

DRAFT TERMS OF REFERENCE

CONSULTANCY SERVICES FOR TECHNICAL ADVISORY SERVICES FOR THE DEVELOPMENT OF THE CARIBBEAN REGIONAL ELECTRICITY GRID INTERCONNECTION AND RENEWABLE ENERGY SCALING PROJECT BACKGROUND

1.01 All Borrowing Member Countries (BMCs) of the Caribbean Development Bank (CDB) are pursuing the development of sustainable energy (SE) options as part of their national energy policies and climate resilience strategies, to address national energy security challenges and to achieve carbon emission reduction targets. Given that most BMCs are over-reliant on imported petroleum and petroleum products to fuel their energy systems and are subject to the volatility of the global energy commodity markets, they remain energy insecure and are severely, adversely affected by the current high fuel prices.

1.02 Driven by the global climate change agenda to limit global temperature to below 1.5 degrees Celsius, the decarbonisation of energy systems has become a global priority to realise a reduction in greenhouse gas emissions, including for Caribbean countries. This is reflected in their ambitious Nationally Determined Contributions (NDCs) commitments for reducing greenhouse gas emissions and adapting to climate change. CDB's BMCs have all established NDCs, despite their collective miniscule contribution to the global stock of carbon emissions. In addition, all BMCs have committed to pursuing the Sustainable Development Goals (SDGs) including SDG 7, which focuses on increasing access to affordable, reliable and sustainable energy. The need to address their lack of energy security (linked to their over-reliance on imported fossil fuels) however, remains the overarching driver for their transition to SE options.

1.03 Fortunately, CDB's BMCs have vast renewable energy (RE) potential in the form of solar, wind, geothermal, hydropower, bioenergy¹, and marine RE resources, which could deliver electricity at unit prices below fossil fuel options, and with very attractive returns for RE investments². For more than 15 years, however, these countries have been seeking to significantly increase the contributions of RE to their energy matrices, towards breaking the status quo of over-reliance on imported fossil fuels. While there has been some progress, in general, it is observed that the pace and scale of the adoption of RE is much too slow for these countries to meet their set 2030 targets.

1.04 Starting from a base of 8% in 2012, CARICOM regional targets for RE capacity for electricity were established by Energy Ministers in 2013, as 20% by 2017, 28% by 2022, and 47% by 2027 (or extrapolated to 55% by 2030)³. At the end of 2022, the RE penetration was approximately 12% (or ~700 MW), remaining flat for the previous two years and well below the 2017 target, and based on the current trajectory, the 2022 and 2027 targets will be missed by extremely far margins. To achieve the target, RE capacity in 2030, the penetration level (% and capacity) must increase four-and-a-half fold, and the rate of RE capacity installation per year must increase more than fourteen-fold, requiring more than USD1.25 billion per year over the next 7 years⁴.

1.05 The SIDS Lighthouses Initiative (LHI) is a framework for action to support Small Island Developing States (SIDS) in their energy transition efforts from fossil fuel dependence to renewables. The Initiative brings together 40 SIDS as well as 44 partners including CDB. Building on successes and the increased uptake of renewables in SIDS, the Initiative set a target of 10 GW of installed RE capacity in all SIDS by 2030. This new target has formed the basis of the IRENA-AOSIS Energy Compact and the Ambitious SIDS Climate Action Summit Package, which are operationalized by the SIDS LHI.

¹ Mainly confined to mainland BMCs.

² Against the backdrop of the prevailing high electricity prices and declining prices of RE technologies.

³ CARICOM Secretariat: www.caricom.org

⁴ Based on preliminary estimate by CDB.

1.06 This level of investment necessary for this gap to be filled, can be described as **massive** relative to current levels. Further, to meet the target, the investment must be made in a very short time, requiring that such investments be delivered at an **express-pace**, multiple times the current pace of investment. It is therefore clear that the targets cannot be achieved by the current (or the business-as-usual) approach and will require **bold and assertive actions, reflecting urgency in the scaling-up of private investment**. Further, given known weaknesses and vulnerabilities, this must be conducted in a manner which also promotes improvement in *resilience* and *gender balance*⁵ in the energy sector.

1.07 Against this background, the Accelerated Sustainable Energy and Resilient Transition (ASERT) **ASERT-2030** Framework⁶ has been conceived by CDB as part of its Energy Sector Policy and Strategy (ESPS) to facilitate the Bank's leadership role in promoting bold decision making, in relation to pursuing **transformative initiatives (ASERTives)** for scaled RE investments projects. In this regard, the Bank is embracing the challenge to play an increased leadership and coordination role in the sector, leveraging its unique position as the only Multilateral Development Bank focused on the Caribbean (all CARICOM Members and most Associate Members). ASERTives, would be pursued to address major barriers and take advantage of big opportunities. There are indeed massive opportunities for BMCs to be derived from the harnessing of the Region's RE potential to meet their domestic energy demand and to allow them to participate in the emerging international RE/green products market, linked to global de-carbonisation and net-zero emissions by 2050. Further, by pursuing these opportunities in a collective manner among themselves, the countries can largely overcome the constraints of small market sizes and lack of economies of scale.

Key priority areas of focus for ASERTives

1.07 As part of the ASERT 2030 framework of the ESPS, some key priority areas of focus (PAF) were identified for pursuing ASERTives development within the ASERT-2030 framework objectives. One key PAF which reflects a combination of other priority intervention areas, is the development of the Caribbean Regional Electricity Grid Inter-connection and RE Scaling ASERTive (this takes into consideration, the development of geothermal energy, offshore wind, green commodity production and interconnection of grids).

Proposal for the Development of Caribbean Regional Electricity Grid Inter-connection and RE Scaling Project

1.08 Based on a number of converging developments (challenges and opportunities), it is considered timely and opportune that the Caribbean region pursues a major electricity sector development project referred to as the Caribbean Regional Electricity Grid Inter-connection and RE Scaling (CREGI-RES) Project. CDB has identified this project as one of the potentially transformative initiatives (or ASERTive) of the ASERT 2030 framework of its ESPS. A summary of the potential benefits and the importance of CDB's leadership role is shown at Appendix C.

⁵ Globally, women are approximately 32% of the Full Time Employees in the renewable energy sector and 40% in the solar energy sector - <https://www.irena.org/Digital-content/Digital-Story/2022/Sep/A-Gender-Perspective-on-Solar-Employment/detail>

⁶ The ASERT-2030 Framework is a CDB-led approach for encouraging BMCs (with the support of Partners) to implement transformative RE/EE/EI initiatives towards radically increasing the scale and pace of the energy and resilience transition in BMCs. As part of the ASERT-2030 Framework, the Bank seeks to identify (through structured consultations referred to as **ASERT Dialogues**) key barriers to rapid investments in RE and EE, and to develop/adopt relevant transformative initiatives (referred to as **ASERTives**), which can be implemented through strategic partnerships (referred to as **Strategic ASERT Partnerships**) with BMCs, and regional and international Partners. ASERT-2030 emphasises: (i) stretch-scenarios and ambitions for the radically increased scale and pace of RE investments, through the dismantling of identified barriers, while mobilising the appropriate resources to facilitate the investments; and (ii) complementarity, building on existing and ongoing initiatives/efforts at national and regional levels.

1.09 At the most fundamental level, the project is premised on the projected very strong economics of the available vast RE supply in the Caribbean, compared to the current collective relatively small domestic electricity demand, and large current regional demand for the export of green energy-carriers/products. Also, there is a fast-growing international demand for green energy-carriers which can be supplied based on scale up of existing and new technologies.

1.10 Special focus on RE resources of geothermal energy, offshore wind, and possibly hydropower, given the potential advantages of these resources, for providing electricity supply in excess of the domestic electricity demands of many BMCs. The development of this CREGI-RES project has been accorded increased priority by CDB since the second quarter of 2023, in the context of regional and national dialogues.

Infrastructure Components

1.11 The project would involve the development of infrastructure components (some in parallel) which will include: (i) strengthening the countries' electricity system in relevant areas to facilitate scaling-up of the targeted RE resources and interconnection; (ii) developing and optimising the RE resources (mainly geothermal energy and off-shore wind) which will form the main energy sources for allowing the country to green their domestic electricity supplies with excess to be available for trade where feasible, and (iii) integration of various electricity systems among CDB's BMCs as well as with other Caribbean countries through sub-marine high voltage (AC or DC) electricity transmission interconnectors, and the development of associated facilities.

Supporting BMCs to Strengthen their Electricity System to Facilitate Scale-up of RE and Interconnection

1.12 It is considered that scaling up of the investments in RE generation needs to be accompanied by increased flexibility and resilience of the national electricity systems. This, as the strength of the overall integrated electricity system would be dependent on the strength of the constituent elements. The increased flexibility and resilience of the national grids can be achieved through grid-hardening interventions and also increased contribution of storage. Although not the focus of this project, it is recognised that these aspects would need to be considered and catered for in the overall scope of the project.

Developing GE and Off-shore Wind Resources for Power-to-X and Cross-Border Power Exchange

1.13 The **GE potential** in BMCs in the Eastern Caribbean (EC) far outstrips the domestic demand. A conservative estimate is that there is in excess of 2000 MW of GE potential, which is approximately six times the combined peak demand for countries of the EC. Six of CDB's BMCs, *viz* Grenada, Dominica, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines and Montserrat with GE potential are now pursuing development of GE projects. The development in Dominica is most advanced, followed by that in St. Kitts and Nevis.

1.14 The strategy that has been pursued to date by these BMCs (with support from CDB and World Bank, under separate programmes) is to establish plants to supply the domestic market demand as a first phase, and then to pursue a second phase, which develops the excess resources to supply PtX opportunities, and to export through cross-border submarine transmission cables. In the context of the ASERT-2030 framework, however, and the emerging opportunities linked to the projected demand for green products necessary for the countries globally, to de-carbonise and achieve net-zero 2050 targets, CDB is leading efforts towards the proposed development of an interconnected grid as a transformative and catalytic contribution to realising the goal of resilient prosperity for the citizens of the Region. Both Dominica and St. Kitts and Nevis have embraced this broader vision:

- (a) St. Kitts and Nevis is pursuing a GE drilling project on the island of Nevis with an aim by 2026 to provide capacity of up to 30 Mw for domestic demand. This will also include the establishment of a transmission link between the islands of Nevis and St. Kitts, with capacity to export power to other countries. With an estimated reserve of at least 20 times current peak domestic demand, the aim is to accelerate supply for export and use as input for the production and export of green products like hydrogen and ammonia.
- (b) Dominica is establishing a power plant by 2026, with capacity of up to 10 MW to meet local domestic electricity demand, while exploring GE in the north of the island to support up to 200 MW power production for PtX and export.

1.15 The **offshore wind technical potential** in nine BMCs is estimated to be more than 20 times the combined peak electrical demand of all CDB's BMCs, based on the findings of a pre-feasibility study⁷ conducted by Inter-American Development Bank (IDB) and CDB. Barbados has completed pre-feasibility studies for offshore wind and is seeking to establish a plant within the next three years. CDB, IDB and World Bank are collaborating to support the de-risking of the offshore wind potential toward establishing offshore wind farms by 2030, building on the outputs of the aforementioned study.

1.16 The **hydropower potential** in Guyana has long been established. The government is currently pursuing a 165 MW hydropower project with funding already secured. Suriname also has significant installed hydropower capacity in excess of 150 MW.

Interconnection on Grids Through Submarine Transmission Lines

1.17 To fulfil multiple objectives, a critical strategy within the ASERT-2030 framework is that of supporting the integration of electricity grids through submarine transmission line interconnection. In addition to facilitating power exchanges to enhance regional energy security and increased resilience of the grids in BMCs, it will also allow for the scaling up of RE projects, allowing large-scale projects to be developed in countries where the RE resources are most available, and provide a pool of energy inputs at necessary scale and cost to propel economic diversification and increased productivity and competitiveness.

1.18 Interconnections may also enhance a country's resilience to hurricanes and the vagaries of climate change, allowing it to receive emergency support in the face of natural disasters or shortages. For some countries, access to emergency reserve power alone may provide significant justification for further pursuing interconnections. The potential climate-resilience benefits of interconnections could also open a window to access climate finance funds to support electricity sector development. Given the scale of projects in the Caribbean, even relatively small amounts of funds may have the potential to be transformative.

1.19 By increasing the role of local renewable resources, thereby diversifying the generation matrix and providing a means to access emergency reserve power, interconnections would also strengthen the security of the Region's electricity sector. Diversification and decreased dependence on imported oil will not only reduce costs, but countries will be less affected by swings in oil prices. Furthermore, through reliance on local regional resources and support for energy trade among countries, the use of interconnections has the potential to improve the stability of intraregional cooperation.

⁷ <https://publications.iadb.org/en/ocean-energy-caribbean-technology-review-potential-resource-and-project-locational-guidance>

1.20 Regional solutions offer the potential to reduce electricity costs and increase RE penetration, efficiency, security and climate resilience. Large-scale renewables development, however, require larger amounts of upfront capital than traditional single-island-based diesel generation. Interconnections could help reduce the unit capital costs of renewable plants through economies of scale. As part of its vision for a resourcing ecosystem framework, CDB proposes a multisource, multi-instrument ecosystem approach combining private financing, public/private partnerships and support from IFIs and the international development community.

1.21 It is projected that the inter-connection of grids will be implemented in a phased manner, beginning with the shorter intra-country and inter-country links on a voluntary basis by interested BMCs. This, with the perspective of further integration and increased efficiency of creating a regional wholesale electricity market in the longer term, contributing to a reduction of greenhouse gas emissions and in average wholesale price spreads and to enhanced security of supply in the region. It is noted that only one significant study in relation to interconnection was ever conducted in the Caribbean, viz: the World Bank sponsored study completed in 2010 “*Caribbean Regional Electricity Generation, Interconnection, and Fuels Supply Strategy*”⁸.

Initial Engagement among Countries and Partners

1.24 Led by its Sustainable Energy Unit (SEU), Economic Infrastructure Division, CDB has commenced the process of engagement of countries and partners on the concept of the Caribbean Regional Electricity Grid Interconnection and RE Scaling (CREGI-RES) project, in the context of regional dialogues, and has established that there is significant support. At the energy portfolio level, at least four BMCs have informally signal support for exploring the concept of CREGI-RES. Also, initially dialogue has been pursued to date with some regional and international partners, include the European Union (EU) Delegation in Barbados and the Eastern Caribbean, the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE), the SIDS-Lighthouse Initiative (SLI) of the International Renewable Energy Agency (IRENA), the Caribbean Climate Smart Acceleration (CCSA), the Organization of Eastern Caribbean States Commission (OECSC). CDB will formally invite selected partners to be represented in the Steering Committee to oversee and guide implementation of the CREGI-RES project.

1.25 Under the European Union Caribbean Infrastructure Fund (EU-CIF) Geothermal Risk Mitigation Programme, being implemented by CDB as part of its GeoSmart Initiative, funding support was identified for supporting studies for interconnection of electricity grids to facilitate the scaling-up of geothermal energy development in the Eastern Caribbean. It is intended that these resources will be tapped for initial studies for the CREGI-RES elements related to the Eastern Caribbean.

1.26 Continued multilateral dialogue on development of RE and regional interconnection is needed to facilitate engagement and stimulate cooperation. A Consultative Workshop Session of the “Strategic ASERT Partnerships for the Caribbean Electricity Grid Interconnection and SE Optimization” was conducted by IRENA, CDB, CCREEE and interested BMCs within Caribbean Regional Consultative Workshop “Development of the progress indicators and impact measures of the implementation of the SIDS Lighthouses Initiative Priority Areas” on 1 March 2024 in Kingston, Jamaica.

Engagement of Technical Advisory Support

1.26 In order to advance the process of development of the CREGI-RES project, it is necessary that critical research, studies and analyses be done to provide the relevant information for governments (BMCs and other countries), partners, potential investors to be engaged and to make relevant decisions. This also

⁸ <https://documents1.worldbank.org/curated/en/440751468238476576/pdf/594850Final0Report.pdf>

required that the outputs from the information gathering, and analyses also be shared in a timely manner. Against the background of the critical role that CDB needs to play in leading this large-scale intervention, the Bank recognizes the need to strengthen its own capacity. To this end, CDB is desirous of engaging a suitably qualified and experience consulting firm to provide technical advisory, guidance and initial assessments.

2 OBJECTIVE

2.01 The overall objective of this Consultancy is to support the efforts of BMCs to achieve ambitious renewable energy targets and improved resilience of the electricity systems, through development of the *Caribbean Regional Electricity Grid Interconnection and RE Scaling ASERTive*. This, in turn is intended to trigger exponential step-change in improved energy supply security, carbon emission reductions and potentially provide transformative economic opportunities towards achievement of BMCs' SDGs.

2.02 Specifically, technical advisory services will be provided to CDB for assessments, and for guiding, and coordinating the development of the CREGI-RES Project, which aims to promote integration of electricity systems across CDB's BMCs and other relevant Caribbean countries to facilitate improved grid resilience and optimised development of RE resources.

3 SCOPE OF SERVICES

3.1 Overall, the development of the CREGI-RES project requires, among other things, that a number of sub-strategies be developed and deployed both in parallel and sequentially:

- (a) ***Elaborating and sharing the vision:*** Development of the big picture, and roadmap and engaging of the countries and partners.
- (b) ***De-risking studies – resource and infrastructure requirement assessments***
- (c) ***Establishing cooperation among countries and electric utilities:*** Strategies to secure buy-in and cooperation.
- (d) ***Engagement of local, regional, and international partners.***
- (e) ***Mobilisation of funding resources:*** For resource assessments, de-risking, and investment.

3.04 It is proposed that a consulting firm, referred to as the ***Grid Interconnection and RE Scaling Advisor (GIRESA)*** will be recruited to make input and provide support and in some cases lead various aspects of the aforementioned strategies. The GIRESA will be the overarching advisor to lead the development phase of the CREGI-RES project and will also support implementation under a scope to be further defined. The firm will provide upfront scoping, development of roadmap as well as develop key studies whilst managing the process for the delivery of relevant other studies as part of the overall early-stage de-risking. GIRESA will provide technical guidance on engagements, to the working groups and assist with detailed elaboration of the stages/phases.

Key Tasks:

3.05 The key tasks include but are not limited to:

1. Develop the "Roadmap for Caribbean Regional Electricity Grid Interconnection and RE Scaling" (CREGI-RES) and prepare the desk study report that would include but not limited to the following tasks:

a. Definition of Regional Electricity Grid Interconnection Strategy:

- i. Outline the strategic steps and milestones for achieving Caribbean regional electricity grid interconnection and renewable energy scaling.
- ii. Identify timelines, key activities, and relevant internal and external stakeholders to guide the implementation of the initiative.

b. Stakeholder Engagement and Needs Assessment:

- i. Identify and engage key stakeholders, including government agencies, utilities, private sector entities, and local communities.
- ii. Conduct a needs assessment to understand the priorities, concerns, and expectations of stakeholders regarding the Caribbean regional grid interconnection and renewable energy scaling.

c. Regulatory and Policy Analysis:

- i. Conduct a thorough analysis of existing regulatory frameworks and policies related to the energy sector in the Caribbean region.
- ii. Identify the regulatory barriers and enablers for grid interconnection and renewable energy projects.
- iii. Provide recommendations for regulatory reforms to support the roadmap's objectives.

d. Assessment of Renewable Energy Resources and Techno-Economic Analysis:

- i. Perform a thorough review and assessment of existing data and studies related to renewable energy resources in the Caribbean region, including but not limited to, identifying suitable locations for utility-scale renewable power projects using solar, wind, hydro, geothermal and other potential sources.
- ii. Update and expand the assessment of renewable energy resources, considering technological advancements and emerging innovative solutions.
- iii. Conduct techno-economic analysis to evaluate the cost-effectiveness and potential benefits of different renewable energy technologies.

e. Assessment of T&D Infrastructure and Grid Integration Planning:

- i. Assess the existing electricity infrastructure in the Caribbean region, including the condition of transmission and distribution networks.

- ii. Develop strategies for grid integration, including the identification of potential interconnection points for cross-border power trade and the enhancement of grid resilience.
- iii. Identify key opportunities for export/import of electricity between countries, considering factors such as renewable resources, energy surpluses and deficits, economic feasibility, and regulatory frameworks.

f. Develop Financing and Investment Framework:

- i. Develop a financing and investment framework that outlines potential funding sources, financial instruments, and incentives to attract investments in grid interconnection and renewable energy projects.
- ii. Facilitate discussions with financial institutions and investors to gauge interest and explore partnership opportunities.

g. Analysis of Energy Demand Scenarios:

- i. Review and analyse historical energy demand trends and existing energy plans in the Caribbean region.
- ii. Develop future energy demand scenarios considering factors such as population growth, industrial development, and emerging technologies.
- iii. Estimate the necessary expansion of electricity production and national grid capacity by 2050, consolidating sub-Caribbean regional plans to provide a comprehensive overview.

h. Risk Assessment and Mitigation Plans:

- i. Conduct a comprehensive risk assessment, considering technical, financial, regulatory, and social risks.
- ii. Develop risk mitigation and contingency plans to address identified challenges during project implementation.

i. Project Timeline and Milestones Development:

- i. Create a detailed timeline with key milestones for the implementation of grid interconnection and renewable energy scaling projects.
- ii. Clearly outline the sequence of activities, dependencies, and critical path elements to ensure efficient project progression.

j. Environmental and Social Impact Analysis:

- i. Integrate environmental and social impact considerations into the roadmap, ensuring that projects adhere to sustainability standards and minimize adverse effects on communities and ecosystems.

k. Performance Monitoring and Evaluation:

- i. Establish a robust monitoring and evaluation framework to track the roadmap performance.
- ii. Define key performance indicators (KPIs) and metrics to measure the success of individual projects and the overall initiative.

l. Communication and Outreach Plan:

- i. Develop a communication and outreach plan to keep stakeholders and the public in the region informed about the roadmap progress.
- ii. Utilize various communication channels to disseminate information, address concerns, and build support for the initiative.

m. Legislative and Institutional Reforms:

- i. Identify necessary legislative and institutional reforms required to facilitate the implementation of the roadmap.
- ii. Collaborate with governments and relevant institutions to advocate for and enact necessary policy changes.

n. Capacity Building and Skills Development:

- i. Identify capacity gaps in the Caribbean region related to grid interconnection and renewable energy development.
- ii. Develop training programs and capacity-building initiatives to enhance the skills of local stakeholders, including government officials, project developers, and technical personnel.

2. Establish Working Groups (WGs) and Technical Advisory Support:

- a. Facilitate the creation of three Working Groups (WGs) on Renewables, Electricity Grid Interconnection, and Caribbean regional Market.
- b. Provide ongoing technical advisory support to these WGs during their operations, ensuring collaboration, knowledge exchange, and progress towards set goals.

3. Support and Provide Guidance for Pre-feasibility, Field, and FEED Studies:

- a. Assist in the development of pre-feasibility studies for identified grid interconnector links.
- b. Develop model terms of reference for field studies and establish clear guidelines for the permitting process within the Caribbean region.
- c. Facilitate the Request for Proposals (RFP) process for field studies, ensuring that the selected firms align with project goals.
- d. Facilitate the hiring of international consulting firms to conduct Front-End Engineering and Design (FEED) studies for each interconnector link, ensuring comprehensive analysis and planning.
- e. Provide ongoing guidance and oversight during the field and FEED studies to ensure compliance with project objectives and industry standards.

3.06 A **staged approach is contemplated** for the development phase which will allow relevant outputs to be delivered timely to facilitate engagement with various stakeholders including BMC governments technical officials, electric utilities, various agencies in countries, the political leadership in relevant countries, regional organizations (such as OECS and CARICOM). In this regard, it is contemplated that: an Initial High-level CREGI-RES Roadmap will be developed (as **Stage IA**), followed by a more detailed Roadmap (as **Stage IB**); and technical support be provided to the Working Groups (under **Stage II**); and support and guidance provided for pre-feasibility, field, and FEED Studies (Under **Stage III**):

Stage IA

1A: Prepare a High-Level Roadmap that would likely include:

- (i) High level renewable energies resource assessment
- (ii) Identification of interested priority countries.
- (iii) High level Analysis demand scenarios, energy and investments plans.
- (iv) Identify high-level export/import potential for cross-border power trade in the Region.
- (v) Identify priority subsea interconnector links with high level related cost benefit analysis.
- (vi) The GIRESA would perform initial country visits and initial engagements to collect data, information and meet with the national authorities of the interested countries.

Stage IB

1B: Deliver the “Detailed Roadmap for CREGI-RES”; and support CDB and partners to facilitate the buy-in, and commitment by the States via Declaration

The GIRESA would perform further country visits to collect data, information and meet with the national authorities of the interested countries, as well as to engage in regional level fora/dialogues to collectively engage countries and partners. A Steering Committee (to be established) would facilitate the meetings between the GIRESA and the Ministries. Based on the country visits, the draft roadmap would be prepared.

Stage II

2: Provide technical support for the Working Groups

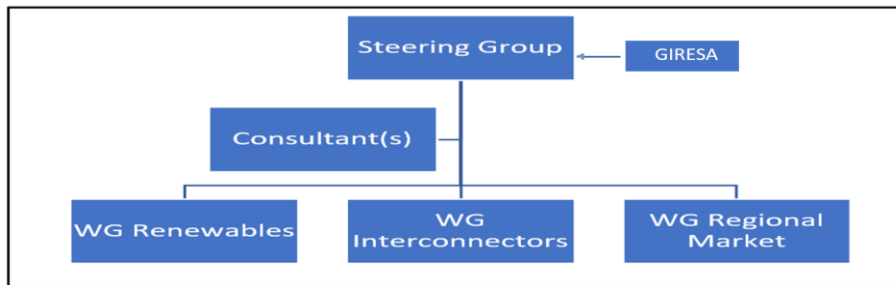
Note: *Also Stage II may overlap and be pursued partially in parallel with Stage IB*

It is proposed that there will be three stakeholder engagement workshops. The Steering Committee would support participating countries to establish three Working Groups (WGs), see Figure 1. The WGs would require support of GIRESA on:

- (a) Development and integration of large-scale renewable energy projects and sustainable energy optimisation.
- (b) Development and construction of subsea interconnector links among interested states to be eventually integrated in a regional grid.

- (c) Development and realisation of a regional power market.

Organization for Managing Technical Studies for CREGL-RES Project



The GIRESA would support the preparation of TORs with dedicated scope for each Working Group in a timely manner. Subject to availability of resources Steering Committee members will provide stakeholder capacity building for the WGs. The WGs would develop a list of prioritisation criteria and select projects (renewables and interconnectors) of common interest.

Stage III

3: Support and Provide Guidance for Pre-feasibility, Field, and FEED Studies

Note: CDB may activate the scope for the Stage III (under this Consultancy) subject to good performance of the GIRESA under the Stages 1 and 2 and subject to decision of the interested BMCs to establish Working Groups. The technical and price proposals when requested from shortlisted firms, will be based on Stage I and II only; Eventually the contract will be extended to include Stage III if activated.

The GIRESA will:

- a. Assist in identifying the various relevant pre-feasibility, field and FEED Studies, and support the development of pre-feasibility studies for identified grid interconnector links.
- b. Develop model terms of reference for field studies and establish clear guidelines for the permitting process within the Caribbean region.
- c. Facilitate the Request for Proposals (RFP) process for field studies, ensuring that the selected firms align with project goals.
- d. Facilitate the hiring of international consulting firms to conduct Front-End Engineering and Design (FEED) studies for each interconnector link, ensuring comprehensive analysis and planning.
- e. Provide ongoing guidance and oversight during the field and FEED studies to ensure compliance with project objectives and industry standards.

4. REPORTING REQUIREMENTS

Key Deliverables

- 4.01 The GIRESA will be responsible for the following key activities, documents and reports to the responsible officer within CDB’s SEU:

| Description | Estimated Schedule (By When) |
|-------------|------------------------------|
|-------------|------------------------------|

| Stage IA | | |
|-------------------------------|---|--|
| (a) | <p>(i) Draft Inception Report that would include outline of approach to the assignment</p> <p>(ii) Final Inception Report</p> | <p>August 15, 2024</p> <p>Within 10 days after comments from CDB</p> |
| (b) | <p>High Level CREGI-RES Roadmap - includes among other things:</p> <ul style="list-style-type: none"> • High level RE resource assessment • High level Analysis demand scenarios, energy and investments plans to estimate expansion of electricity production and national grid capacity • High level export/import potential for cross-border power trade in the Region | <p>September 30, 2024</p> |
| Stages IB and Stage II | | |
| (c) | <p>Draft detailed CREGI-RES Roadmap:</p> <ul style="list-style-type: none"> • Based on country visits draft Roadmap as sharing the vision for CREGI-RES to be presented in person at 4 hours facilitated workshop attended by the Steering Committee members and interested BMCs at CDB HQ that would include, among other things: <ul style="list-style-type: none"> (i) A list of interested countries and priority subsea interconnector links with related cost benefit analysis. (ii) Identified specific export / import potential per country. (iii) Identified detailed scope for pre-feasibility studies for each interconnector link and prepare respective TORs (up to three ToR). (iv) Identified challenges and provide recommendations for specific actions (technical, market, economic, institutional, regulatory, political, legal, etc.) towards creating a sustainable regional power market integration. (v) Detailed analysis on demand scenarios, risks, energy and investments plans to estimate expansion of electricity production and national grid capacity in the Caribbean region by 2050 (designed optimisation-based expansion scenarios that revealed detailed prospects of various cross-border interconnectors). (vi) Communication plan, performance monitoring and evaluation framework; Environmental and social (vii) Prepared scope for stakeholder capacity building based on the country needs. (viii) Outlines key milestones and actions to advance realisation of the CREGI-RES project. | <p>November 2024 (specific date tbc)</p> |
| | <p>Draft Roadmap, to be:</p> <ul style="list-style-type: none"> • Endorsed by Steering Committee (including relevant BMCs). | |

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|--|---|---|
| | <ul style="list-style-type: none"> Presented at side-event at COP29 in Baku, Azerbaijan, as part of resource mobilization | |
| Stage IB and Stage II | | |
| (d) | <p>(i) Finalized Roadmap</p> <ul style="list-style-type: none"> To be endorsed by OECSC and CARICOM Endorsed by IRENA <p>(ii) Draft TORs for Working Group</p> <p>(iii) Final ToRs for Working Group</p> <p>(iv) Support up to 12 meetings (4 sets x 3) of Working Groups</p> <p>(v) Report on development of CREGI-RES Project through Stages-I-II</p> | <p>Tentative January 10, 2025</p> <p>Within 15 days after comments from CDB</p> <p>January – November 2025</p> <p>November 2025</p> |
| Stage III (Contingent Stage - under this Consultancy) | | |
| (f) | Report: Identifying the various relevant pre-feasibility, field and FEED Studies, and including model terms of reference for field studies; and clear guidelines for the permitting process within the Caribbean region. | 2025, Month tbc |
| (g) | Request for Proposals (RFP) document for field studies. | 2025, Month tbc |
| (h) | Evaluation Report for Selection of field studies consultants | 2025, Month tbc |
| (i) | Supervision Reports for field studies consultants | 2026-2027; Months tbc |

5. IMPLEMENTATION ARRANGEMENTS

5.01 The GIRESA will work remotely and also work from CDB office for portions of the schedule as deemed necessary to engage and meet with CDB staff and representatives from countries and regional organizations. The GIRESA will also be required to visit various CDB BMCs especially in the Eastern Caribbean to collect information, meet with various stakeholders (including the Working Groups (“Optional Scope”)) and for workshops as deemed necessary. The GIRESA shall report to the Sustainable Energy Specialist, his designated representative.

5.02 The GIRESA will prepare all reports and ToRs in English. The electronic versions of the reports and ToRs shall be provided in both MS Word and PDF formats. The GIRESA shall provide CDB with the final electronic version of all source files under self-explanatory file names and directory structure (including data collected, spreadsheets and models etc.).

5.02 The GIRESA will organize and participate in the workshops under guidance of CDB.

6. QUALIFICATIONS AND EXPERIENCE

6.01 GIRESA firm will have expertise and strong experience (more than 10 years) in the range of key services required to carry out the scope of work under this TOR with experience in energy policy, electricity transmission and distribution network, subsea interconnectors, renewable energy development, energy policy, energy economics and electricity market development, and financial management, electricity sector regulation, PPP, social disciplines, and capacity development. In addition, the team will have relevant regional experts from the Caribbean region in the area of energy policy/regulations, public private partnership (PPP) and gender.

6.02 GIRESA will determine and propose the number and the nature of experts required to deliver the technical advisory services. CDB contemplates however, that the GIRESA team would include (but not limited to) the following key experts (i) team leader/ technical advisor on power system & transmission planning (international), (ii) transmission planning specialist (regional), (iii) deputy team leader/renewable energy expert (international), (iv) energy economist / financial analyst (international), (v) power sector policy/regulatory and market expert (international), (vi) PPP Expert (regional), and (vii) Gender specialist (regional).

6.03 To facilitate the evaluation of *expressions of interest*, the GIRESA will need to indicate the qualifications and experience of the firm. That is, the years of expertise, and or the number of projects completed by the firm, including brief description of the experience.

6.04 **Key experts will not be evaluated at this *expression of interest* stage, but when the short-listed firms are invited to submit full proposal.**