to reduce resource uncertainty from hindcast-only analysis and to produce engineering-grade site characterisations that can support investment-grade feasibility conclusions.

B. Objectives

The objective of this consultancy is to conduct a comprehensive technical and investment feasibility assessment of wave energy potential across participating jurisdictions. Specifically, the Consulting Firm will:

- Collect primary in-situ oceanographic data through a 12-month wave buoy and ADCP deployment programme, supplemented by bathymetric and geotechnical surveys at priority sites
- Characterise wave energy resources using a combined desk-based and in-situ validated approach at country and site-specific levels
- Evaluate wave energy converter (WEC) technologies for suitability in Caribbean conditions, including hurricane survivability and local O&M context
- Assess technical feasibility including grid integration requirements, infrastructure needs, and O&M capacity
- Conduct economic and financial analysis to determine LCOE, investment requirements, and competitiveness versus alternatives, in the Caribbean cost context
- Assess financial viability and identify specific investment prospects that can attract DFI and/or private sector financing
- Deliver a clear, evidence-based feasibility determination per country, distinguishing between technical feasibility, economic competitiveness, and bankability, and outlining investment prospects, that informs the scoping and funding of the companion Policy & Governance work package (WP2)

C. Scope of Work

The Consulting Firm will deploy a multidisciplinary technical team across the following tasks. Expert day estimates are indicative; bidders may propose alternative allocations with justification in their technical proposals.

Section / Activity	Indicative Days	Indicative Key Profiles
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1. Inception and Methodology Refinement	25 days	All specialists
2. In-situ Data Collection Programme	115 days + equipment	Survey teams, Oceanographers
3. Wave Energy Resource Assessment (desk-based + validated)	100 days	Wave Specialist, Oceanographer, GIS
4. Technology Assessment and Suitability Analysis	65 days	Wave Specialist, Marine Engineer
5. Site Identification and Preliminary Engineering Design	115 days	Marine Engineer, Wave Specialist, GIS
6. Grid Integration and Power Systems Analysis	70 days	Power Systems Engineer, Electrical Eng.
7. Economic and Financial Analysis	90 days	Financial Analyst, Energy Economist
8. Investment Prospects Assessment	44 days	Financial Analyst, Project Finance Spec.
9. Risk Assessment (Technical, Resource, Financial)	40 days	Risk Analyst, all leads
10. Feasibility Determination and Go/No-Go Report	25 days	Team Leader + all leads
TOTAL	689-expert days (excl. equipment costs)	

Note: Equipment mobilization, deployment and operation costs for in-situ data collection (wave buoys, ADCPs, vessels, surveys) are budget items in addition to expert days and must be costed separately in financial proposal.

1. Inception and Methodology Refinement

- Review all background materials including pre-assessment deliverables (country context briefs, stakeholder consultation summaries) and CCREEE-provided offshore wind oceanographic datasets
- Conduct inception meetings with CCREEE, Euroclima, and participating jurisdiction's focal points (5 countries)
- Finalise assessment methodology, including IEC TS 62600-101/100 (wave resource assessment), IRENA economic analysis standards, in-situ data collection protocols, and bathymetric/geotechnical survey methodology
- Develop a detailed work plan covering both desk-based and in-situ activities, with country-specific approaches



- Develop an Equipment Mobilisation, Maintenance, Deployment and Retrieval Plan (EMMDRP): equipment specifications, site selection for monitoring stations, logistics, import/customs requirements, vessel arrangements, maintenance schedule, data transmission setup
- Develop a Marine Health, Safety and Environmental (HSE) Plan: emergency response procedures, hurricane preparedness, incident reporting procedures, vessel and diving safety requirements, applicable certifications and permits, and environmental protection measures.
- Define a stakeholder engagement strategy for technical consultations (utilities, grid operators, port authorities, maritime agencies, technology vendors)
- Establish a quality assurance framework including internal peer review mechanisms

2. In-Situ Data Collection Programme

This section constitutes a core activity addition compared to desk-study-only feasibility approaches. In-situ data collection is essential to produce investment-grade resource characterisation, reduce the principal source of uncertainty in LCOE calculations, and validate the engineering designs produced in Section 5. The 12-month deployment duration reflects the minimum period required to capture seasonal variability in wave climate and is non-negotiable for an investment-grade study.

2.1 Equipment Mobilisation, Maintenance, Deployment and Retrieval Plan - EMMDRP

- Arrange, calibrate, and test all in-situ monitoring equipment prior to deployment, including:
 - Directional wave rider buoys (or equivalent directional wave measurement systems): minimum 2 per participating jurisdiction (10 units total), specification compliant with IEC TS 62600-101 requirements
 - Acoustic Doppler Current Profilers (ADCPs): minimum 1 per participating jurisdiction (5 units total), seabed-mounted or moored, for current profiling at priority sites
 - Supporting equipment: mooring hardware, anchoring systems, biofouling protection systems, telemetry/data transmission systems (satellite or cellular), data logging units
- Develop and submit detailed Equipment Deployment Plan to CCREEE for approval prior to mobilisation
- Obtain all necessary marine deployment permits and consents from relevant maritime authorities in each country
- Coordinate vessel charter arrangements for deployment and retrieval operations

2.2 Wave Buoy and ADCP Deployment

- Deploy directional wave buoys at selected monitoring stations in each participating jurisdiction (2 stations per participating jurisdiction minimum, selected to cover the range of prospective development zones identified through preliminary desk analysis)
- Deploy seabed-mounted ADCPs at priority sites to characterise near-seabed current conditions relevant to mooring design
- Conduct deployment verification dives or ROV surveys to confirm equipment installation integrity
- Establish real-time data transmission and remote monitoring systems
- Train CCREEE-designated country focal points in remote monitoring procedures

2.3 12-Month Data Collection and Monitoring

- Operate wave buoy and ADCP network continuously for 12 months, capturing full seasonal wave climate variability
- Conduct regular (minimum quarterly) equipment maintenance visits: biofouling inspection and cleaning, battery replacement, data recovery, sensor calibration checks
- Transmit and archive data in real time; flag and investigate data gaps or anomalies within 48 hours
- Produce monthly monitoring reports to CCREEE (instrument status, data completeness, preliminary observations)
- Validate emerging in-situ data against ERA5 and WAVEWATCH III hindcast datasets in real time to enable early identification of significant bias

2.4 Equipment Retrieval and Data Processing

- Retrieve all wave buoys and ADCPs following the 12-month collection period
- Conduct post-retrieval equipment inspection and recalibration assessment
- Process, quality-control, and archive the complete in-situ dataset: gap-filling procedures, spike removal, coordinate system transformation for ADCPs, directional spectra computation for wave buoys
- Validate against concurrent satellite altimetry data (e.g., Sentinel-6, CFOSAT) where available
- Produce final in-situ dataset package for all stations with full metadata (D-Data deliverable)

2.5 Bathymetric Surveys

- Conduct multibeam echo sounder (MBES) bathymetric surveys at 2–3 priority development sites per participating jurisdiction (10–15 sites total) to produce high-resolution seabed topography maps at ≤2 m resolution within the prospective array footprints
- Conduct single-beam surveys along prospective subsea cable routes from array to landfall
- Produce bathymetric charts and digital terrain models (DTM) for each surveyed site in GIS-compatible format
- Identify seabed features relevant to mooring and foundation design (rocky outcrops, scour features, sand waves)

2.6 Geotechnical Surveys at Priority Sites

- Conduct sub-bottom profiling (parametric echosounder or boomer) at priority array sites to characterise subsurface stratigraphy
- Conduct seabed sampling at priority sites: grab samples (minimum 3 per site) for sediment characterisation (grain size analysis, carbonate content, shear strength)
- Assess geotechnical suitability for proposed mooring and foundation systems (gravity anchors, driven piles, drag embedment anchors)
- Identify requirements for more detailed geotechnical investigation (cone penetration tests vibrocores) in any subsequent project development phase
- Produce geotechnical interpretation report per priority site, with implications for foundation design

3. Wave Energy Resource Assessment

This section proceeds in two phases. Phase A uses existing datasets to produce preliminary marine wave resource characterisation, support technology assessment, and identify 10–20 candidate sites (2–4 per participating jurisdiction). Following technical assessment and stakeholder validation, 5–10 priority sites (1–2



per participating jurisdiction) to be selected for Phase B. Phase B incorporates validated in-situ data from the selected sites to update the resource analysis and produce an investment-grade wave resource characterisation.

3.1 Data Compilation and Validation (Phase A — existing datasets)

- Compile and assess oceanographic datasets: ERA5 reanalysis, WAVEWATCH III hindcast, Copernicus Marine Service
- Assess CCREEE-provided offshore wind oceanographic datasets for applicability to wave energy resource characterisation
- Assess data quality, temporal resolution, coverage, and gaps per country
- Produce preliminary bias-corrected hindcast dataset adjusted using available satellite altimetry

3.2 Regional Wave Climate Analysis

- Analyse wave climate parameters: significant wave height (H_s), peak period (T_p), wave direction, seasonal/inter-annual variability using combined hindcast and (progressively) in-situ datasets
- Calculate wave power flux (kW/m) using standard formulas (IEC TS 62600-101)
- Assess climate change implications on future resource availability under SSP scenarios using high level scenario review/literature-based assessment
- Generate wave energy roses and occurrence matrices

3.3 Country-Level Resource Mapping

- Produce GIS-based resource maps at 1–5 km resolution for each participating jurisdiction 's exclusive economic zone (EEZ)
- Identify high-resource coastal areas and potential deployment zones
- Apply technical constraints (bathymetry, seabed conditions, distance from shore)
- Apply exclusion zones (marine protected areas, shipping lanes, fishing grounds, tourism areas, military zones)

3.4 Technical Potential Estimation

- Estimate technically feasible deployment capacity (MW) per participating jurisdiction and site
- Estimate theoretical potential (MW, GWh/year) per participating jurisdiction
- Develop low/medium/high resource scenarios

3.5 In-Situ Validated Site-Specific Resource Analysis (Phase B)

- Update all resource characterisation using the validated 12-month in-situ dataset
- Conduct detailed validated analysis for 2–4 priority sites per participating jurisdiction (10–20 sites total)
- Apply higher-resolution wave propagation modelling (SWAN or equivalent) informed by in-situ calibration
- Account for nearshore processes (refraction, shoaling, wave breaking) using bathymetric survey outputs
- Estimate annual energy production potential per priority site with quantified uncertainty bounds (disaggregated by uncertainty source: resource, model bias, WEC performance)
- Produce final investment-grade resource characterisation for each priority site



4. Technology Assessment and Suitability Analysis

4.1 Technology Landscape Review

- Survey current WEC technologies: attenuators, point absorbers, oscillating wave surge converters, oscillating water columns, overtopping devices
- Review Technology Readiness Levels (TRL 1–9) and commercial deployment status globally
- Identify active developers/manufacturers with operational track records; assess developer financial standing and market stability
- Analyse performance data from existing deployments (EMEC, WaveHub, deployed systems globally)

4.2 Caribbean Suitability Screening

- Define suitability criteria: wave conditions match (using in-situ validated resource from Section 3), deployment depth, grid connection requirements, O&M accessibility, hurricane survivability (Category 4–5), environmental footprint, cost, modularity/scalability
- Score technologies using Multi-Criteria Decision Analysis (MCDA) with weighted criteria
- Subject to the declaration of “no conflict of interest”, engage 2-3 technology vendors for technical specifications, indicative pricing, and assessment of regional service and supply chain capacity

4.3 Hurricane Survivability Analysis

- Assess design standards for extreme conditions (50-year, 100-year storm scenarios using hindcast extremes for each participating jurisdiction)
- Evaluate survival modes (submerge, disconnect, ride-through) for shortlisted technologies
- Analyse insurance implications and assess availability of coverage in Caribbean marine insurance market

4.4 Technology Down-Selection

- Subject to the declaration of “no conflict of interest”, recommend 2–4 technology categories for detailed feasibility analysis, with technical justification
- Identify reference projects and performance benchmarks for selected categories

5. Site Identification and Preliminary Engineering Design

5.1 Multi-Criteria Site Selection

- Define comprehensive site selection criteria across technical, environmental, social, regulatory, and economic dimensions (including but not necessarily limited to the categories below)
 - Technical: Wave resource quality (kW/m from validated in-situ dataset), water depth (from bathymetric surveys), seabed geology (from geotechnical surveys), distance to shore, grid proximity
 - Environmental: MPAs, coral reefs, seagrass beds, sea turtle nesting, marine mammal presence, seabird colonies
 - Social: Artisanal fishing grounds, tourism/dive sites, navigation routes, cultural/heritage sites, visual impact sensitivity
 - Regulatory: Permitting complexity, marine spatial planning zones, existing marine uses



- Economic: Grid connection cost, port access, construction logistics, O&M base proximity
- Apply MCDA with stakeholder-validated criteria weights
- Produce a ranked list of all sites assessed, with scores documented by criterion, to support identification of next-best alternatives if primary sites encounter blockers
- Conduct participatory site selection workshops (1 per participating jurisdiction)
- Perform site visits to priority locations (minimum 2 sites per participating jurisdiction during field missions)

5.2 Preliminary Engineering Design

Preliminary designs are produced in two stages: a first-pass design using desk-based data (Phase A 10–20 candidate sites (2–4 per participating jurisdiction) and a refined investment-grade design updated with in-situ validated resource and geotechnical data (Phase B 5–10 priority sites (1–2 per participating jurisdiction))

- Develop conceptual designs for each priority site:
 - Array layout and WEC spacing optimised for in-situ validated resource and surveyed seabed
 - Number of units and total installed capacity (MW)
 - Mooring and foundation system specifications informed by geotechnical survey findings
 - Subsea cable routing (optimised using bathymetric survey outputs)
 - Grid connection point and onshore facilities (substation, control room, O&M base)
 - Survivability measures for hurricane conditions (Category 4–5)
- Apply IEC TS 62600-2 design requirements
- Identify requirements for any further geotechnical investigation (e.g., CPTs, vibrocores) not captured in Section 2.6

5.3 Energy Yield Modelling

- Model Annual Energy Production (AEP) using WEC power matrices for selected technologies and in-situ validated site-specific wave climate
- Calculate capacity factors
- Develop monthly/seasonal generation profiles
- Assess grid integration implications of variable generation
- Conduct disaggregated uncertainty analysis by source (resource, WEC performance, energy losses, grid curtailment) with aggregate $\pm 20\%$ confidence bounds

6. Grid Integration and Power Systems Analysis

Currency note: All project-level costs and financial metrics are expressed in USD. For local economic impact metrics, figures are also presented in Eastern Caribbean Dollars (ECD/XCD) at the fixed rate of 2.70 XCD:1 USD. For Barbados economic impact metric, figures are also presented in Barbadian Dollars at the fixed rate of 2.03 BBD:1 USD. For St. Barthélemy figures should be presented in Euro at the fixed rate of 0.88: 1 USD.

6.1 Grid Characterisation (per participating jurisdiction)

- Review existing grid infrastructure: generation capacity (MW), generation mix (%), peak demand (MW), minimum load (MW)



- Obtain grid codes, interconnection standards, and technical requirements from relevant authorities (utilities, energy regulators, or responsible government agencies, as applicable by participating jurisdiction). Where formal grid codes do not exist, apply internationally recognised best-practice codes for analogous small island grid systems.
- Identify potential connection points near priority sites with available capacity
- Assess current grid stability, frequency control, and reserve requirements

6.2 Integration Impact Analysis

- Document the development of all key model inputs, including load profile construction, generation dispatch assumptions, and wave energy generation time series, with sufficient methodological detail for CCREEE to replicate or update scenarios independently
- Model wave energy integration scenarios: 5%, 10%, 20% of annual demand
- Use power system simulation tools (PSS/E, DigSILENT, or Homer/REopt for smaller grids)
- Assess impacts on grid frequency and voltage stability, reserve requirements, synchronous inertia, and protection and control systems
- Analyse complementarity with existing solar/wind generation and evaluate baseload-like generation benefits

6.3 Technical Interconnection Requirements and Cost Estimation

- Specify interconnection equipment: subsea cables, landing infrastructure, transformers, switchgear, protection systems
- Define power quality requirements: voltage regulation, harmonics, flicker
- All cost estimates should clearly document the provisional technical specifications and assumptions to allow future cost updates as designs are refined
- Estimate subsea cable, landing infrastructure, and grid reinforcement costs; calculate total grid integration costs (\$/kW)

7. Economic and Financial Analysis

7.1 CAPEX and OPEX Estimation

- WEC device procurement: \$/kW based on vendor quotes or literature
- Mooring and Foundation: design-specific costs informed by geotechnical survey findings
- Subsea Electrical Infrastructure, Onshore Infrastructure, EPC, Development Costs
- Contingency: 15–20% for early-stage projects
- Caribbean Cost Adjustments: shipping, logistics, import duties, local content
- OPEX: Annual O&M (\$/kW/year), insurance (reflecting Caribbean marine insurance market conditions and CCRIF data), leases, administration, major overhauls, decommissioning reserves

7.2 Levelized Cost of Energy - LCOE Calculation

- Apply IRENA or NREL LCOE methodology
- Financial parameters: WACC, project lifetime, capacity degradation
- Calculate LCOE (\$/MWh) for each scenario (country, site, technology, capacity) using in-situ validated resource data where available
- Conduct sensitivity analysis: CAPEX $\pm 30\%$, capacity factor $\pm 20\%$, discount rate $\pm 2\%$



- Generate tornado diagrams showing key value drivers

7.3 Comparative Economic Analysis

- Benchmark wave energy LCOE against fossil fuel generation mix (diesel/LFO, HFO, natural gas scenarios); existing renewables (solar PV, wind); future options (LNG, solar PV + storage, offshore wind, green hydrogen)
- Evaluate the system LCOE with wave energy and without
- Calculate avoided fuel costs; estimate GHG emissions avoided (tCO₂e/year)
- Assess competitiveness under different fuel price scenarios
- Consider externalities: energy security value, fuel price volatility reduction, import substitution

7.4 Financial Modelling

- Develop pro forma financial models in Excel for reference projects (e.g., 5 MW wave farm per participating jurisdiction)
- Project annual cash flows over 20–25-year lifetime; calculate NPV, IRR, payback period, and DSCR
- Test financial viability under revenue models: FiT, PPA, merchant pricing, and hybrid structures

7.5 Local Economic Impact Assessment

- Estimate direct jobs (construction and O&M), disaggregated between locally sourced and internationally sourced positions, informed by regional skills and capacity assessment. Results in USD, Euro, BBD and ECD.
- Estimate indirect jobs (supply chain, services) and local content potential (% of CAPEX and OPEX)
- Energy security benefits: reduced fuel imports (USD value), reduced exposure to oil price shocks
- Macroeconomic impacts: current account balance, fiscal impacts (presented in ECD, Euro and BBD)

8. Investment Prospects Assessment

This section is a key WP1 deliverable. It translates the technical and financial findings into an investment-oriented narrative that CCREEE and participating jurisdiction partners can use to engage DFIs, climate funds, and private investors. It also provides the basis for scoping WP2.

8.1 Bankability Assessment per Country

- For each participating jurisdiction where technical feasibility is confirmed, assess: LCOE competitiveness versus current tariff and fossil fuel baseline; financial viability under realistic financing structures; offtaker creditworthiness and ability to support a bankable PPA; and regulatory readiness (based on desk-level review of enabling environment, detailed regulatory analysis follows in WP2)
- Classify each country on a bankability spectrum: Investment-Ready, Conditionally Bankable (with defined conditions), or Requires Enabling Work (which informs WP2 prioritisation)

8.2 Financing Sources and Structures

- Identify potential financing sources: DFIs (IDB, World Bank, EIB, AFD, KfW, JICA), Climate Finance (GCF, GEF, Adaptation Fund, NAMA Facility), Regional Finance (Caribbean Development Bank), Bilateral Climate Finance, Private Sector (project finance, private equity, infrastructure funds), Carbon Finance



- Analyse typical financing structures for early-stage marine energy: grant (30–50%) + concessional loan (30–40%) + commercial debt/equity (20–30%)
- Assess risk allocation and mitigation instruments: political risk insurance, performance guarantees, currency hedges, assessed for availability in Eastern Caribbean markets
- Identify barriers to bankability and specific mitigation measures per participating jurisdiction

8.3 Investment Package Concept Notes

- For participating jurisdictions assessed as Investment-Ready or Conditionally Bankable, develop concept note outlines (2–3 pages per participating jurisdiction) covering: project description, indicative scale and cost, financing structure, key conditions, proposed developer engagement process, and next-step milestones
- These concept notes are intended as engagement documents for DFI and investor conversations, not financing applications

8.4 Trigger Criteria for WP2

- Define the specific country-level findings from WP1 that will trigger commissioning of WP2 components. For each country, specify minimum resource threshold (kW/m), maximum LCOE for viability (\$/MWh), minimum bankability classification, and minimum stakeholder support level
- These trigger criteria provide CCREEE and EUD with a transparent, objective basis for scoping and funding decisions on WP2

9. Risk Assessment and Mitigation (Technical and Financial)

This section covers technical, resource, and financial risks within WP1 scope. Regulatory, environmental/social, institutional, and political risks are addressed comprehensively in WP2. A high-level risk summary covering all categories is included in D10 (Feasibility Determination) to inform the WP2 scoping decision.

9.1 Risk Identification

The following are illustrative; the consultant shall draw on sector expertise to identify all material risks in each participating jurisdiction context:

Technical Risks:

- WEC technology performance below guarantees
- Reliability issues leading to high downtime (>10% unavailability)
- Hurricane damage (survival mode failure)
- Subsea cable and electrical infrastructure failure: corrosion, fatigue, anchor drag, fishing gear interaction, installation defects, independent of hurricane events
- Biofouling reducing performance and increasing O&M costs
- Grid connection delays or technical integration challenges
- Insufficient O&M capacity in-region (specialised vessels, technicians, spare parts)

Resource Risks:

- Wave resource lower than modelled despite in-situ validation
- Long-term wave climate change (changing storm tracks, sea level rise effects on shallow sites)
- Seasonal variability more extreme than captured in 12-month deployment

Financial Risks:



- CAPEX cost overruns (30–50% typical for first-of-kind projects)
- OPEX higher than estimated (particularly O&M in remote island context)
- Financing unavailability (limited DFI appetite, private sector risk aversion to pre-commercial technology)
- Revenue risk: utility unable to honour PPA; tariff insufficient to cover costs
- Currency and inflation risk (project costs in USD/EUR, revenues in ECD and BBD)
- Technology developer insolvency or market withdrawal prior to project implementation
- Caribbean marine insurance premiums or exclusions materially increasing OPEX

9.2 Risk Analysis and Mitigation

- Score each risk: Probability (1 Rare to 5 Almost Certain) × Impact (1 Negligible to 5 Catastrophic). Develop risk matrix; prioritise High (15–25) and Medium (8–14) risks.
- For each High and Medium risk, define: avoidance strategy, reduction measures, risk transfer mechanisms (assessed for Caribbean market accessibility), contingency planning; assign responsibility, timeline, and cost
- Risk transfer instruments: assessed specifically for availability and suitability in Eastern Caribbean context, noting escalating insurance premiums, limited WEC performance guarantee products, and currency hedging constraints. Identify SIDS-specific alternatives (CCRIF parametric insurance, DFI first-loss instruments) where standard instruments are inaccessible.
- Produce residual risk assessment and overall project risk profile per country
- Define Key Risk Indicators (KRIs) for project implementation monitoring

10. Feasibility Determination and Go/No-Go Assessment

10.1 Feasibility Determination per Country

Synthesise all WP1 findings into a clear, evidence-based feasibility determination for each participating jurisdiction:

- Recommended: Wave energy is technically feasible, economically viable under realistic assumptions, and investment prospects exist. Proceed to WP2 and project preparation.
- Conditionally Recommended: Viable if specific, defined conditions are met (e.g., minimum resource threshold confirmed by extended measurement, technology cost reduction, concessional financing secured). WP2 is recommended for this country, with scope targeted at the defined conditions.
- Not Recommended: Barriers are structural and not resolvable under realistic assumptions. Wave energy is not a viable priority for this country. Recommend focusing on alternative technologies (identified in Section 10.2). WP2 not recommended for this country.
- Further Study Required: Insufficient information to make determination; specific additional studies defined.

10.2 Alternative Technology Pathways (for Not Recommended countries)

- For countries where wave energy is not recommended, identify and qualitatively assess the top one to two alternative marine or renewable energy technology pathways: OTEC, offshore wind, geothermal, floating solar, solar+storage. High-level assessment covers: resource suitability, TRL, indicative cost



competitiveness, and infrastructure compatibility. A full feasibility study is outside WP1 scope; this analysis guides CCREEE and country partners on priority next steps.

T10.3 WP2 Scoping Recommendations

- For each country where WP2 is recommended, specify: the minimum scope of Policy & Governance work needed to support a viable investment package; priority regulatory interventions; suggested financing mechanisms to be explored; and the scale of P&G intervention appropriate to the investment prospect identified
- These recommendations directly inform the scoping and budget estimation for WP2, and the evidence package for securing EU and regional funding for WP2

D. Deliverables

The Consulting Firm will deliver the following outputs over the 16-months assignment. All reports in MS Word (.docx) and PDF. Data deliverables per specifications below.

D1. Inception Report and Equipment Deployment Plan (20–30 pages + EMMDRP annex)

- Detailed understanding of assignment scope, refined methodology, country-specific work plans
- Equipment Mobilisation, Maintenance, Deployment and Retrieval Plan (EMMDRP): Equipment specifications, station selection and rationale, logistics, permitting approach, maintenance schedule, data transmission setup, contingency arrangements
- Stakeholder engagement strategy for technical consultations
- Gantt chart covering full 16-months timeline including in-situ data collection milestones

D-Data. In-Situ Data Package

This is a primary dataset deliverable and a core output of WP1. It forms the empirical foundation for the investment-grade resource characterisation and will be transferred to CCREEE for long-term archiving.

- 12-month quality-controlled directional wave time series for all monitoring stations (wave height, period, direction, spectral parameters)
- 12-month ADCP current profiles for all instrument stations (current speed and direction at multiple depth bins)
- Bathymetric survey datasets: gridded DTMs and georeferenced charts for all surveyed sites and cable routes (GIS-compatible format)
- Geotechnical survey data: sub-bottom profiles, sample laboratory analysis results, and geotechnical interpretation reports per priority site
- Full metadata documentation: instrument specifications, deployment geometry, calibration records, data processing methods, gap summary
- 12 monthly monitoring reports produced during deployment

D2. Wave Energy Resource Assessment Report — Validated (50–70 pages + GIS Database)

- In-situ validated wave climate analysis per participating jurisdiction



- GIS-based resource maps at 1–5 km resolution integrating in-situ data and modelling
- Investment-grade site-specific resource characterisation for 10–20 priority sites
- Technical potential estimates with quantified, disaggregated uncertainty
- Climate change resource projections
- GIS database with all resource and survey layers per D13 specifications

D3. Technology Assessment Report (25–35 pages)

- Global WEC technology landscape review with developer financial health assessment
- Caribbean suitability screening using MCDA
- Down-selection of 2–4 technology categories; hurricane survivability analysis (Cat 4–5)
- Technology provider engagement summary; performance benchmarks

D4. Site Assessment and Preliminary Engineering Design Report (150–250 pages: 30–50 per participating jurisdiction)

- Multi-criteria site selection methodology and full ranked site list
- Detailed site characterisation sheets (2–3 pages per site)
- Investment-grade preliminary engineering designs updated with in-situ validated resource and geotechnical data
- Energy yield modelling with disaggregated uncertainty analysis; monthly/seasonal generation profiles

D5. Grid Integration Feasibility Report (25–35 pages)

- Grid characterisation per country; integration impact analysis at 5%, 10%, 20% penetration
- Power systems modelling results; model input documentation package for CCREEE knowledge transfer
- Interconnection requirements, specifications, and cost estimates

D6. Economic and Financial Feasibility Report (35–50 pages) + Excel Financial Model

- CAPEX/OPEX estimates with Caribbean adjustments and transparent assumptions
- LCOE calculations with sensitivity analysis using in-situ validated resource data
- Comparative economic analysis against fossil fuel mix (diesel/LFO, HFO, natural gas) and renewables
- Pro forma financial models (NPV, IRR, DSCR) under FiT, PPA, and merchant revenue models
- Local economic impact assessment (jobs in USD, BBD and ECD, fiscal impacts in BBD and ECD)
- Excel financial model: user guide, transparent formulas, built-in sensitivity analysis

D7. Investment Prospects and Bankability Assessment Report (20–30 pages)

- Bankability assessment per country with classification (Investment-Ready / Conditionally Bankable / Requires Enabling Work)
- Financing sources and structures assessment including Caribbean market-specific risk transfer analysis
- Concept note outlines (2–3 pages) for Investment-Ready and Conditionally Bankable countries



- Trigger criteria matrix for WP2 commissioning decisions

D8. Technical Risk Assessment Report (15–25 pages)

- Comprehensive technical, resource, and financial risk register with probability × impact scoring
- Mitigation strategies with responsibility assignments, timelines, and cost estimates
- Residual risk assessment and KRI framework
- High-level risk summary covering all categories (including preliminary regulatory/institutional flags) to inform WP2 scoping

D9. Feasibility Determination and WP2 Scoping Report (25–35 pages)

- Definitive go/no-go feasibility determination per country with evidence-based justification
- Alternative technology pathway assessment for Not Recommended countries
- WP2 scoping recommendations per country: priority scope, financing sources to pursue, scale of P&G intervention
- Evidence package for EUD and regional financing bodies supporting WP2 funding decisions

D10. Country Technical Summary Briefs (25–40 pages: 5–8 pages each)

- One brief per participating jurisdiction: resource potential, feasibility determination, investment prospects, WP2 trigger status
- Format suitable for ministerial briefings and DFI investor meetings

D11. Technical Stakeholder Engagement Report (10–15 pages)

- Documentation of utility, grid operator, technology vendor, and government technical consultations
- Summary of how stakeholder feedback was integrated into technical findings

D12. Executive Presentation Deck (25–35 slides)

- PowerPoint for ministerial briefings, CCREEE Board, DFI/investor engagement, and EUD review

D13. GIS Database

- Delivered in shapefile (.shp) and geodatabase (.gdb) formats at EPSG:4326 projection, with consistent naming convention agreed at inception
- A layer inventory and metadata template submitted at mid-term for CCREEE review; handover guidance at project close
- Layers include (not limited to): wave resource maps, bathymetric DTMs, geotechnical site layers, priority site layouts, constraint layers (MPAs, fishing grounds, shipping lanes), power infrastructure, environmental sensitivity layers; plus, all georeferenced inputs used in any GIS-based analysis

D14. Financial Model

- Excel workbook with country/scenario tabs; user guide; yellow inputs, blue outputs; transparent formulas; built-in sensitivity analysis, LCOE, NPV/IRR modules

Monthly and Progress Reporting

- D-M: Monthly Progress Reports (16 reports, 5 pages each), activities, deliverable status, in-situ data collection status, budget burn rate. Submitted by 5th of each month.
- D-MT: Mid-Term Progress Report (Month 08, 15–20 pages), preliminary resource findings from desk-based analysis, equipment deployment status, technology assessment progress, course corrections

E. Duration and Timeline

Study Execution Duration: 16 months from contract award. The extended timeline reflects the 12-month in-situ data collection programme. Desk-based activities proceed in parallel during the data collection period to maximise efficiency.

Phase	Months	Key Activities	Deliverables	Payment
Phase 1: Inception	Within 1 month from signing of contract	Methodology refinement, EMMDRP development, equipment specification, deployment planning, stakeholder engagement strategy	D1: Inception Report + EMMDRP	10%
Phase 2: Equipment Mobilization & Deployment	TBD	Equipment mobilization, calibration, shipping, import/customs clearance, deployment in all 5 countries	D1 (EMMDRP approved)	20%
Phase 3: Data Collection + Desk Analysis	TBD	12-month in-situ data collection running; concurrent desk-based analysis: technology assessment, preliminary site selection, preliminary grid analysis, preliminary economics (existing data)	D3: Technology Assessment; Preliminary D4/D5 drafts	15%
Phase 4: Data Retrieval & Validated Resource Assessment	TBD	Equipment retrieval and refurbishment; data processing, QC and archiving; in-situ validated resource assessment and updated site characterisation	D-Data: In-Situ Data Package; D2: Validated Resource Assessment	10%



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Phase 5: Investment-Grade Engineering & Economics	TBD	Updated engineering designs (using validated resource + geotechnical data), finalised grid analysis, investment-grade economic analysis, investment prospects assessment	D4, D5, D6, D7: Engineering, Grid, Economics, Investment	20%
Phase 6: Risk, Feasibility & Reporting	TBD	Risk assessment, feasibility determination, WP2 scoping recommendations, synthesis reporting, country briefs, presentation materials, GIS database finalisation	D8, D9, D10, D11, D12, D13, D14	15%
Final Presentation	TBD	Presentation to CCREEE Board, EUD, country ministers/officials, DFI representatives; handover of all data products and knowledge transfer session	Final presentation; knowledge transfer session	10%

Total Indicative Expert Days: 689 (excl. equipment and survey costs) | Total Payments: 100% deliverable-based

F. Consultancy Qualifications

CCREEE seeks proposals from established consulting firms with the following qualifications.

Firm-Level Qualifications (Mandatory)

- Minimum 10 years of firm experience in ocean/marine energy sector (wave, tidal, offshore wind, OTEC)
- Demonstrated experience in successfully conducting wave energy feasibility studies for government clients, utilities, or development banks
- Feasibility study completed in a SIDS context (Caribbean, Pacific, Indian Ocean, or West Africa) is desirable.
- Demonstrated in-situ marine data collection capability: experience deploying, operating, and retrieving directional wave buoys and ADCPs in open ocean conditions, including in tropical/hurricane-exposed environments
- Demonstrated bathymetric and geotechnical survey capability (in-house or through established sub-contractor)
- Multidisciplinary in-house or sub-consultant arrangements covering wave energy engineering, marine/coastal engineering, power systems engineering, oceanographic survey operations, and financial/economic analysis
- Average Annual turnover-AAT for last three years: USD 2 million; Professional indemnity insurance: Minimum EUR 2 million
- Three references from previous clients for whom assignments of a similar nature and scope have been successfully completed. (client details, project description, contract value)

Team Leader (Mandatory)



- Advanced degree (MSc or PhD) in Ocean Engineering, Marine Engineering, Renewable Energy Engineering, or Oceanography
- Minimum 15 years in marine renewable energy; at least 10 years specifically on wave energy projects including in-situ measurement campaigns
- Team leadership experience on complex multidisciplinary assignments; experience in SIDS or tropical/subtropical environments
- Expert knowledge of IEC TS 62600-101 resource assessment, wave buoy data processing, ERA5/WAVEWATCH III analysis, LCOE methodologies, IFC Performance Standards

Core Team (Mandatory)

- Wave Energy / Oceanographic Specialist: MSc or higher; minimum 8 years in wave resource assessment including in-situ campaigns; proficiency in ERA5, WAVEWATCH III, SWAN; wave buoy and ADCP data processing expertise; GIS proficiency (ArcGIS or QGIS)
- Marine Survey Coordinator: BSc/MSc in Oceanography, Hydrographic Surveying, or Marine Science; minimum 5 years managing in-situ marine monitoring programmes; experience deploying wave buoys and ADCPs in tropical environments; FIG/IHO Category A surveyor or equivalent desirable
- Marine/Coastal Engineer: BEng/MEng or higher; minimum 10 years in offshore structures, mooring systems, marine construction; experience in tropical environments and hurricane engineering; familiarity with IEC/ISO standards and geotechnical assessment for offshore structures
- Power Systems Engineer: BEng/MEng in Electrical/Power Systems Engineering; minimum 10 years; experience with small island grid systems; power system modelling tools (PSS/E, DigSILENT, Homer)
- Financial/Economic Analyst: Master's degree in finance or economics; minimum 10 years in project finance or economic analysis; renewable energy financial modelling (LCOE, NPV/IRR, project finance structures); knowledge of DFI and climate finance mechanisms; Excel financial modelling proficiency
- GIS Analyst: BSc/MSc in GIS, Oceanography, or Marine Science; minimum 5 years; proficiency in ArcGIS or QGIS; experience managing oceanographic and bathymetric datasets
- Risk Analyst: minimum 8 years in risk assessment for energy or infrastructure projects; experience with probability-impact analysis, risk matrices, and risk monitoring frameworks; ability to integrate technical and non-technical risk categories

Team Composition Requirements

- Minimum 8 core members (Team Leader + 7 specialists)
- Caribbean nationals strongly encouraged for team composition
- Core team members must commit minimum 50% of estimated days to this assignment

G. Reporting, Coordination, and Knowledge Transfer

- Primary reporting line: CCREEE Technical Director / Marine Energy Expert (day-to-day technical oversight, deliverable review and approval recommendation)
- Euroclima Programme Coordinator: programme-level coordination and reporting
- National partners: Antigua and Barbuda, Barbados, Grenada, Saint. Vincent and the Grenadines, Saint Barthélemy

Knowledge Transfer Requirements

- At Month 08 (mid-term), conduct a methodology briefing session with CCREEE technical staff covering: wave resource data processing methodology, power systems modelling inputs, financial model structure, and in-situ data collection findings to date. Session to be recorded.
- All model inputs, assumptions, and data sources must be documented with sufficient clarity for CCREEE to replicate or update outputs independently
- Deliver at project close a complete data handover package, including all model files, editable/source files, GIS databases and metadata, financial model and user guide, in-situ datasets, and storage/hosting guidance, with successful handover contingent on all Data, IP and Usage Rights being clearly documented and addressed, including ownership, permitted use of project-created data and IP, and perpetual use rights for authorised project stakeholders.
- Train CCREEE-designated focal points in monitoring procedures for in-situ equipment during deployment.

INSTRUCTIONS TO PROPOSERS

1. General Instructions

CCREEE invites qualified consulting firms to submit proposals for the Wave Energy Feasibility Assessment for Four Caribbean Countries and One Territory – Work Package 1: Technical & Investment, in accordance with the requirements of this Terms of Reference.

Bidders are expected to carefully review the Terms of Reference, submission requirements, financial proposal templates, contractual conditions, and any subsequent clarifications or addenda issued by CCREEE.

The assignment is expected to be implemented over a period of sixteen (16) months, including a 12-month in-situ marine data collection programme, with desk-based activities proceeding in parallel where appropriate.

The bidder shall be responsible for ensuring that its proposal addresses the complete scope of services and contains sufficient information for CCREEE to evaluate the technical approach, organizational capacity, proposed team, implementation arrangements, and financial proposal.

2. Pre-Proposal Meeting

A pre-proposal meeting will be held as follows:

Date: [Wednesday 07-October-2026]

Time: [2:00 – 3:00 pm at local Barbados time (AST, UTC-4)]

Venue/Platform: Microsoft Teams meeting

Join: <https://teams.microsoft.com/meet/213043569695111?p=sF6VhVzMwOJJRN4FTI>

Meeting ID: 213 043 569 695 111

Passcode: f3DT9om6

The purpose of the meeting is to provide prospective bidders with an opportunity to seek clarification regarding the scope of work, technical requirements, proposal preparation, contractual arrangements, and procurement process.

Participation in the pre-proposal meeting shall **not be mandatory**. Any clarification provided during the meeting that materially affects the TORs shall be formally communicated to all prospective bidders through written clarification or an addendum. Verbal statements made during the meeting shall not modify the TORs unless subsequently confirmed in writing by CCREEE.

3. Requests for Clarification

Requests for clarification concerning this Request for Proposal in accordance with the TORs shall be submitted in writing to [procurement@ccreee.org] no later than **[14-October-2026]**.

CCREEE will issue responses to material clarification requests in a manner that ensures equal access to relevant information by all prospective bidders. Where necessary, CCREEE may issue an addendum to the RFP.

Bidders shall not contact individual CCREEE staff members, evaluation committee members, participating jurisdictions, or other persons involved in the procurement for the purpose of obtaining information concerning the evaluation or influencing the procurement process.

4. Proposal Submission

Bidders shall submit their proposals no later than:

Submission Deadline: [Wednesday 21-October-2026]

Method of Submission: [procurement@ccreee.org]

Proposals received after the stipulated deadline may be rejected in accordance with the applicable procurement procedures.

The proposal shall comprise **two clearly separate components**:

A. Technical Proposal

B. Financial Proposal

The Technical Proposal and Financial Proposal shall be submitted as separate, clearly identified files. Financial information shall not be included in the Technical Proposal.

5. Technical Proposal

The Technical Proposal shall demonstrate the bidder's understanding of the assignment and its capacity to successfully undertake the required services.

At a minimum, the Technical Proposal should include:

I. Executive Summary and Understanding of the Assignment

The bidder's understanding of the objectives, expected outcomes, principal technical challenges, regional context, and key considerations affecting implementation.

II. Technical Approach and Methodology

A detailed methodology for delivering the complete scope of work, including the approach to:

- a. in-situ wave and current measurement;
- b. equipment mobilization, deployment, maintenance and retrieval;
- c. bathymetric and geotechnical surveys;
- d. wave resource assessment and modelling;
- e. technology assessment;
- f. site identification and preliminary engineering;
- g. grid integration analysis;
- h. economic and financial assessment;
- i. investment prospects and bankability assessment;
- j. risk assessment; and
- k. feasibility determination and reporting.

III. Implementation Strategy and Work Plan

A detailed implementation schedule demonstrating how the bidder proposes to complete the assignment within the required 16-month period. Bidders may propose their own allocation of expert inputs and sequencing of activities, provided that the proposed approach is adequately justified and meets all TOR requirements. The TOR specifically treats indicative expert-day allocations as flexible where an alternative allocation is technically justified.

IV. Equipment Mobilization, Maintenance, Deployment and Retrieval Approach

The bidder shall explain its proposed approach to equipment sourcing or availability, mobilization, calibration, shipping, customs clearance, deployment, maintenance, telemetry, retrieval and contingency arrangements.

V. Project Management and Quality Assurance

The proposed project-management structure, internal coordination arrangements, quality-control and peer-review procedures, reporting arrangements, risk-management mechanisms, and communication with CCREEE and participating jurisdictions.

VI. Knowledge Transfer and Capacity Building

The proposed arrangements for knowledge transfer, handover of models and datasets, documentation of assumptions and methodologies, and capacity building of CCREEE-designated personnel. The TOR



requires documented models and assumptions, a full data handover package, and knowledge-transfer activities during implementation.

VII. **Firm Experience and Relevant Assignments**

Details of assignments of a similar nature and complexity, including client, country, scope, implementation period, contract value, and contact details for references.

VIII. **Team Composition and Key Experts**

Proposed team structure, roles and responsibilities, level of effort, availability, and CVs of all key experts. The qualifications and experience of key personnel shall meet the requirements specified under the Consultancy Qualifications section of the TOR.

IX. **Subcontracting / Consortium Arrangements**

Where any component of the assignment will be undertaken by a consortium member, joint-venture partner, or subcontractor, the proposal shall clearly identify the entity, its role, responsibilities, and relevant experience.

6. Financial Proposal

The Financial Proposal shall be submitted separately from the Technical Proposal (two separate documents) and shall provide a complete and transparent price for undertaking the assignment.

The Consultant shall complete the prescribed **Deliverable-Based Summary Financial Proposal template**, indicating the proposed amount against each deliverable/payment milestone.

In addition to the Summary Financial Proposal, the Consultant shall submit a **detailed cost breakdown for each deliverable**, clearly identifying, as applicable, professional fees, expert inputs, equipment, marine surveys, vessels, travel and subsistence, shipping and logistics, insurance, software, workshops, administrative costs, and any other costs required to complete the assignment.

The detailed cost breakdown will be used by CCREEE to assess cost reasonableness, consistency, completeness and comparability across financial proposals.

The Financial Proposal shall clearly state:

- the proposal currency;
- unit rates and quantities where applicable;
- professional fees and estimated expert inputs;
- equipment and survey costs;
- travel, logistics and marine-operation costs;
- the total lump-sum contract price.

The total of all detailed cost schedules shall reconcile with the Deliverable-Based Summary Financial Proposal. Proposal should be exclusive of VAT as CCREEE is exempted from indirect taxes.

7. Treatment of Saint Barthélemy

The technical and financial implications associated with Saint Barthélemy **shall be clearly identified separately** from the base scope relating to Antigua and Barbuda, Barbados, Grenada, and St. Vincent and the Grenadines.

The Financial Proposal shall therefore identify:

a. Base Assignment Price: Cost applicable to Antigua and Barbuda, Barbados, Grenada, and St. Vincent and the Grenadines; which may also be mentioned for each country separately, and

b. Saint Barthelemy Price: Incremental cost associated specifically with inclusion of Saint Barthélemy.

The scope relating to Saint Barthélemy is conditional upon the signing and formalization of the relevant Memorandum of Understanding between the parties. Inclusion of the Saint Barthélemy price in the proposal shall therefore not constitute a commitment by CCREEE to award that portion of the scope.

8. Documents to be Submitted

The proposal package should include, at a minimum:

- signed proposal submission/cover letter by an authorized representative;
- company profile and legal registration/incorporation documents;
- evidence of authority of the proposal signatory;
- completed Technical Proposal;
- completed Financial Proposal and all prescribed financial schedules;
- evidence demonstrating compliance with the mandatory firm-level qualification requirements;
- details of at least three successfully completed assignments of a similar nature and scope, including client contact details, project description and contract value;
- CVs of proposed key experts and confirmation of their availability;
- organizational chart and proposed staffing schedule;
- details of consortium, joint-venture and/or subcontracting arrangements, where applicable;
- financial statements or other documentation required to substantiate the specified financial-capacity requirement;
- evidence of the required professional indemnity insurance or a commitment to obtain the required coverage prior to contract signature, as applicable;
- declaration of eligibility, absence of prohibited conflicts of interest, and compliance with applicable anti-fraud, anti-corruption and ethical requirements;
- declaration regarding litigation, insolvency, debarment or other circumstances that may materially affect the bidder's ability to perform the contract; and
- any other forms or declarations included in the RFP.

9. Eligibility and Minimum Qualification Criteria

Only bidders meeting the applicable legal, administrative and mandatory technical eligibility requirements will proceed to detailed technical evaluation.

Consistent with the TOR, the consulting firm is expected to demonstrate substantial experience in the ocean/marine energy sector, experience undertaking wave-energy feasibility studies, demonstrated capability in in-situ wave buoy and ADCP deployment and retrieval, bathymetric and geotechnical survey capability, and access to a multidisciplinary team covering the required technical, engineering, power systems, oceanographic and financial disciplines.

The proposed Team Leader and Core Team shall satisfy the applicable educational and professional-experience requirements specified in Section F of the TOR. These include specialized expertise in wave-resource assessment, marine surveys, marine/coastal engineering, power systems, financial/economic analysis, GIS and risk assessment. Failure to meet a requirement expressly identified as **mandatory** may result in the proposal being determined non-responsive.

10. Evaluation and Award Criteria

Evaluation is proposed to be undertaken sequentially as follows:

Stage 1 – Administrative Responsiveness and Eligibility

Proposals will first be reviewed for completeness, timely submission, eligibility, signed documentation and



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compliance with the mandatory requirements of the RFP. Proposals failing a material mandatory requirement may not proceed to technical evaluation.

Stage 2 – Technical Evaluation

Responsive proposals will be evaluated against the technical criteria contained in the RFP. The evaluation should consider, as applicable:

- relevant experience and capability of the consulting firm;
- quality and appropriateness of the proposed methodology;
- understanding of the assignment;
- robustness and feasibility of the proposed 16-month work plan;
- methodology for in-situ monitoring, marine surveys, equipment mobilization and deployment;
- qualifications, relevant experience and availability of the proposed Team Leader and key experts;
- project-management, quality-assurance and risk-management arrangements;
- knowledge-transfer and capacity-building approach; and
- overall responsiveness to the TOR.

Only proposals obtaining the prescribed minimum technical score of **70%** will proceed to financial evaluation.

Stage 3 – Financial Evaluation

The Financial Proposals of technically qualified bidders will be evaluated for completeness, arithmetic accuracy, internal consistency and overall cost reasonableness. CCREEE may compare individual deliverable costs, unit rates, professional fees, equipment and survey costs, and other material cost components in addition to the overall proposal price.

Stage 4 – Combined Evaluation and Contract Award

The final ranking shall be determined using the technical and financial weighting specified in the RFP:

Technical Proposal: 80%

Financial Proposal: 20%

Subject to successful due diligence, reference verification and any required clarifications, the contract shall be recommended for award to the bidder achieving the highest combined technical and financial score in accordance with the approved evaluation methodology.

The St. Barts component shall remain separately identifiable and its inclusion in the eventual contract shall remain subject to fulfilment of the condition stated in the RFP.

11. Proposal Validity

Proposals shall remain valid for a minimum period of **120 calendar days** from the proposal submission deadline. During this period, bidders shall maintain the availability of the proposed key personnel and the validity of the proposed financial terms unless otherwise agreed in writing with CCREEE.

12. Conflict of Interest and Ethical Conduct

Bidders shall disclose any actual, potential or perceived conflict of interest that could affect the impartial performance of the assignment.

The Consultant and its experts shall maintain independence in undertaking technology assessments, vendor engagement, feasibility analysis and investment recommendations. Any attempt to improperly influence the

procurement or evaluation process may result in disqualification in accordance with the applicable procurement rules.

13. Clarification of Proposals

During evaluation, CCREEE may request written clarification of any aspect of a proposal. Such clarification shall not be used to materially alter the substance or price of the proposal except where permitted under the applicable procurement procedures, including the correction of arithmetic errors.

Failure to respond to a clarification request within the stipulated period may affect the evaluation of the proposal.

14. CCREEE's Rights

CCREEE reserves the right, subject to the applicable procurement rules, to accept or reject any proposal, request clarification, verify information and references, cancel or amend the procurement process, or refrain from making an award without thereby incurring liability to bidders.

Submission of a proposal does not create any contractual right or entitlement to an award.

15. Confidentiality of the Evaluation Process

Information relating to the examination, clarification, evaluation and comparison of proposals, and recommendations concerning contract award, shall not be disclosed to bidders or other persons not officially involved in the procurement process until the appropriate stage of the procurement has been completed.

CCREEE – WAVE ENERGY FEASIBILITY STUDY
FINANCIAL PROPOSAL SUMMARY – DELIVERABLE-BASED COST

Phase	Deliverables	Payment %	Base Detailed Cost	St. Barts Detailed Cost	Combined Detailed Cost
Phase 1: Inception	D1: Inception Report + EMMDRP	10%	-	-	-
Phase 2: Equipment Mobilization & Deployment	D1: EMMDRP approved / deployment milestone	20%	-	-	-
Phase 3: Data Collection + Desk Analysis	D3: Technology Assessment; Preliminary D4/D5 drafts	15%	-	-	-
Phase 4: Data Retrieval & Validated Resource Assessment	D-Data: In-Situ Data Package; D2: Validated Resource Assessment	10%	-	-	-
Phase 5: Investment-Grade Engineering & Economics	D4, D5, D6, D7: Engineering, Grid, Economics, Investment	20%	-	-	-
Phase 6: Risk, Feasibility & Reporting	D8, D9, D10, D11, D12, D13, D14	15%	-	-	-
Final Presentation	Final presentation; knowledge transfer session	10%	-	-	-
TOTAL		100%	-	-	-

Note: The Consultant shall complete the above prescribed Deliverable-Based Summary Financial Proposal template, indicating the proposed amount against each deliverable/payment milestone.

In addition to the Summary Financial Proposal, the Consultant shall submit a detailed cost breakdown for each deliverable, clearly identifying, as applicable, professional fees, expert inputs, equipment, marine surveys, vessels, travel and subsistence, shipping and logistics, customs and duties, insurance, software, workshops, administrative costs, and any other costs required to complete the assignment.

The detailed cost breakdown will be used by CCREEE to assess cost reasonableness, consistency, completeness and comparability across financial proposals.

CCREEE is tax-exempted so the financial proposal should be exclusive from any VAT