

PMR Operational Report

| | | | |
|-----------------------------|----------|---|--|
| Operation Number | RG-L1112 | Chief of Operations Validation Date | |
| Year- PMR Cycle | | Division Chief Validation Date | |
| Last Update | | Country Representative Validation Date | |
| PMR Validation Stage | | | |

Basic Data

Operation Profile

| | | | |
|---------------------------|---|---|--|
| Operation Name | Sustainable Energy Facility (SEF) for the Eastern Caribbean EXPANDED - (SEF EXPANDED) | Loan Number | 4712/GN-RG |
| Executing Agency | CARIBBEAN DEVELOPMENT BANK | Sector/Subsector | EN-INS - ENERGY-ENERGY INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING |
| Team Leader | GISCHLER BLANCO, CHRISTIAAN | Overall Stage | Approved/Pending Signature |
| Operation Type | Loan Operation | Country | REGIONAL |
| Lending Instrument | Investment Loan | Convergence related Operation(s) | |
| Borrower | CARIBBEAN DEVELOPMENT BANK | | |

Environmental and Social Safeguards

| | | | |
|---|--|--|----|
| Impacts Category | B13 | Was/Were the objective(s) of this operation reformulated? | NO |
| Safeguard Performance Rating | Partially Satisfactory | Date of approval | |
| Safeguard Performance Rating - Rationale | While CDB staff are experienced in environmental and social risk management, there is limited geothermal experience and furthermore, physical supervision of works is slow and shows areas that are not being fully identified and/or corrected. In the case of St. Vincent (subproject in execution), the social aspects of the program have been well implemented (if not a little slowly) however environmental monitoring by the executing agency had not been fully implemented despite the fact that drilling began 6 months ago. This was not flagged previously by CDB. Furthermore, CDB E&S specialists are unable to maintain the pace required for some of the projects, for example the ESIA for Nevis (project in preparation) was not reviewed by E&S specialists for 5 months, who according to the ROP should take the lead and submit to IDB, rather than vice versa. | | |

Financial Data

| Item | Total Cost and Source | | | | | Available Funds (US\$) | | | |
|------|-----------------------|-------------|-------------------|------------------------|---------------------|------------------------|----------------------|--------|--------------------|
| | Original IDB | Current IDB | Local Counterpart | Co-Financing / Country | Total Original Cost | Current IDB | Disb. Amount to Date | % Disb | Undisbursed Amount |

Expense Categories by Loan Contract (cumulative values)

Please note that inactive indicators and outputs are not displayed; totals in the actual cost table may not match the sum of the cost of the outputs displayed, due to the cost of inactive outputs.

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IMPACTS

Impact Nbr. 1: Financing from other sources (e.g. commercial banks, private equity) leveraged by this program

Observation: Funding from all sources including IDB, CTF and GEF funds approved under SEF-2015

| Indicator | | Unit of Measure | Baseline | Baseline Year | | EOP 2027 |
|------------|--|-----------------|----------|---------------|------|----------|
| 1.0 | Financing from other sources leveraged by this program | US\$ millions | 15.00 | 2015 | P | 535.00 |
| | | | | | P(a) | 535.00 |
| | | | | | A | |
| Details | | | | | | |
| Pro-Gender | No | | | Pro-Ethnicity | No | |

Impact Nbr. 2: Imports of fossil fuels for electricity generation avoided by geothermal projects in the ECC

Observation: IDB estimations made following IDB methodology, based on installed capacity, electricity generation to be provided in EA reports based on information from governments and utilities in ECC, and an average conversion factor (ex post CBA). Final calculations to be checked with the utilities and the governments in the ECC.

| Indicator | | Unit of Measure | Baseline | Baseline Year | | EOP 2027 |
|------------|--|-------------------------|----------|---------------|------|----------|
| 2.0 | Imports of fossil fuels for electricity generation avoided by geothermal projects in the ECC | Thousand barrels of oil | 0.00 | 2015 | P | 722.00 |
| | | | | | P(a) | 722.00 |
| | | | | | A | |
| Details | | | | | | |
| Pro-Gender | No | | | Pro-Ethnicity | No | |

Impact Nbr. 3: Greenhouse Gas (GHG) emissions avoided by geothermal projects in the ECC

Observation: IDB estimations made following IDB methodology, based on installed capacity, electricity generation to be provided in EA reports based on information from governments and utilities in ECC, and an average conversion factor (ex post CBA). Final calculations to be checked with the utilities and the governments in the ECC.

| Indicator | | Unit of Measure | Baseline | Baseline Year | | EOP 2027 |
|------------|---|-----------------|----------|---------------|------|----------|
| 3.0 | GHG emissions avoided by geothermal projects in the ECC | ktCO2e/yr | 0.00 | 2015 | P | 313.40 |
| | | | | | P(a) | |
| | | | | | A | |
| Details | | | | | | |
| Pro-Gender | No | | | Pro-Ethnicity | No | |

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IMPACTS

Impact Nbr. 4: Regional penetration of indigenous RE sources for power generation within the ECC

Observation: Based on capacity installed (MW) as per the utilities' reports (e.g public reports, information provided by the utility to the CDB or CARICOM Energy Unit)

| Indicator | | Unit of Measure | Baseline | Baseline Year | | EOP 2027 |
|------------|---|-----------------|---------------|---------------|------|----------|
| 4.0 | Regional penetration of indigenous RE sources for power generation within the ECC | % | 10.00 | 2015 | P | 0.30 |
| | | | | | P(a) | 0.30 |
| | | | | | A | |
| Details | | | | | | |
| Pro-Gender | | No | Pro-Ethnicity | | No | |

Impact Nbr. 5: Average electricity tariff for customers in ECC

Observation: Measures the average electricity tariff in the 5ECC covered by the program

| Indicator | | Unit of Measure | Baseline | Baseline Year | | EOP 2027 |
|------------|---|-----------------|---------------|---------------|------|----------|
| 5.0 | Average electricity tariff for customers in ECC | US\$/KWh | 0.33 | 2015 | P | 0.30 |
| | | | | | P(a) | 0.30 |
| | | | | | A | |
| Details | | | | | | |
| Pro-Gender | | No | Pro-Ethnicity | | No | |

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OUTCOMES

Outcome Nbr. 1: Component 1. GE Project Development

Observation:

| Indicator | | Unit of Measure | Baseline | Baseline Year | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | EOP 2027 |
|------------|--|-----------------------|----------|---------------|---------------|------|------|------|------|------|------|------|-------|----------|
| 1.0 | Geothermal power generation capacity installed in projects facilitated or financed at some stage by the program. | MW | 0.00 | 2015 | P | | | | | | | | | 60.00 |
| | | | | | P(a) | | | | | | | | 60.00 | |
| | | | | | A | | | | | | | | | |
| Details | | | | | | | | | | | | | | |
| Pro-Gender | | No | | | Pro-Ethnicity | | | | No | | | | | |
| Indicator | | Unit of Measure | Baseline | Baseline Year | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | EOP 2027 |
| 1.2 | Geothermal projects financed by the program with a power plant in construction or operation. | Number of GE projects | 0.00 | 2015 | P | | | | | | | | | 5.00 |
| | | | | | P(a) | | | | | | | | 5.00 | |
| | | | | | A | | | | | | | | | |
| Details | | | | | | | | | | | | | | |
| Pro-Gender | | No | | | Pro-Ethnicity | | | | No | | | | | |

Outcome Nbr. 2: Component 2. Technical Assistance: Regulatory Framework, Institutional Strengthening and Capacity Building

Observation:

| Indicator | | Unit of Measure | Baseline | Baseline Year | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | EOP 2027 |
|------------|--|---------------------|----------|---------------|---------------|------|------|------|------|------|------|------|------|----------|
| 2.0 | ECC with legal and regulatory frameworks that enable Geothermal Energy (GE) development implemented. | Number of countries | 1.00 | 2015 | P | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 |
| | | | | | P(a) | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 |
| | | | | | A | | | | | | | | | |
| Details | | | | | | | | | | | | | | |
| Pro-Gender | | No | | | Pro-Ethnicity | | No | | | | | | | |
| Indicator | | Unit of Measure | Baseline | Baseline Year | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | EOP 2027 |
| 2.2 | Specialized advisory services provided to ECC to structure GE sub-projects and reach financial closing for the construction of power plants. | Number of countries | 0.00 | 2019 | P | 0.00 | 0.00 | 0.00 | 1.00 | 2.00 | 0.00 | 0.00 | 0.00 | 3.00 |
| | | | | | P(a) | 0.00 | 0.00 | 0.00 | 1.00 | 2.00 | 0.00 | 0.00 | 0.00 | 3.00 |
| | | | | | A | | | | | | | | | |
| Details | | | | | | | | | | | | | | |
| Pro-Gender | | No | | | Pro-Ethnicity | | No | | | | | | | |

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OUTCOMES

| Indicator | | Unit of Measure | Baseline | Baseline Year | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | EOP 2027 |
|------------|--|------------------------|----------|---------------|---------------|------|------|------|-------|-------|------|------|-------|----------|
| 2.3 | Public institutions responsible for energy in the ECC trained in GE technical, financial, or regulatory aspects. | Number of institutions | 0.00 | 2019 | P | 0.00 | 0.00 | 0.00 | 10.00 | 20.00 | 0.00 | 0.00 | 30.00 | 3.00 |
| | | | | | P(a) | 0.00 | 0.00 | 0.00 | 10.00 | 20.00 | 0.00 | 0.00 | 30.00 | 3.00 |
| | | | | | A | | | | | | | | | |
| Details | | | | | | | | | | | | | | |
| Pro-Gender | | No | | | Pro-Ethnicity | | | No | | | | | | |

| Indicator | | Unit of Measure | Baseline | Baseline Year | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | EOP 2027 |
|------------|---|--------------------------|----------|---------------|---------------|------|------|------|-------|-------|------|------|-------|----------|
| 2.4 | Women trained in construction, operation and/or maintenance of Renewable Energy (RE) infrastructure and projects. | % of all persons trained | 0.00 | 2019 | P | 0.00 | 0.00 | 0.00 | 13.00 | 22.00 | 0.00 | 0.00 | 35.00 | 30.00 |
| | | | | | P(a) | 0.00 | 0.00 | 0.00 | 13.00 | 22.00 | 0.00 | 0.00 | 35.00 | 30.00 |
| | | | | | A | | | | | | | | | |
| Details | | | | | | | | | | | | | | |
| Pro-Gender | | No | | | Pro-Ethnicity | | | No | | | | | | |

| Indicator | | Unit of Measure | Baseline | Baseline Year | | EOP 2027 | | | | | | | | |
|------------|---|----------------------------|----------|---------------|---------------|----------|--|----|--|--|--|--|--|--|
| 2.5 | Women participate in program consultation processes related to GE projects. | % of all persons consulted | 0.00 | 2019 | P | 35.00 | | | | | | | | |
| | | | | | P(a) | 35.00 | | | | | | | | |
| | | | | | A | | | | | | | | | |
| Details | | | | | | | | | | | | | | |
| Pro-Gender | | No | | | Pro-Ethnicity | | | No | | | | | | |

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OUTPUTS: ANNUAL PHYSICAL AND FINANCIAL PROGRESS

Component Nbr. 1 Component 1. GE Project Development

| | Output | Unit of Measure | | PHYSICAL PROGRESS | | FINANCIAL PROGRESS | |
|-----|---|--------------------------------|------|-------------------|----------|--------------------|------------|
| | | | | 2019 | EOP 2027 | 2019 | EOP 2027 |
| 1.1 | Grants provided to geothermal projects with resources from the program for doing pre-feasibility studies. | Number of grants approved by C | P | 0 | 1 | 3,337,500 | 4,450,000 |
| | | | P(a) | 0 | 1 | 3,337,500 | 4,450,000 |
| | | | A | | 0 | | 0 |
| 1.2 | Contingent Recovery Grants (CRG) provided to geothermal projects to complete exploratory drilling activities. | Number of CRG approved by CDB* | P | 0 | 3 | | 16,000,000 |
| | | | P(a) | 0 | 3 | | 16,000,000 |
| | | | A | | 0 | | 0 |
| 1.3 | Loans provided to geothermal projects at any stage of development with resources from the program. | Number of loans approved by CD | P | 0 | 3 | 4,900,000 | 60,000,000 |
| | | | P(a) | 0 | 3 | 4,900,000 | 60,000,000 |
| | | | A | | 0 | | 0 |
| 1.4 | Loans provided to finance transmission and distribution lines required for bringing GE to market. | Number of loans approved by CD | P | 0 | 0 | | 0 |
| | | | P(a) | 0 | 0 | | 0 |
| | | | A | | 0 | | 0 |

Component Nbr. 2 Component 2. Technical Assistance: Regulatory Framework, Institutional Strengthening and Capacity Building

| | Output | Unit of Measure | | PHYSICAL PROGRESS | | FINANCIAL PROGRESS | |
|-----|--|---------------------|------|-------------------|----------|--------------------|-----------|
| | | | | 2019 | EOP 2027 | 2019 | EOP 2027 |
| 2.1 | Technical assistance grants provided to governments in ECC with resources from the program. | Number of countries | P | 0 | 4 | 1,387,000 | 3,607,167 |
| | | | P(a) | 0 | 4 | 1,387,000 | 3,607,167 |
| | | | A | | 0 | | 0 |
| 2.2 | Specialized advisory services contracts awarded to strengthen CDB's capacity to implement the program. | Number of countries | P | 0 | 4 | 416,000 | 1,550,000 |
| | | | P(a) | 0 | 4 | 416,000 | 1,550,000 |
| | | | A | | 0 | | 0 |

Total Cost

| | | | | | | |
|--|------------|------|--|--|------------|------------|
| | Total Cost | P | | | 10,040,500 | 85,607,167 |
| | | P(a) | | | 10,040,500 | 85,607,167 |
| | | A | | | | 0 |

CHANGES TO THE MATRIX

No information available for this section

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IMPLEMENTATION STATUS AND LEARNING

Lesson Learned - Categories

Intra/Inter Coordination