



TURKS AND CAICOS ISLANDS GOVERNMENT

MINISTRY OF INNOVATION, TECHNOLOGY AND ENERGY

OFFICE OF THE ENERGY AND UTILITIES COMMISSIONER
ENERGY AND UTILITIES DEPARTMENT



TERMS OF REFERENCE

Job Title	IRRP Technical Consultant
Project	TCI Integrated Resource and Resilience Plan (IRRP) for the Turks and Caicos Islands
Contracting Authority	Energy & Utilities Department, TCI
Reports To	Mr. Delano R. Arthur – Energy & Utilities Commissioner TCI
Date of Issue	August 10 th 2026
Date of Deadline	August 31 st 2026
Duration	Twelve (12) months
To Apply	Individual consultants and/or firms are invited to apply for this opportunity: Request for Consultancy Services: 1. Technical Proposal inclusive of the following: 2. Cover letter/overview of the consultant 3. Curriculum Vitae 4. References of previous work completed that is similar to the TOR 5. Contact information for three (3) references. 6. Detailed Hourly Rate for the works outlined in the TOR Please send any clarification questions and proposal submission to: eud@gov.tc with Subject: IRRP Technical Consultant.

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1. BACKGROUND

The Government of the Turks and Caicos Islands (TCIG), through the Energy & Utilities Department (EUD), is embarking on the development of a national Integrated Resource and Resilience Plan (IRRP) for the electricity sector. The IRRP is intended to establish a long-term, evidence-based roadmap for the reliable, affordable, sustainable and resilient development of the electricity system across the Turks and Caicos Islands.

The IRRP is being supported through grant funding and technical assistance under the Caribbean Development Bank (CDB)-funded Accelerated Sustainable Energy and Resilient Transition (ASERT 2030) Regional Capacity Strengthening Activity (RCSA) Programme, implemented with support from the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE).

The IRRP is expected to assess the existing electricity system; forecast future electricity demand; evaluate renewable energy and energy storage opportunities; assess resilience and climate risks; identify least-cost generation options; consider transmission and distribution requirements; assess energy efficiency and demand-side management opportunities; engage key stakeholders; and establish an implementation roadmap with priority investment recommendations.

While CDB/CCREEE will provide grant-funded technical support for development of the IRRP, the EUD requires a technical resource acting in an owner's-engineer-type advisory capacity to represent the interests of Government and the people of the Turks and Caicos Islands throughout the process. This resource will support EUD in understanding, interrogating and managing the technical process; independently reviewing assumptions, data, models and recommendations; identifying risks and gaps; facilitating timely decisions; and ensuring that the final IRRP is practical, technically robust, transparent, implementable and aligned with national policy objectives.

2. OBJECTIVE

The Energy & Utilities Department requires the services of a highly experienced IRRP Technical Consultant to serve as EUD's technical adviser throughout the development of the Turks and Caicos Islands Integrated Resource and Resilience Plan.

The Consultant will not replace the CDB/CCREEE-funded IRRP consultants or undertake their primary scope of work. Rather, the Consultant will act as EUD's technical representative and owner's-engineer-type adviser, providing independent review, challenge, interpretation,

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coordination and quality assurance so that Government is able to participate effectively in, understand, and make informed decisions throughout the IRRP process.

The Consultant shall work collaboratively with EUD, CDB, CCREEE, the appointed IRRP consulting team, Pelican Energy TCI, relevant Government agencies and other stakeholders, while maintaining professional independence and placing the interests, policy objectives and long-term needs of the Turks and Caicos Islands at the centre of the assignment.

The Consultant will be responsible for:

- Advising EUD on the overall IRRP methodology, governance, work programme, decision points, technical requirements and expected outputs.
- Reviewing and challenging technical assumptions, methodologies, datasets, forecasts, scenarios, models and recommendations developed through the IRRP.
- Supporting EUD in defining national planning objectives and ensuring that reliability, affordability, resilience, energy security, sustainability and implementation mechanisms are appropriately balanced.
- Reviewing utility and stakeholder data for completeness, consistency and fitness for purpose and identifying material data gaps or assumptions requiring validation.
- Providing independent technical advice on demand forecasting, generation planning, renewable energy integration, energy storage, transmission and distribution, system reliability, resilience, energy efficiency and demand-side resources.
- Reviewing modelling inputs and outputs and advising EUD on the implications, sensitivities, risks and trade-offs associated with alternative scenarios.
- Supporting EUD during technical meetings, workshops, stakeholder consultations and discussions with the electricity utility and IRRP consultants.
- Tracking technical actions, unresolved issues, dependencies and decisions required from EUD or other stakeholders to keep the IRRP process moving.
- Providing quality assurance review of key IRRP reports and deliverables before acceptance or endorsement by EUD.
- Advising EUD on the practicality, sequencing, regulatory implications and investment priorities arising from the final IRRP.
- Supporting knowledge transfer to EUD personnel so that the Department can independently use, monitor and update the IRRP after completion.

3. SCOPE OF WORK

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3.1 IRRP Governance, Methodology and Work Plan Review

Review the proposed IRRP governance arrangements, methodology, work plan, modelling framework, stakeholder process, deliverable schedule and decision-making structure. Advise EUD on whether the proposed approach is sufficient to produce a credible national plan and recommend modifications where necessary.

Assist EUD in maintaining an integrated technical action register identifying key decisions, information requirements, responsible parties, dependencies, risks and deadlines.

3.2 Baseline System and Data Review

Independently review the baseline technical information used for the IRRP, including generation assets, fuel use, operating performance, load profiles, peak demand, customer growth, system losses, reliability performance, transmission and distribution infrastructure, existing renewable energy, planned investments and other material system information.

Assess the completeness, consistency and reasonableness of data provided by the electricity utility and other stakeholders. Identify data gaps, inconsistencies or assumptions that could materially affect IRRP outcomes and advise EUD on appropriate validation or mitigation measures.

3.3 Electricity Demand Forecasting

Review the demand forecasting methodology and assumptions, including population growth, tourism and development activity, economic growth, customer connections, energy efficiency, distributed generation, electric vehicles, emerging loads and other relevant drivers. Review base, high and low demand scenarios and associated sensitivities to ensure that the planning forecast appropriately reflects the development trajectory and uncertainty of the Turks and Caicos Islands.

3.4 Generation and Least-Cost Resource Planning

Review generation expansion planning, production-cost and capacity-expansion modelling, candidate technologies, fuel assumptions, capital and operating costs, financing assumptions, reserve margins, reliability criteria and retirement or replacement assumptions.

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Assess whether proposed resource portfolios represent credible least-cost options when evaluated alongside reliability, resilience, energy security, environmental performance, implementation risk and national policy objectives.

3.5 Renewable Energy and Energy Storage Integration

Provide independent technical review of solar, wind and other renewable resource assumptions; renewable energy penetration scenarios; grid integration requirements; curtailment; flexibility; inverter-based resources; battery energy storage systems; and other technologies required to support increased renewable energy penetration.

Advise EUD on the reasonableness of renewable energy and storage deployment pathways, including technical constraints, sequencing, system services and implications for future procurement and regulation.

3.6 Transmission, Distribution and Grid Reliability

Review transmission and distribution planning assumptions, system constraints, network reinforcement requirements, interconnection needs, reliability criteria, voltage and frequency performance, system protection, operational flexibility and other grid requirements identified through the IRRP.

Advise EUD on whether proposed network investments are appropriately linked to demand growth, generation development, renewable integration, reliability and resilience requirements.

3.7 Resilience, Climate Risk and Energy Security

Review the treatment of hurricanes, flooding, sea-level rise, extreme heat, fuel supply disruption, equipment failure and other climate or operational risks. Ensure that resilience is incorporated into resource selection and infrastructure planning rather than treated solely as a separate assessment.

Advise on appropriate resilience measures, including system hardening, redundancy, distributed resources, storage, black-start capability, critical-load support, fuel security, emergency restoration and other measures relevant to the island context.

3.8 Energy Efficiency and Demand-Side Resources

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Review the assessment of energy efficiency, demand response, load management, distributed energy resources and other demand-side opportunities. Advise EUD on the technical and economic assumptions used and whether these resources are appropriately compared with supply-side investments.

3.9 Scenario, Sensitivity and Risk Analysis

Review the IRRP scenario architecture and sensitivity analyses to ensure that major uncertainties are tested, including fuel prices, demand growth, technology costs, renewable penetration, financing costs, climate risks, project delays and other material variables. Provide EUD with clear interpretation of the trade-offs between scenarios and identify circumstances under which preferred resource pathways or investment decisions may change.

3.10 Independent Review of Modelling and Technical Deliverables

Review key modelling methodologies, inputs, assumptions, outputs and conclusions at appropriate stages of the IRRP. The Consultant shall not be required to recreate the complete IRRP model unless specifically instructed, but shall undertake sufficient independent checks, benchmarking and sensitivity review to advise EUD whether results are technically reasonable and decision-useful.

Review inception reports, baseline assessments, data registers, demand forecasts, resource assessments, modelling reports, resilience assessments, draft plans, implementation roadmaps and other key deliverables and provide concise written comments and recommendations to EUD.

3.11 Technical Representation and Stakeholder Facilitation

Attend and support EUD at technical meetings, workshops and stakeholder engagements. Assist EUD in preparing technical questions, reviewing presentations and submissions, resolving technical issues and ensuring that Government's requirements are clearly understood and addressed.

Where technical positions differ between stakeholders, provide EUD with an independent assessment of the issues, available options, risks and recommended path forward.

3.12 Regulatory, Policy and Investment Interface

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Identify regulatory, policy, procurement and institutional issues arising from the IRRP and advise EUD where additional policy decisions, regulatory measures, studies or Cabinet approvals may be required.

Review the proposed implementation roadmap and priority investments to ensure that recommendations are technically mature, appropriately sequenced and supported by clear prerequisites, indicative timelines, dependencies and decision points.

3.13 Knowledge Transfer and Institutional Capacity

Provide ongoing technical mentoring and knowledge transfer to EUD personnel throughout the assignment. Explain modelling concepts, planning criteria, assumptions, trade-offs and results in a manner that enables EUD to independently interrogate future planning exercises.

At completion, provide EUD with practical guidance on IRRP monitoring, periodic updates, data requirements, governance and the triggers that should cause the Plan to be refreshed or re-optimized.

4. DELIVERABLES

- Inception Memorandum setting out the Consultant's understanding of the IRRP process, key risks, proposed oversight approach and priority technical issues.
- Review of the IRRP methodology, governance arrangements, modelling framework and work plan.
- Baseline System and Data Review Memorandum identifying material data gaps, inconsistencies and recommended actions.
- Independent review memoranda on demand forecasting, generation planning, renewable energy, storage, transmission and distribution, resilience, energy efficiency and other major technical workstreams.
- Scenario and Sensitivity Review identifying key assumptions, risks, trade-offs and implications for Government decision-making.
- Written technical comments on key draft deliverables produced by the CDB/CCREEE-funded IRRP consulting team.
- Technical meeting notes, decision briefs and issue papers as required by EUD.
- Maintained technical action, risk and decision register for the duration of the assignment.

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- Assist in reviewing the Request for Proposals (RFP) for IRRP Modelling Services, including the proposed technical scope of work, modelling objectives, required scenarios and sensitivities, data and modelling requirements, minimum technical qualifications, key deliverables, schedule, and technical evaluation criteria necessary to procure a suitably qualified IRRP modelling consultant or firm.
- Technical Review and Finalization of the IRRP Modelling RFP and Procurement Support, including incorporation of EUD comments, confirmation that the RFP is aligned with Government policy objectives for renewable energy, affordability, reliability, resilience and sustainability, and technical support to EUD during the procurement process, including responses to technical clarifications and evaluation of technical proposals, where requested.
- Independent review of the Draft IRRP, including findings, material concerns, recommended revisions and advice on whether the Plan is suitable for EUD acceptance.
- Independent review of the Final IRRP and Implementation Roadmap, including priority actions, prerequisites, regulatory implications and investment sequencing.
- IRRP Oversight and Implementation Guide for EUD, including recommended governance, monitoring indicators, data requirements and future update process.
- Knowledge-transfer sessions and technical briefings for EUD personnel.

5. SCHEDULE AND WORK PLAN

The IRRP Technical Consultant shall prepare and maintain a detailed work plan aligned with the CDB/CCREEE-supported IRRP programme. The Consultant shall be available at critical stages of the IRRP to review deliverables, participate in technical discussions, advise EUD on decisions and support resolution of issues that could delay or materially affect the quality of the Plan.

The assignment is expected to require a combination of scheduled technical reviews and responsive advisory support. The Consultant shall therefore propose an approach that provides continuity throughout the IRRP process while allowing effort to increase around major modelling milestones, stakeholder workshops, draft deliverables and Government decision points.

6. PROJECT DURATION

The assignment is expected to last approximately twelve (12) months, or for the duration of the IRRP development process, whichever is required to support completion and

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acceptance of the final Plan. Any extension shall be subject to project requirements, funding availability and satisfactory performance.

7. RESOURCES AND WORKING ARRANGEMENTS

The Consultant will report directly to the Energy & Utilities Commissioner and will act as an technical adviser to the EUD. The EUD will facilitate access, subject to applicable confidentiality arrangements, to relevant project documents, data, meetings and technical outputs necessary for performance of the assignment.

The Consultant will work collaboratively with CDB, CCREEE, the appointed IRRP consultants, Pelican Energy TCI, Government ministries and agencies, and other stakeholders. Collaboration shall not diminish the Consultant's obligation to provide EUD with professional advice and to identify material technical, commercial, implementation or public-interest concerns.

The Consultant shall have no financial or other interest that could reasonably be perceived as compromising independence in relation to the electricity utility, the appointed IRRP consulting team, technology vendors, project developers or other parties whose proposals or data may be evaluated through the IRRP.

7. QUALIFICATIONS

- Bachelor's degree or higher in Electrical Engineering, Power Systems Engineering, Energy Systems, Mechanical Engineering or another directly relevant technical discipline. A postgraduate degree is desirable.
- Minimum fifteen (15) years of progressively responsible experience in electric utility planning, power systems, integrated resource planning, generation planning or energy-sector technical advisory services.
- Demonstrated experience leading, developing, independently reviewing or providing owner's-engineer-type oversight of Integrated Resource Plans, Integrated Resource and Resilience Plans or comparable long-term electricity planning studies.
- Strong understanding of power-system planning, demand forecasting, generation expansion planning, production-cost modelling, renewable energy integration, battery energy storage, transmission and distribution planning, reliability and resilience.
- Demonstrated ability to review and challenge complex technical models, assumptions and consultant outputs and translate findings into clear advice for Government decision-makers.

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- Experience working with utilities, governments, regulators, development banks or international development institutions.
- Experience with island power systems, small-island developing states, Caribbean electricity systems or diesel-dependent grids will be considered a significant asset.
- Knowledge of electricity-sector economics, procurement, regulatory frameworks and investment planning sufficient to identify interfaces between technical recommendations and Government decisions.
- Strong stakeholder-management, facilitation, technical writing and presentation skills.
- Demonstrated independence, sound professional judgment and ability to represent the interests of a public-sector client in multidisciplinary technical processes.

8. PROPOSAL EVALUATION CRITERIA

Criterion	Weight	Assessment Focus
Relevant IRRP / Power-System Planning Experience	30%	Depth of experience developing or independently reviewing IRPs/IRRs and complex utility planning studies.
Technical Approach and Methodology	25%	Quality of the proposed owner's-engineer-type oversight, independent review, quality assurance and decision-support approach.
Qualifications of Key Personnel	20%	Power-system planning expertise, seniority, technical breadth and demonstrated professional independence.
Island / Caribbean / Development Institution Experience	15%	Relevant experience with island grids, Caribbean utilities, governments, regulators, CDB or comparable development institutions.
Knowledge Transfer and Availability	10%	Ability to support EUD throughout the process, respond at critical milestones and build internal technical capacity.

EUD reserves the right, at its sole discretion, to accept or reject any candidate or proposal.

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