

# TERMINAL EVALUATION

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## I. Overview

### A. Description

Project name

African Rift Geothermal Development Facility (ARGeo)

Country

Regional, Kenya, Ethiopia, Tanzania, Uganda, Eritrea, Rwanda

GEF ID

2119

Implementing Agency

UNEP

Executing Entity

Multilateral

Trust Fund

GET

Project Type

FSP

Objective

### B. Key Dates

CEO Endorsement/Approval

7/25/2012

Agency Approval

3/26/2010

Implementation Start

4/12/2010

First Disbursement

5/6/2010

Expected MTR

12/1/2016

MTR Submission

3/7/2025

Actual MTR

5/1/2017

Expected Completion

12/31/2019

Actual Completion

12/31/2021

Actual TE

1/31/2023

TE Submission

3/7/2025

Final Disbursement

12/1/2010

## C. Disbursements

Project Financing	Cumulative Disbursement
5177500	4750000

## II. PROGRESS STATUS AND ISSUES

### A. Main Terminal Evaluation Findings

Without any exception, all interviewed persons agreed on the importance and need for the ARGeo project, that without the support and coordination by UNEP-ROA the topic of “geothermal energy” would not have the success as it shows in 2022. In particular, capacity building, technology transfer, exchange of ideas and experience between the stakeholders were mentioned as great strengths of the project. This included the conferences, workshops, training seminars and international expert exchange. On the other hand, within the project period of 12 years only investments in Kenya (861 MWel) and in Ethiopia (7.3 MWel) were completed, which is quite low compared to the expectations in the beginning of the project. Key findings for each of the evaluation criteria are provided in the following.

**Strategic relevance:** ARGeo project was fully compatible to strategic priorities of UNEP, GEF and other donor organisations. Dissemination of information on geothermal energy in the East African rift system, as well as awareness raising, training of experts and building partnerships worked very well.

**Quality of project design:** ARGeo project was designed to support six countries in mitigating the risks associated with surface exploration and catalyse investment for electricity production with the assumption of having high temperature geothermal resources all the project target countries. However, exploration studies and the regional technical evaluation of the geothermal resource in the western regional branch of the east African System (e.g. Uganda, Rwanda, Tanzania) have shown that the geology and geodynamic evolution of the Western part of the rift system allows only existence of low and medium temperature geothermal systems. Further, the project design included knowledge transfer in terms of capacity building, field training, technical short courses, and building partnership at congresses.

**Nature of external context:** ARGeo was not affected by conflicts<sup>3</sup>, disasters, or political upheaval during the implementation except for the conflicts in Eritrea, where exploration drilling stopped due to unrest. Overall, however, the nature of the external context was considered favourable. COVID-19 epidemic situation was at the end of project, the influence of COVID-19 on the project results was neglectable.

**Effectiveness (availability outputs, achievement of project outcomes, impact):** In general, the ARGeo project met planned outputs, outcomes and intended impacts.

**Financial management:** Financial management of the ARGeo project (USD4.75 million) was appropriate. Financial data on the additional co-financing funds were quite often inconsistent due to the huge number of organizations contributing to the project including co-financing and in-kind-contributions. It must be reported that neither exploration studies, nor exploration drillings were procured; this reflects on the assessment that while contracting processes were followed there appear to be no detailed Terms of References prepared, which could allow an evaluation of the respective works completed. The lack of some tendering documentation in the procurement process was revealed at interviews with donors and consultants.

**Efficiency:** For Component 1, a huge number of documents have been produced, which the Evaluation Team finds to be of good quality. For Component 2 costs for surface exploration studies and exploration drillings were quite high compared to international standards. The ARGeo project has supported the countries in carrying out surface exploration studies that lead to development of conceptual models that allowed for selection of target sites for drilling.

**Monitoring and reporting:** In detail and well documented project. Donor commitments on reporting were fulfilled.

**Sustainability (socio-political, financial, institutional):** The probability of project outcomes being maintained and further developed after the closure of the ARGeo project is poor without additional support and funding. Component 1 needs additional support to continue. The ARGeo Project, however, is continuing under the realm of UNEP and it is in operation after project closure of the GEF funded project in December 2021. At present (August 2022), the ninth African Rift Geothermal Conference is being organized in Djibouti under the auspices of the UNEP ARGeo project. It has developed from being project based to matured institutional support by establishing the African Geothermal Association (AGA), African Women Advancing Geothermal (AWAG), etc. The continued capacity development process through Interim Project Coordination Unit of the African Geothermal Centre of Excellence (IPCU-AGCE) is another testimony. This clearly indicates the sustainability of the project. Component 2 can use international funds, for example, GRMF and similar funds.

**Factors affecting performance and cross-cutting issues:** The performance of the ARGeo project is adequate and was more or less the only entity providing trans-national support for GtE Africa with information exchange over country borders. Preparation of the project, quality of project management and supervision and stakeholder participation were ensured. Responsiveness to human rights and gender equity, environmental and social safeguards were adequate. Communication and public awareness were completed at very high level.

## **B. Stakeholder Engagement**

Key stakeholder groups of the project included: Implementing partners, government officials, scientific experts and utilities and industry. Besides beneficiaries, other groups have benefitted from the ARGeo project such as industries, households, businesses and trade people, that would use geothermal energy. Members of the Advisory Technical Team (ATAT) and the ARGeo Steering Committee, UNEP and GEF were key stakeholders with high power and interest and considered to be the main influencing partners in this project. They were the “motor” of getting GtE to East Africa. Ministries responsible for energy production in the respective country had relative high power on implementing GtE, but their level of interest in GtE projects were limited in some countries. This group of stakeholders also included some research institutes and similar organisations, that had a more “scientific interest” in GtE, but would have limited funds available to finance investments in GtE.

International financing institutions, which were in a position to finance GtE investments in the East Africa region, had low power of influence on direct implementation of geothermal equipment and high interest in promoting renewable energy sources, but in the end, these institutions would negotiate activities with the respective national governments.

During the course of the ARGeo project being evaluated, governmental stakeholders were fully represented, but beneficiaries including industry were participating at a low level.

## **C. Gender Equality**

Participation of disaggregated groups (including gendered, vulnerable, or marginalised groups) in project activities were not mentioned in the beginning of the ARGeo project in 2010. Funds allocated for monitoring were not used to support this activity (we refer also to “Safeguards” and “Adaptive Management”). In the course of implementation of the ARGeo project strategies and resources have been utilised to ensure that female beneficiaries were targeted and that their social functions allowed participation.

The project facilitated effective implementation of the SDG 5 and decisions made by Africa Environment Ministers (AMCEN) on empowering women in energy sector through the programme of “Women Entrepreneurs and Sustainable Energy in Africa-WESE”. The approach was: (i) Ensuring Gender responsive policies in energy (e.g. geothermal) sector; (ii) Technical skill development; and (iii) Ensuring access to finance and market.

The ARGeo project championed the creation of “Women in Geothermal in Africa WING Africa”<sup>59</sup> that aims to drive economic and social contribution of African women in geothermal science and technology, through direct utilization, achieving versatile uses of geothermal energy and achieving sustainable development goals.

The project has also trained a total of about 150 Africa women in geothermal science and engineering where they are now working as department heads and experts in the geothermal projects of their respective countries.

Evaluation Team found that the ARGeo actively tried to promote women in geothermal energy. It did not detect any direct negative impact on communities or environments of site-projects by the ARGeo project on human rights and on gender equality as this project was a more technical project in the field of GtE in East Africa.

#### **D. Knowledge Management**

The ARGeo project did not have a KM Approach during CEO Endorsement/Approval.

ARGeo has established a project website in cooperation with UNEP where all technical papers and reports on geothermal activity is available on the AGID web site<sup>51</sup>, AGID web site is an information sharing platform and hub for Geothermal related information in the East African Region. It aims at promoting the exploration, development and utilization of geothermal energy resources by storing, compiling, integrating of geothermal related information in the region and sharing it with end users – public and private entities<sup>52</sup>– (ARGeo have increased the sustainability of GtE development in EA with over 400 home grown experts (women and youth) were empowered to tap into Africa’s 20 GW geothermal energy<sup>53</sup>. ARGeo have achieved good results even when other priorities in a number of countries that are involved in green energy development due to other renewable resources (for example hydro power in Ethiopia).

Before the start of the ARGeo project there were nearly no activities in the GtE sector in East Africa, with the exception of Kenya. With the implementation of ARGeo for all participating countries communication on GtE increased heavily for those stakeholders, which were involved in the ARGeo project. And with the bi-annual conferences and other activities, for example training and establishment of ARGeo homepage, the visibility of GtE and awareness on GtE topics increased. All persons interviewed confirmed the enormous effect of ARGeo on better communication between the persons in the GtE field in EA. Communication between the stakeholders in the different countries was always a key element mentioned during interviews as the main strength of the ARGeo project.

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### III. Core Indicators

## IV: Co Financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Anticipated at CEO(\$)	Materialized at MTR(\$)	Materialized at TE(\$)
Recipient Country Government	Eritrea	In-kind	Recurrent expenditures			35756
Recipient Country Government	Ethiopia	In-kind	Recurrent expenditures			760000
Recipient Country Government	Kenya	In-kind	Recurrent expenditures			2829562
Recipient Country Government	Rwanda	In-kind	Recurrent expenditures			142653
Recipient Country Government	Tanzania	In-kind	Recurrent expenditures			4653637
Recipient Country Government	Uganda	In-kind	Recurrent expenditures			279566
Donor Agency	IADC	Other	Investment mobilized			353557
Donor Agency	AUC	In-kind	Recurrent expenditures			10020344
Donor Agency	BGR	Other	Recurrent expenditures			147045
Donor Agency	MFA-ICEIDA	Other	Investment mobilized			806191
Donor Agency	MFA-ICEIDA	In-kind	Recurrent expenditures			110000
Donor Agency	UNEP	In-kind	Recurrent expenditures			250000
Donor Agency	US Power Africa	In-kind	Recurrent expenditures			556615
<b>Total Co-financing</b>				<b>0.00</b>	<b>0.00</b>	<b>20,944,926.00</b>

Comments

## V: ENVIRONMENTAL AND SOCIAL SAFEGUARDS

### Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
			Not available at this stage

Measures to address identified risks and impacts

This was not part o the design of the project. However, the evaluation noted that within the ARGeo project, environmental issues were considered during the entire implementation of the project. This can be seen from documents published and by the discussions in the SC and the ATAT.

## VI. ANNEX

Uploaded Document

Document Category	Title
M and E Document	2119_2023_TE_ARGeo