

ASSOCIATION OF CARIBBEAN STATES (ACS)

20th MEETING OF THE SPECIAL COMMITTEE ON DISASTER RISK REDUCTION

Port of Spain, Trinidad-and-Tobago, 22nd-23rd November, 2012

**ACS PROJECT CONCEPT DOCUMENT
(ACS PCD)**

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REGIONAL GEOTHERMAL PROJECT

CONTENTS

<p>ABBREVIATIONS AND ACRONYMS 3</p> <p>I. PROJECT OVERVIEW..... 4</p> <p style="padding-left: 20px;">A. PROJECT DESCRIPTION 4</p> <p style="padding-left: 40px;">1.1 Project name/number 4</p> <p style="padding-left: 40px;">1.2 ACS Focal Area 4</p> <p style="padding-left: 40px;">1.3 Objectives 4</p> <p style="padding-left: 40px;">1.4 Justification 4</p> <p style="padding-left: 40px;">1.5 Results / Components 6</p> <p style="padding-left: 40px;">1.6 Estimated Duration and Cost . 6</p> <p style="padding-left: 40px;">1.7 Project current status 6</p> <p style="padding-left: 20px;">B. STAKEHOLDERS 6</p> <p style="padding-left: 40px;">1.8 Entity responsible 6</p> <p style="padding-left: 40px;">1.9 Beneficiaries 6</p> <p style="padding-left: 40px;">1.10 Collaborating institutions 6</p> <p style="padding-left: 40px;">1.11 Executing institutions 6</p> <p style="padding-left: 40px;">1.12 Financing institutions 6</p> <p>II. PROJECT INTERVENTION LOGIC 7</p> <p style="padding-left: 20px;">A. CONTEXT AND BACKGROUND 7</p> <p style="padding-left: 40px;">2.1 Features of the sector 7</p> <p style="padding-left: 40px;">2.2 Problems that will be addressed... 7</p> <p style="padding-left: 40px;">2.3 Project Proposal 7</p> <p style="padding-left: 40px;">2.4 Other interventions 7</p> <p style="padding-left: 20px;">B. OBJECTIVES 8</p> <p style="padding-left: 40px;">2.5 Project overall objective 8</p> <p style="padding-left: 40px;">2.6 Project specific objective(s) 8</p> <p style="padding-left: 40px;">2.7 Expected results 8</p> <p style="padding-left: 20px;">C. STAKEHOLDERS 8</p> <p style="padding-left: 40px;">2.8 Beneficiaries 8</p> <p style="padding-left: 40px;">2.9 Participating institutions 8</p>	<p style="padding-left: 20px;">D. BENEFITS, RISKS AND SUSTAINABILITY 9</p> <p style="padding-left: 40px;">2.10 Benefits 9</p> <p style="padding-left: 40px;">2.11 Critical risks and Sustainability ... 9</p> <p style="padding-left: 40px;">2.12 Ex-post sustainability 9</p> <p>III. PROJECT IMPLEMENTATION 9</p> <p style="padding-left: 20px;">A. COMPONENTS AND ACTIVITIES . 9</p> <p style="padding-left: 40px;">3.1 Components description..... 9</p> <p style="padding-left: 40px;">3.2 Listing of activities 9</p> <p style="padding-left: 40px;">3.3 Expected schedule 9</p> <p style="padding-left: 20px;">B. EXECUTION 9</p> <p style="padding-left: 40px;">3.4 Physical means required 10</p> <p style="padding-left: 40px;">3.5 Expertise required 10</p> <p style="padding-left: 40px;">3.6 Project Team 10</p> <p style="padding-left: 40px;">3.7 Matrix of Responsibilities 10</p> <p style="padding-left: 20px;">C. COST 10</p> <p style="padding-left: 40px;">3.8 Financing Matrix 10</p> <p>IV. PROJECT EVALUATION 11</p> <p style="padding-left: 40px;">4.1 Lessons learnt from related programmes 11</p> <p style="padding-left: 40px;">4.2 Specific focus 11</p> <p style="padding-left: 40px;">4.3 Verifiable indicators 11</p> <p style="padding-left: 40px;">4.4 Progress and Final reports 11</p> <p>ANNEX I - SCHEDULE OF ACTIVITIES . 12</p> <p>ANNEX II - DETAILED BUDGET 12</p> <p>ANNEX III - LOGICAL FRAMEWORK ... 12</p> <p>ANNEX IV - OTHERS 13</p>
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ABBREVIATIONS AND ACRONYMS

ACS Association of Caribbean States

AFD Agence Française de Développement, meaning French Development Agency

I. PROJECT OVERVIEW	
A. PROJECT DESCRIPTION	
1.1 Project name/number	<p>“Regional Geothermal Project”</p> <p>The Regional Geothermal Project aims at developing the geothermal potential of the Commonwealth of Dominica, to the benefits of Dominica, Guadeloupe and Martinique. This innovative project would also serve as a pilot project in the Caribbean, demonstrating the feasibility of the exploitation of a renewable source of energy in the Caribbean and of the production of clean electricity.</p>
1.2 ACS Focal Area	Disaster Risk Reduction
1.3 Objectives	<p>Overall objective: <i>The overall objective of the project is to develop the use of renewable energy in the Caribbean, in conformity with the Plan of Action of Saint-Marc adopted in 2007 by the ACS. Producing geothermal electricity in Dominica will strengthen the energy independence and contribute to the sustainable development of the region. The finality of the project is to install geothermal plants of a total capacity of 100-120 MW and an interconnection network that will provide clean electricity to Dominica, Guadeloupe and Martinique. This will strengthen the Dominican economy and preserve the Caribbean environment.</i></p> <p>Specific Objective(s): The Specific Objective of the project is to support the Government of Dominica in the development and exploitation of the geothermal resource by providing technical assistance to structure the project and financing for the drilling of the first production well. This will pave the way to the creation of a geothermal power plant in Dominica, which will demonstrate the viability and feasibility of geothermal production.</p> <p>Specific Objective 1: clarify the different options and possible frameworks for the exploitation of geothermal power in Dominica. This objective will be reached through the mobilization of an expert providing technical assistance to the Government of Dominica.</p> <p>Specific Objective 2: drilling a first production well to demonstrate the feasibility of exploitation of the geothermal reservoir.</p>
1.4 Justification	<p>The development of the Caribbean region is hindered by its energy dependence and the high cost of electricity. The Caribbean region is currently heavily dependent on fossil fuel combustion, with petroleum products accounting for an estimated 93 percent of commercial energy consumption.</p> <p>These conventional methods of electricity production through fossil fuel plants are among the most significant contributors to air, land and water pollution. They are the primary source of greenhouse gas (GHG) emissions, and a major cause of a balance of payments problem.</p> <p>Therefore, the development of the region requires the exploitation of new sources of energy which would ensure the expansion of the electricity production capacity and respect the fragile Caribbean environment.</p> <p>The current methods of production and costs of electricity in Dominica and</p>

	<p>in the French Overseas Development are neither sustainable nor beneficial to the economy. Producing geothermal power will create a source of cheaper and cleaner electricity for these territories without damaging the regional environment. It will also reduce the level of importation of fossil fuel, thereby re-equilibrating their balance of payments.</p> <p>This Project is in line with ACS' mandate and the Plan of Action of Saint-Marc, especially the following sections:</p> <ul style="list-style-type: none"> i. Recalling the acknowledgement by the 4th ACS Summit of Heads of State/Government, held in Panama City in July 2005, of the vulnerability of our countries to disasters and their negative impact on our efforts to ensure sustainable development, and the achievement of the Millennium Development Goals with respect to poverty reduction and environmental sustainability; as well as the Hyogo Framework of Action; ii. Recognising that the primary goal of disaster risk reduction is the safeguard of the lives of human beings, the protection of their means of subsistence and those of the local economy, as well as the environment; iv. Convinced that the best way to reduce vulnerability to disasters is to integrate disaster risk reduction and adaptation to climate change into sustainable and safe development policies and plans at all levels of government and that mainstreaming these concerns into planning and practice is a complex issue requiring close cross-cutting cooperation among all stakeholders; <ul style="list-style-type: none"> 1. Strengthen its role as the principal forum in the Greater Caribbean for the exchange of experiences, lessons learnt and best practices in the development of national and regional coordination mechanisms. 5. Encourage and contribute, as appropriate, to Members' integration of all disaster risk reduction actions with climate change strategies, such as measures surrounding adaptation to climate change. 23. Work toward the mobilisation of resources, to be drawn from the international donor community, for the creation of a regional fund for the financing of disaster risk reduction activities, including those intended for adaptation to climate change. <p>This Project is also an emblematic project of regional cooperation associating a member of the OECS and French Overseas Department.</p>
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1.5 Results / Components	The result of Component 1 will consist in a decision of the Government of Dominica on how to proceed with the development of the geothermal project. The result of Component 2 will be the drilling of the production well.
1.6 Estimated Duration and Cost	According to the first estimations, the technical assistance could cost from 50,000 to 70,000 Euros. AFD will complete the financing plan with a 5 million Euros loan to the Government of Dominica for the drilling of the first production well and additional technical assistance if required. The technical assistance will be mobilized through the second semester of 2012.
1.7 Project current status	Following the drilling and analysis of three exploratory wells, the preparation phase of the project is almost completed. The Government of Dominica will use this technical assistance to structure the project and enter into the investment phase which will lead to the production of sustainable energy and its exportation to the French Overseas Department. The EU is also supporting this regional initiative through the regional fund INTERREG IV.
B. STAKEHOLDERS	
1.8 Entity responsible	Representative of the Government of Dominica
1.9 Beneficiaries	Member States of the ACS
1.10 Collaborating institutions	AFD
1.11 Executing institutions	Ministry of Public Works, Energy and Ports of the Government of Dominica
1.12 Financing institutions	Special Fund of the ACS for the technical assistance French Development Agency for the drilling of the first production well

II. PROJECT INTERVENTION LOGIC

A. CONTEXT AND BACKGROUND

2.1 Features of the sector

The development of the Caribbean region is hindered by its energy dependence and the high cost of electricity. The Caribbean region is currently heavily dependent on fossil fuel combustion, with petroleum products accounting for an estimated 93 percent of commercial energy consumption.

These conventional methods of electricity production through fossil fuel plants are among the most significant contributors to air, land and water pollution. They are the primary source of greenhouse gas (GHG) emissions, and a major cause of a balance of payments problem.

Therefore, the development of the region requires the exploitation of new sources of energy which would ensure the expansion of the electricity production capacity and respect the fragile Caribbean environment.

The current methods of production and costs of electricity in Dominica and in the French Overseas Development are neither sustainable nor beneficial to the economy. Producing geothermal power will create a source of cheaper and cleaner electricity for these territories without damaging the regional environment. It will also reduce the level of importation of fossil fuel, thereby re-equilibrating their balance of payments.

2.2 Problems that will be addressed

The problems addressed by this project are:

- the energy dependence of the Caribbean and its reliance on imported fossil fuels,
- the unsustainable and costly methods of electricity production,
- the damage of fossil fuel electricity on the Caribbean Environment.

2.3 Project Proposal

The Project will consist in supporting the Government of Dominica to structure the project and prepare the commercial exploitation of the geothermal resource by:

- providing technical assistance to the Government to assist the authorities in the structuration of the project,
- drilling a first geothermal production well to demonstrate the feasibility of geothermal production in Dominica.

The Terms of Reference of the technical assistance will be provided after the approval of the project.

After this crucial phase, the Government of Dominica will be able to enter into a Public-Private Partnership with investors to i/ install a 100-120 MW geothermal plant and the interconnection cables with Martinique and Guadeloupe and ii/ lead the commercial exploitation of the resource (production, distribution of electricity).

2.4 Other interventions

B. OBJECTIVES

2.5 Project overall objective

The overall objective of the project is to develop the use of renewable energy in the Caribbean, in conformity with the **Plan of Action of Saint-Marc adopted in 2007 by the ACS**. Producing geothermal electricity in Dominica will strengthen the energy independence and contribute to the **sustainable development** of the region. The finality of the project is to install geothermal plants of a total capacity of 100-120 MW and an interconnection network that will provide **clean electricity** to Dominica, Guadeloupe and Martinique. **This will strengthen the Dominican economy and preserve the Caribbean environment.**

2.6 Project specific objective(s)

Specific Objective(s): The Specific Objective of the project is to support the Government of Dominica in the development and exploitation of the geothermal resource by providing technical assistance to structure the project and financing for the drilling of the first production well. This will pave the way to the creation of a geothermal power plant in Dominica, which will demonstrate the viability and feasibility of geothermal production.

Specific Objective 1: clarify the different options and possible frameworks for the exploitation of geothermal power in Dominica. This objective will be reached through the mobilization of an expert providing technical assistance to the Government of Dominica.

Specific Objective 2: drilling a first production well to demonstrate the feasibility of exploitation of the geothermal reservoir.

2.7 Expected results

The expected results are the strengthening of the Government of Dominica's capacity to take the necessary steps to develop the geothermal project. The second result will be the drilling of the production well which will allow the creation of the first geothermal power plant.

C. STAKEHOLDERS

2.8 Beneficiaries

The beneficiaries are the member States of the ACS since the exploitation of a clean source of energy will contribute to the preservation of the regional environment and encourage other stakeholders to develop the use of renewable energies. The direct beneficiaries of this first phase are the Government of Dominica, Guadeloupe and Martinique.

2.9 Participating institutions

Name of institution: French Development Agency	
Name and last name of legal representative: Mr. Eric Bordes	
Address:	City: Fort-de-France
Country: Martinique - FRANCE	

Tel:	Fax:	Email:	Website:
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D. BENEFITS, RISKS AND SUSTAINABILITY

2.10 Benefits

2.11 Critical risks and Sustainability

Critical Risks	Risk Rating	Risk Mitigation Measures

2.12 Ex-post sustainability

III. PROJECT IMPLEMENTATION

A. COMPONENTS AND ACTIVITIES

3.1 Components description

Component 1: technical assistance to the government

Component 2: infrastructure investment to drill the first production well

3.2 Listing of activities

- provision of expertise and technical advice to the Government of Dominica,
- drilling of a production well.

3.3 Expected schedule

Years	1				
Months	1	2	3	...	12		
Component 1							
Component 2							
...							

B. EXECUTION

3.4 Physical means required

- No physical means are required for Component 1.
- For Component 2, Iceland Drilling, the company in charge of the exploratory drillings, will mobilize the necessary equipment for the drilling of the production well.

3.5 Expertise required

- Technical expertise of AFD Energy and Financial divisions to write the terms of reference of the technical assistant to be selected,
- Technical expertise of AFD to monitor the drilling,
- Expertise of the Disaster Risk Reduction division of the ACS to monitor the project and launch the call for tender for the recruitment of the technical assistance.

3.6 Project Team

- Members of the Disaster Risk Reduction division
- From AFD site, members of the team are
 - o Arnaud Desmarchelier, Project manager of the Energy department,
 - o Géraldine Rollin, PPP specialist,
 - o and Sarah Morsi, coordinator for the Lesser Antilles.

3.7 Matrix of Responsibilities

Role / Responsibility	Actor
Obtaining the approval of the Special Fund and following-up the project	ACS
Preparing the terms of reference of the consultant	AFD

To be discussed: AFD could handle the selection of the consultant.

C. COST

3.8 Financing Matrix

	<i>Unit</i>	<i>Days</i>	<i>Fees / Amount</i>	<i>Sources of financing</i>			<i>TOTAL</i>
				
<i>Consultancies</i>							
Consultant Fees							
Consultant Travel (Region)							
<i>Equipment</i>							
(Purchase / Production / ...)							
...							
<i>Others</i>							
...							
<i>Project Monitoring and Management</i>							
Progress and final reports							
Communications							
Translations							
...							
<i>Incidental expenses</i>							
TOTAL							

IV. PROJECT EVALUATION

4.1 Lessons learnt from related programmes

4.2 Specific focus

4.3 Verifiable indicators

- Drilling of one production well

4.4 Progress and Final reports

Progress will be monitored through regular mission of AFD Head Office and AFD Representation in Martinique to Dominica.

A Final report will be submitted by the Technical Assistant at the end of his/her mission. The drilling of the production well will be monitored by the American Company GRG, which will submit a report when the drilling is completed.

ANNEX I - SCHEDULE OF ACTIVITIES

Years	1												...				
Months	1			2				3			...	12			...		
Weeks (approx.)	1	2	3	4	5	6	7	8									
Component 1																	
Activity 1																	
Activity ...																	
Component ...																	
...																	
...																	

ANNEX II - DETAILED BUDGET

COMPONENT X :								
Activities	Expense headings	Unit	Duration		Fees / Amount	Sources of financing		Total Cost
			Days	Months				
X.1								
X.2								
X. ...								
TOTAL COMPONENT X								

ANNEX III - LOGICAL FRAMEWORK			
OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	FAVOURABLE ASSUMPTIONS
DEVELOPMENT OBJECTIVE			
PURPOSE			
COMPONENTS / PRODUCTS			
ACTIVITIES / INPUTS			

ANNEX IV - OTHERS