

CARIBBEAN DEVELOPMENT BANK

GEOTHERMAL RISK MITIGATION FOR THE EASTERN CARIBBEAN PROGRAMME CONSULTANT – CARIBBEAN INVESTMENT FACILITY MID-TERM EVALUATION

DRAFT TERMS OF REFERENCE

1. BACKGROUND

1.01 In November 2017, the Caribbean Development Bank (CDB) and European Commission signed a Delegation Agreement (DA) confirming the contribution of funds from the European Union Caribbean Investment Facility (EU-CIF) towards the Geothermal Risk Mitigation (GRM) for the Eastern Caribbean Programme (the Programme).

1.02 The DA requires that a mid-term evaluation (MTE) be conducted at the execution midpoint, upon disbursement of 50% of the EU-CIF resources (USD6,175,000) or after 2.5 years from the first disbursement, whichever comes first.

1.03 The overall objective of the Programme is to facilitate geothermal energy (GE) development in up to five Eastern Caribbean (EC) countries¹, through the mitigation of risk and removal of barriers. It is estimated that collectively, up to 60 megawatts (MW) of GE baseload capacity could be established in the first instance, which would displace the equivalent fossil fuel generation, and contribute to:

- (a) reducing dependence on imports of oil products for electricity generation;
- (b) stabilising and/or reducing electricity prices (currently indexed to fuel prices), and contributing to the sub-region's energy security; and
- (c) reducing emissions of greenhouse gases and local pollutants.

1.04 The over-reliance on imported fuel presents several challenges for the five EC countries. Price volatility in the international oil market undermines economic stability and national efforts for long-term planning. In addition, a significant portion of foreign exchange earnings is used to pay for imported fuel, affecting foreign exchange reserves and the balance of payments.

1.05 Further, the cost of imported diesel has been a key factor contributing to high electricity prices in the EC countries over the years. The relatively high electricity costs over time have negatively affected the countries' economic competitiveness and the livelihood of citizens, especially the poorer segments of the population.

1.06 In view of these challenges, the EC countries are seeking to harness their renewable energy (RE) resources, which are mainly solar energy, wind power, hydropower, and GE. This is a major step in the process of breaking fuel-import dependence, diversifying energy matrices, and improving energy security. RE substitution will also contribute to electricity price stabilisation (and possibly reduction), improve economic competitiveness, and contribute to carbon emission reduction targets. Of the RE options available, GE development have been prioritised because GE provides baseload generation, which potentially could displace more than half, the diesel fuel consumption of conventional power generation. GE development is therefore a critical component of the EC countries' strategy to achieve energy sector transformation. However, there are key barriers, which constrain the development of GE.

^{1/} Dominica, Grenada, St Kitts and Nevis, Saint Lucia, St Vincent and the Grenadines

1.07 The most critical of these barriers is the absence of appropriate forms of financing or risk mitigation mechanisms required for the various stages of the GE project cycle. In the early exploration stage (surface studies, slim-hole drilling) when the risk is highest, grant resources are needed. On the other hand, with the exploratory drilling of full size wells, contingently recoverable grant resources are appropriate, and for drilling of production and re-injection wells, as well as steam systems and plant installation, concessional loans are required.

1.08 In addition, the potential GE developments lack economies of scale (being pursued in small isolated markets) are relatively capital intensive and exhibit very high resource risk in the exploratory stage, compared to other RE options. Other critical constraints on the part of governments and potential developers, also acting as barriers are the limited access to credit at appropriate terms, the lack of fiscal space to undertake additional debt and the lack of experience and specialised technical skills necessary for successfully developing GE projects.

1.09 In order to address most of these barriers and to allow GE to be delivered at the lowest cost to the end user, CDB is pursuing the GeoSmart Initiative (CDB-GSI) to support the five EC countries. CDB-GSI is mobilising adequate and appropriate resources to address the various levels of risk at each stage of the GE project cycle, and to enhance the viability of these small-scale GE developments. As part of this resource mobilisation effort, CDB made an application to the EU-CIF for a grant contribution to the “Geothermal Risk Mitigation Programme for the Eastern Caribbean”, and received approval for EUR12 million (mn). These resources are complementing other resources already secured under the Sustainable Energy Facility for the Eastern Caribbean, which is being pursued by CDB with the Inter-American Development Bank, and from the United Kingdom Department for International Development.

1.10 The Programme will provide appropriate financing for technical assistance and investment to address the various risks and barriers (identified at paragraphs 2.04 and 2.05) to GE development and contribute to the installation of up to 60 MW of GE capacity in the five EC countries.

1.11 Under the Programme, funding is available for all stages of GE project development, however these funds will be provided on a demand basis. Funds will be provided for exploratory drilling (slim-hole and full sized wells), production drilling, and plant construction. Some funding will also be provided to support capacity strengthening and establishment of appropriate legislative and regulatory frameworks for GE development. Given that most of the countries are at the exploratory stage of GE development, grant funding is required at this stage.

1.12 The EU-CIF resources are being used to provide investment grants to supplement risk capital at the exploratory phase, and technical assistance grants for supporting capacity building initiatives and interconnection studies. The EU-CIF Contribution addresses critical gaps in the Programme and comprises two components: Component I – Investment Grants and Component II – Technical Assistance Grants and include EUR0.3 mn to cover the costs of an audit, evaluation and visibility.

1.13 **Component I – Investment Grants.** The EU-CIF contribution of EUR9.5 mn will provide grants to co-finance investments in the highest-risk early stage to catalyse GE development in at least three of the five EC countries. Other donors will also contribute to this stage, however, the current gap for resources is deemed to be the most critical for the projects in the EC countries.

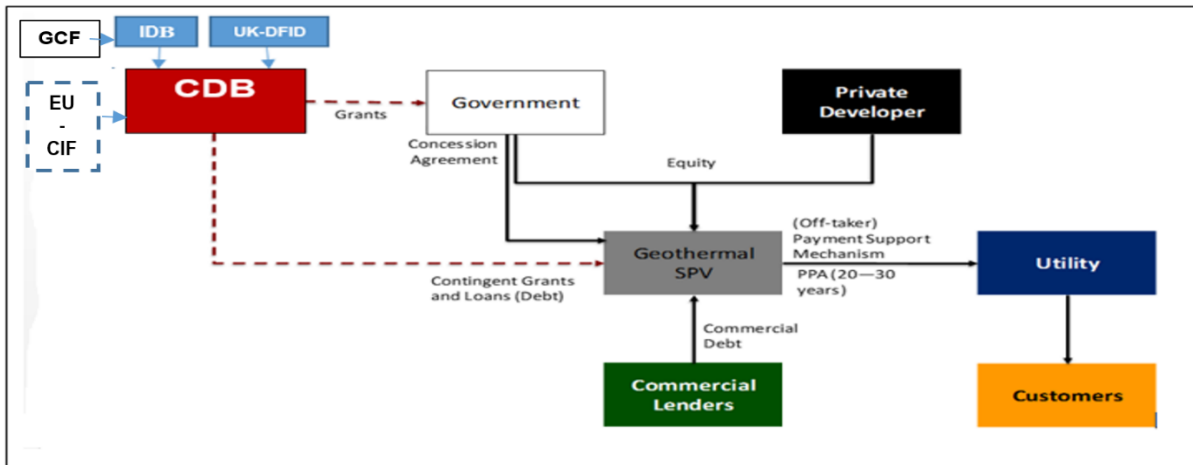
1.14 The grants are applied to the slim-hole drilling services or full-size exploration-drilling contract. If executed by a Special Purpose Vehicle (SPV) for GE projects, the grant will be accounted for as government’s equity, and if executed by government it forms equity input to the SPV in each of the projects. CDB’s disbursement procedures allow for direct payment to the contractor.

1.15 By having a grant-funded equity stake in an SPV, governments can substantially reduce the risk associated with early GE development. In addition, if more grant or contingent grant funding is made available, the more costly developer equity injection could be delayed, thus lowering the generation cost of energy to the final consumer.

1.16 **Component II – Technical Assistance Grants.** A CIF contribution of EUR2.5 mn will finance capacity strengthening and interconnection feasibility studies.

- (a) **Capacity Strengthening.** Grant-funded technical assistance in an amount of EUR1.2 mn would be available to build government capacity to develop and manage geothermal projects. Through these capacity-building interventions, a cadre of technical officials will be developed who are capable of making critical decisions and managing issues related to GE development. This component will complement and expand available resources for human and institutional capacity strengthening.
- (b) **Feasibility Study – Submarine Interconnection of Electricity Grids.** CDB would use these resources to commission pre-feasibility and feasibility studies, where indicated, on interconnection options for the export of electricity generated from GE. EUR1.0 mn would contribute to a study on interconnection options to expand the GE market. EUR0.4 mn will be used to conduct a regional pre-feasibility study of interconnection options that are potentially viable, technically and economically. Governments would be able to apply to CDB to use the remaining EUR0.6 mn for detailed feasibility studies on potentially viable interconnections.

Figure 1: Structure for Programme Implementation



2. OBJECTIVE OF CONSULTANCY

2.01 The objectives of the consultancy are to establish the relevance, effectiveness and efficiency of the Programme to date, to identify lessons and to make recommendations for the remaining duration of the Programme.

2.02 The Consultant will conduct the MTE of the Programme. The evaluation’s main goals are to:

- (a) determine the extent to which the objectives (outputs, outcomes and impacts) as defined in the results framework have been met as of the date of the evaluation, and assess the likelihood of achieving them upon project completion;
- (b) assess the factors that have affected outcome achievement, e.g. project design, project linkages with other activities, extent and materialisation of co-financing, and stakeholder involvement;
- (c) identify CDB's institutional strengths and weaknesses as the implementing agency of the project; and
- (d) provide a few well-formulated lessons that are based on the project experience so far and applicable to the type of project at hand.

2.03 In addition, the evaluation will provide recommendations to improve the execution of the Programme and thus the likelihood of achieving its development objectives. Recommendations should be well formulated, targeted and should discuss the need for action. The recommended actions should be clearly stated, along with their likely consequences, vis-à-vis status quo and other courses of action, the specific actors that need to take the action, and period for it.

3. MIDTERM EVALUATION QUESTIONS

3.01 Based on Organisation for Economic Cooperation and Development, Development Assistance Committee criteria, the MTE will take into consideration the programme's continued relevance, efficiency levels, effectiveness and coherence. The overall evaluation will be assessed against the EU's Evaluation Quality Assessment Grid (Appendix I). In this context, the evaluation will assess project outcomes on the following dimensions specifically:

- (a) Changes in context and review of assumptions (relevance). Is the project's design adequate to address the problem(s) at hand? What internal and external factors have influenced the ability of beneficiary groups and executing agency to meet projected targets? Does the project remain relevant considering possible changes in context? Is there a need to reformulate project design given changes in the country, sector, or operational context?
- (b) Results in terms of outputs achieved vis-à-vis projected targets (efficiency). Assess achievement of outputs, and the degree to which the programme is expected to attain the expected results as stated in the documents submitted for Global Environment Facility approval of the programme. Has the programme reached the expected number of beneficiaries (i.e., individuals, firms, industries, etc.) within the expected time frame? Are the programme's activities in line with the schedule of activities as defined by the programme team and annual action plans? Are the disbursements and programme expenditures in line with expected budgetary plans?
- (c) Achievement of projected performance indicators and targets (effectiveness). What has the performance been of the executing agency with respect to their projected performance indicators? Does the current performance indicate probability in achieving the programme's purpose (specific objective)? Have there been any unplanned effects? Recommendations for improving the execution of the Programme should be provided if deemed necessary.

- (d) Preliminary assessment of outcome/impact (effectiveness). Has the Programme generated any results that could indicate that the assistance has had an impact on the operation's target beneficiary group?
- (e) Programme compatibility with other similar interventions in the five countries the programme is working in (coherence). Is the Programme consistent and complimentary with other institutional or government interventions or is it unnecessarily repetitive? How is it harmonised or coordinated with other actors' interventions?
- (f) A suggested outline for the MTE is attached at Appendix II.

4. METHODOLOGY

4.01 Scope. The analysis is expected to cover all five countries involved in the Programme. The Consultant is expected to design and implement a robust evaluation of GRM Programme to answer the evaluation questions and inform the MTE's intended uses.

4.02 Results framework. The MTE will be guided by the Programme's results framework and theory of change, which details the Programme's hypothesised causal logic.

4.03 Document review. Review archived material related to the overall Programme, as well as background material used in project preparation, approved project documents, project monitoring documents, disbursement reports, progress reports, action plans, and other information available at CDB.

4.04 Monitoring data generated from CDB's monitoring system is another source of information. Information from national statistics institutions could also be considered.

4.05 Field visits² and interviews. It is expected that the consultancy will require a combination of field visits, face-to-face interviews, online and phone interviews. For each of these interviews, the Consultant should first develop and present their ideas for the content and format of the survey/interview forms that will be applied to capture the information required, as well as the method to be used in administering them and tabulating the results. Suggested activities are as follows:

- (a) in situ visits in the countries of the Programme to carry out in depth interviews, inspection and analysis of the project activities;
- (b) phone/online interviews and performance data surveys of institutions in countries not visited in person;
- (c) interviews with CDB and EU staff who participated in the Programme design and execution;
- (d) interviews with local stakeholders (country focal points, government representatives, regional associations, private sector representatives and final beneficiaries); and
- (e) interviews with a sample of consultants and/or technical assistance providers who were hired by CDB or participating governments.

4.06 The Consultant may propose additional methods and sources of data collection.

² Where and when possible given the prevailing Covid-19 restrictions.

5. CHARACTERISTICS OF THE CONSULTANCY

5.01 **Reporting.** The Consultant will report to the Head, Renewable Energy and Energy Efficiency Unit, CDB, or to an officer designated by the Head.

5.02 **Duration and Location.** The Consultant will be offered a fixed-price contract for 35 person-days spread over a period of four months. The consultancy is expected to commence in August 2020. The Consultant will work out of their home location, with travel (estimated at around 7 days in total³) to Barbados, and St. Vincent and the Grenadines.

6. KEY TASKS AND ACTIVITIES

6.01 The Consultant will carry out key tasks and activities described below under the following phases.

6.02 **Inception Phase.** The Consultant will produce an Inception Report based on initial document review and preliminary interviews with CDB and/or EU staff. The report will describe the proposed design for the MTE based on the project's results framework, including: the overall approach, scope and sampling (countries to be visited, persons to be interviewed), specific evaluation questions, methods, sampling, data collection and analysis plan, draft interview or survey instruments, calendar of activities, and travel plans (if feasible). An Evaluation Matrix should be used to summarise the questions, methods, collection, timing and location. The Inception Report should be presented to CDB for review and approval.

6.03 **Data Collection and Analysis Phase.** Execution of the evaluation in accordance with the Inception Report and evaluation design. This will include travel to or other means of interaction with specified countries, interviews, data collection and analysis. At the end of this phase, the Consultant will lead validation meetings clarification of preliminary findings will be supported by the CDB and/or EU team.

6.04 **Evaluation Report Phase.** The Consultant will present a draft Evaluation Report and Power Point presentation to CDB for review, three months after commencement of activities. A final report will then be submitted two weeks after receiving feedback from CDB on the draft.

6.05 **Final Presentation.** Submission of a final report is to be followed by a presentation of the evaluation results to CDB, EU and representatives of participating countries via conference call or videoconference. Any updates to the Evaluation Report arising from comments and feedback received during the presentation of results to CDB and the Consultant will incorporate EU. See Appendix II for suggested outline for the Report.

7. KEY DELIVERABLES AND SCHEDULE

7.01 At the beginning of the contract, the Consultant will develop a timetable with expected deliverables and dates. This will form an input to, and will be validated by the acceptance of the Inception Report.

³ Provided there are no travel restrictions due to Covid-19

The key deliverables are listed in the table below:

Item	DELIVERABLES	SCHEDULE: Delivered by:
1.	(a) Draft Inception Report	2 weeks after commencement of activities.
	(b) Final Inception Report	1 week after draft feedback received.
2.	(a) Draft Evaluation Report	3 months after commencement of activities.
	(b) Final Evaluation Report	2 weeks after draft feedback received.
3.	Presentation of evaluation results	4 months after commencement of activities.

8. QUALIFICATIONS AND EXPERIENCE

8.01 The Consultant should have at minimum the following qualifications and experience:

- (a) a Master's degree in a relevant field, such as: RE, climate change, environmental or relevant discipline in sustainable development;
- (b) demonstrated knowledge of (or certification in) current evaluation theory and practice;
- (c) a minimum of eight years' experience in evaluating development projects, preferably those that are related to the field of sustainable energy development and capacity development;
- (d) experience in evaluation of development projects funded by multilateral institutions or international organisations;
- (e) in-depth knowledge of sustainable energy development in the context of Small Islands Developing States;
- (f) a good understanding of the countries of Dominica, Grenada, St. Kitts and Nevis, Saint Lucia and St. Vincent and the Grenadines, is considered an asset; and
- (g) excellent command of English (both written and oral form).

QUALITY ASSESSMENT GRID

The quality of the Final Report will be assessed by the Evaluation Manager (since the submission of the draft Report and Executive Summary) using the following quality assessment grid, which is included **in the Evaluation Module**; the grid will be shared with the evaluation team, which will have the possibility to include their comments.

Intervention (Project/Programme) evaluation – Quality Assessment Grid Final Report			
Evaluation data			
Evaluation title			
Evaluation managed by		Type of evaluation	
Ref. of the evaluation contract		EVAL ref.	
Evaluation budget			
EUD/Unit in charge		Evaluation Manager	
Evaluation dates	Start:		End:
Date of draft final report		Date of Response of the Services	
Comments			
Project data			
Main project evaluated			
CRIS/OPSYS # of evaluated project(s)			
DAC Sector			
Contractor's details			
Evaluation Team Leader		Evaluation Contractor	
Evaluation expert(s)			

Legend: scores and their meaning

Very satisfactory: criterion entirely fulfilled in a clear and appropriate way

Satisfactory: criterion fulfilled

Unsatisfactory: criterion partly fulfilled

Very unsatisfactory: criterion mostly not fulfilled or absent

The evaluation report is assessed as follows

1. Clarity of the report

This criterion analyses the extent to which both the Executive Summary and the Final Report:

- Are easily readable, understandable and accessible to the relevant target readers
- Highlight the key messages
- The length of the various chapters and annexes of the Report are well balanced
- Contain relevant graphs, tables and charts facilitating understanding
- Contain a list of acronyms (only the Report)
- Avoid unnecessary duplications
- Have been language checked for unclear formulations, misspelling and grammar errors
- The Executive Summary is an appropriate summary of the full report and is a free-standing document



Strengths	Weaknesses	Score
Contractor's comments	Contractor's comments	

2. Reliability of data and robustness of evidence

This criterion analyses the extent to which:

- Data/evidence was gathered as defined in the methodology
- The report considers, when relevant, evidence from EU and/or other partners' relevant studies, monitoring reports and/or evaluations
- The report contains a clear description of the limitations of the evidence, the risks of bias and the mitigating measures





Strengths	Weaknesses	Score
Contractor's comments	Contractor's comments	


3. Validity of Findings

This criterion analyses the extent to which:

- Findings derive from the evidence gathered
- Findings address all selected evaluation criteria
- Findings result from an appropriate triangulation of different, clearly identified sources



<ul style="list-style-type: none"> When assessing the effect of the EU intervention, the findings describe and explain the most relevant cause/effect links between outputs, outcomes and impacts The analysis of evidence is comprehensive and takes into consideration contextual and external factors 		
Strengths	Weaknesses	Score
Contractor's comments	Contractor's comments	
4. Validity of conclusions		
This criterion analyses the extent to which:		
<ul style="list-style-type: none"> Conclusions are logically linked to the findings, and go beyond them to provide a comprehensive analysis Conclusions appropriately address the selected evaluation criteria and all the evaluation questions, including the relevant cross-cutting dimensions Conclusions take into consideration the various stakeholder groups of the evaluation Conclusions are coherent and balanced (i.e. they present a credible picture of both strengths and weaknesses), and are free of personal or partisan considerations (If relevant) whether the report indicates when there are not sufficient findings to conclude on specific issues 		
Strengths	Weaknesses	Score
Contractor's comments	Contractor's comments	
5. Usefulness of recommendations		
This criterion analyses the extent to which the recommendations:		
<ul style="list-style-type: none"> Are clearly linked to and derive from the conclusions Are concrete, achievable and realistic Are targeted to specific addressees Are clustered (if relevant), prioritised, and possibly time-bound (If relevant) provide advice for the Intervention's exit strategy, post-Intervention sustainability or for adjusting Intervention's design or plans 		
Strengths	Weaknesses	Score
Contractor's comments	Contractor's comments	

6. Appropriateness of lessons learnt analysis (if requested by the TOR or included by the evaluators)		
<p>This criterion is to be assessed only when requested by the TOR or included by evaluators and is not to be scored. It analyses the extent to which:</p> <ul style="list-style-type: none"> Lessons are identified When relevant, they are generalised in terms of wider relevance for the institution(s) 		
Strengths	Weaknesses	
Contractor's comments	Contractor's comments	
Final comments on the overall quality of the report		Overall score

OUTLINE FOR MID-TERM EVALUATION REPORT (SUGGESTED/INDICATIVE)

1. **Executive Summary:**
 - 1.1 Project Information Table
 - 1.2 Project Description
 - 1.3 Project Progress Summary
 - 1.4 Ratings Summary Table
 - 1.5 Summarised Conclusions
 - 1.6 Summarised Recommendations

2. **Introduction:**
 - 2.1 Objectives of the MTE
 - 2.2 Scope and Methodology (design/general approach, sources of data, limitations)
 - 2.3 Project Overview and Context
 - 2.4 Main Stakeholders
 - 2.5 Problems addressed by the Project
 - 2.6 Project Description and Strategy
 - 2.7 Project Implementation Arrangements

3. **Findings:**
 - 3.1 Changes in Project Context and Review of Assumptions
 - 3.2 Summary of log frame and comments on its design
 - 3.3 Validity of Project logic
 - 3.4 Continued Project relevance
 - 3.5 Management and Coordination
 - Capacity of Executing Agency to identify problems
 - Capacity of Executing Agency to analyse and propose solutions
 - 3.6 Problems in Project Implementation
 - 3.7 Updated risk analysis

4. **Assessment of Progress against Plan:**
 - 4.1 Management of Project inputs
 - Monitoring process/procedures and quality control
 - Costs and cost controls (efficiency vis-à-vis initial project budget)
 - 4.2 Financial progress
 - 4.3 Progress and Achievement of Project Outcomes
 - Planned and actual to date
 - Implications of any shortfalls
 - 4.4 Progress in the Execution of Outputs
 - 4.5 Implications for Project Continuation/Reformulation (including log frame)

5. **Conclusions and Recommendations:**
 - 5.1 Measures to Increase Performance
 - 5.2 Lessons Learned:
 - Operational Performance
 - Development Performance
 - 5.3 Success factors (executing agency capacity, institutional framework, stakeholder commitment, etc.) that need to be met ex-ante to consider supporting similar projects in the future