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**MEETING OF THE PERMANENT  
REPRESENTATIVES' COMMITTEE  
ADDIS ABABA, 15 MAY 2018**

**FIRST PROGRESS REPORT OF  
THE CHAIRPERSON OF THE COMMISSION  
ON THE GEOTHERMAL RISK MITIGATION FACILITY**

## **I. INTRODUCTION**

1. Further to my undertaking to the PRC in March 2018, I am pleased to submit my first progress report on the Geothermal Risk Mitigation Facility (GRMF), which was prepared by the Commission's Department of Infrastructure and Energy.

2. Geothermal energy is a clean, renewable, environment-friendly and indigenous resource that can improve the energy-generation mix. The GRMF Programme is focusing, for the time being, on countries located in the East Africa Rift Valley System, which has a potential to produce over 20,000 Mwe (Megawatts) that will also benefit countries in other regions through interconnection of the various Regional Power Pools, starting with the southern and northern regions in the short to medium terms.

3. The Commission was requested to, among others, launch a Joint Regional Programme that will engage in the promotion, exploration, exploitation and development of geothermal energy resource in the East African Rift System, by the Ministers responsible for Energy of Ethiopia, Kenya, Rwanda, Tanzania, Uganda, Burundi, The Comoros, Eritrea, the Democratic Republic of the Congo (DRC), Djibouti, and Zambia, who signed the Addis Ababa Declaration on Geothermal Energy in June 2009. The mandate was confirmed and extended by Decision EX.CL /Dec. 748(XXII) of the Second Ordinary Session of African Union (AU) Conference of Ministers in Charge of Energy (CEMA) held in Addis Ababa, Ethiopia, in November 2012, and Decision EX.CL/Dec. 970(XXX) of the First Ordinary Session of the AU Specialized Technical Committee (STC) on Transport, Transcontinental and Interregional Infrastructure, Energy and Tourism held in Lomé, Togo, in March 2017.

## **II. BACKGROUND**

4. In 2012, the Commission, with support from the German Federal Ministry for Economic Cooperation and Development (BMZ) and the European Union (EU)-Africa Infrastructure Trust Fund (EU-Africa ITF), via KfW Entwicklungsbank (KfW), established the Geothermal Risk Mitigation Facility, as a financial tool for supporting geothermal energy development in Eastern Africa. The GRMF is hosted and managed by the Commission, with an initial capital of euro 50 million, of which euro 30 million from the EU-Africa ITF and euro 20 million from BMZ. Additionally, the United Kingdom Department for International Development (DFID) contributed GBP 47 million in 2014 which was reduced to GBP 39 million in 2017. The Commission is also contributing around half a million US dollars annually for staff salary and the monitoring of the GRMF operations.

5. The objective of the Facility is to encourage public and private investors, as well as public private partnerships, to develop geothermal prospects for power generation in Eastern Africa, by providing grants for two types of activities: (i) surface studies to determine the optimal location of exploration wells; and (ii) drilling exploration wells and testing of reservoir, as well as the physical infrastructures (access road, electricity and

water supply) related to the two activities. This encourages further geothermal investments and improve access to equity or other funding sources and, thus, play a catalytic role in establishing geothermal energy as a strategic option in power expansion planning in Eastern Africa.

6. Under the GRMF program, the first application round in 2012 targeted five (5) countries as pilot phase: Ethiopia, Kenya, Rwanda, Tanzania and Uganda. Starting from 2013, the application rounds were expanded to include more countries, namely Burundi, The Comoros, Djibouti, the DRC, Eritrea and Zambia.

### **III. APPLICATION PROCESS AND ELIGIBLE ACTIVITIES**

7. The Facility provides grants to developers through competitive, transparent and rigorous two-stage application and evaluation processes. These are as follows:

- (i) the first stage is an open pre-qualification process, inviting potential applicants to submit their Expressions of Interest (EoI) by a specified closing date each year. EoI scoring 70% and above are pre-qualified for the second phase;
- (ii) in the second stage, pre-qualified applicants submit a full application by a set deadline. Those who score 70% and above will be awarded grant by the Commission upon approval by the GRMF Oversight Committee.

8. Eligible activities for surface studies are geophysical surveys, as well as supplementary geological, hydro-geological and geo-chemical surveys. The GRMF funds up to 80% of approved eligible costs in this category, excluding infrastructure cost. For drilling programs, exploration drilling and testing programs for three full size wells are eligible for funding up to 40% of approved eligible costs, excluding infrastructure cost. The infrastructure grant covers up to 20% of approved eligible cost. It is only awarded in conjunction with surface study and drilling programme grants.

### **IV. IMPLEMENTATION STATUS OF GRMF AND APPLICATIONS ROUNDS OUTCOMES**

#### **(i) First to Fourth Applications Rounds (AR1 – AR4)**

9. The table in Annex I summarizes the projects and grants awarded, disbursements and implementation status in all the Application Rounds of the GRMF grant till to date. So far, GRMF has awarded grants to 26 projects qualified in the first four application rounds from 2012 to 2016. The total awarded grants amounted to about USD 80 million.

10. The twenty-six (26) projects awarded grants are located in six (6) different countries, with a planned power plant capacity of approximately 2,900 MW and grant volume of USD108 million. The planned investment volume by geothermal developers is estimated to USD 9.3 billion. The table in Annex II shows the estimated resource potential, the planned power plants capacity, grant volume and planned investments for the first four application rounds.

**(ii) Fifth Application Round (AR5)**

11. The projects in Annex III, are pre-qualified to submit full application for the Fifth Application Round:

**V. CHALLENGES**

12. The main challenges for development of geothermal resources in EARS include: (i) inadequate policy and regulatory framework to attract investments; (ii) large upfront cost of geothermal resource exploration and development; and (iii) risks in resource “exploration” and “power development”. These challenges can be grouped under three categories:

**(i) Challenges at the Developer’s Level**

- poor quality of applications for GRMF grants;
- limited availability of technical expertise, especially in public entities;
- delays in projects implementation; and
- difficulty to secure their own share funds to complete the GRMF grants (20% for infrastructure, 40% for drilling projects and 80% for surface studies).

**(ii) Challenges at the Beneficiary Countries’ Level**

- lack of appropriate institutional, legal and regulatory frameworks to attract private investors; and
- limited participation in some instances from beneficiary countries;

**(iii) Challenges at the Level of the Commission and GRMF Funds**

- delays in recruiting the staff for the GRMF Coordination Unit since its establishment in 2013 (two energy experts and one procurement officer). But the recruitment process is almost completed, with the remaining energy expert already selected;

- DFID (UK) contribution to GRMF is scheduled to end by 31 March 2019. Meanwhile, the rate of disbursements to projects awarded grants is still low. The issue is under discussion between the Commission, DFID and KfW on the way forward.

13. To overcome the technical challenges, the Commission has mobilized development partners to provide technical assistance and capacity building, especially to public institutions. These partners include the Federal Institute for Geosciences and Natural Resources (BGR) (with 3 million Euros for the period 2016-2019), New Zealand (NZ-Africa Geothermal Facility of 7 million USD for the period 2017-2021), United Nations Environment Programme (UNEP) and Icelandic International Development Agency (ICEIDA).

14. Furthermore, the Commission, UNEP, ICEIDA and the Government of Kenya agreed in 2016 on the establishment of the Africa Geothermal Center of Excellence (AGCE). The objective of the AGCE is to develop a critical mass of African geothermal scientists and engineers to support a sustained geothermal resource development in Africa. The Center will be hosted by the Government of Kenya, as the latter has significant experience, expertise and a well-developed institutional and infrastructural capacities in geothermal exploration, development and utilization.

## **VI. CONCLUSION AND RECOMMENDATIONS**

15. I wish to note that the Geothermal Risk Mitigation Facility Program remains one of the successful projects in the Commission, despite the challenges mentioned above. Much progress continues to be made by the developers in preparing their GMRF grant applications and in complying with the GRMF requirements.

16. The Commission will continue to work with development partners to improve the capacity and expertise of interested Member States and mobilize more financial resources to meet the increased interest in geothermal energy development as witnessed by the growing number of projects that are submitted for grant awards. It is critical that Member States put in place the appropriate institutional, legal and regulatory frameworks, in order to attract more private investors and allocate adequate resources to the Commission for the expansion of this Programme to other AU countries.

## ANNEX I

## Projectoverview AR 1 – AR 4

No.	AR	Project Name	Country	Project Type	Beneficiary Developers	Entity type	Grant volume (in USD)	Current status
1	AR 1	<b>Dofan SS</b>	Ethiopia	SS	Geological Survey of Ethiopia (GSE)	Public	976,872	In Project pipeline
2	AR 1	<b>Bogoria-Silali DP</b>	Kenya	DP	GDC	Public	6.026.786	In Project pipeline
3	AR 1	<b>Corbetti DP</b>	Ethiopia	DP	Reykjavik Geothermal ehf (RG)	Private	7.994.035	In Project pipeline
4	AR 1	<b>Longonot DP</b>	Kenya	DP	Africa Geothermal International (Kenya) Ltd. (AGIL)	Private	8.437.024	In Project pipeline
5	AR 2	<b>Fantale SS</b>	Ethiopia	SS	Cluff Geothermal	Private	857.251	Before final disbursement
6	AR 2	<b>Karthala SS</b>	Comoros	SS	Bureau Géologique des Comoros (BGC)	Public	844.860	Before final disbursement
7	AR 2	<b>Tulu Moye SS</b>	Ethiopia	SS	Reykjavik Geothermal ehf (RG)	Private	1.314.000	Project fully implemented
8	AR 2	<b>Akiira One DP</b>	Kenya	DP	Akiira Geothermal Ltd. (AGL)	Private	3.311.483	Before final disbursement
9	AR 2	<b>Suswa I DP</b>	Kenya	DP	GDC	Public	-	In Project pipeline
10	AR 3	<b>Arta SS</b>	Djibouti	SS	ODDEG	Public	831.867	Before 1st disbursement
11	AR 3	<b>Barrier SS</b>	Kenya	SS	Olsuswa Energy Ltd.	Private	980.568	Before 1st disbursement
12	AR 3	<b>Butajira SS</b>	Ethiopia	SS	Cluff Geothermal	Private	609.000	In Project pipeline
13	AR 3	<b>Fantale DP</b>	Ethiopia	DP	Cluff Geothermal	Private	5.407.298	In Project pipeline
14	AR 3	<b>Karthala DP</b>	Comoros	DP	Bureau Géologique des Comoros (BGC)	Public	10.870.124	In Project pipeline
15	AR 3	<b>Kinigi DP</b>	Rwanda	DP	Energy Development Corporation Ltd.	Public	-	In Project pipeline

No.	AR	Project Name	Country	Project Type	Beneficiary Developers	Entity type	Grant volume (in USD)	Current status
16	AR 3	<b>Korosi DP</b>	Kenya	DP	GDC	Public	6.212.935	In Project pipeline
17	AR 3	<b>Paka DP</b>	Kenya	DP	GDC	Public	6.862.426	In Project pipeline
18	AR 4	<b>Abaya SS</b>	Ethiopia	SS	Reykjavik Geothermal ehf (RG)	Private	1.376.566	Approval of GC pending
19	AR 4	<b>Chepchuk SS</b>	Kenya	SS	Maralal Energy Ltd.	Private	586.137	In Project pipeline
20	AR 4	<b>Arus SS</b>	Kenya	SS	Arus Energy Ltd.	Private	448.646	In Project pipeline
21	AR 4	<b>Homa Hills SS</b>	Kenya	SS	Capital Power Ltd.	Private	720.490	In Project pipeline
22	AR 4	<b>Alalobeda DP</b>	Ethiopia	DP	Ethiopia Electric Power (EEP)	Public	8.294.344	In Project pipeline
23	AR 4	<b>Wondo Ganet DP</b>	Ethiopia	DP	OrPower 12 Inc.	Private	4.125.450	In Project pipeline
24	AR 4	<b>Boku DP</b>	Ethiopia	DP	OrPower 12 Inc.	Private	5.160.707	In Project pipeline
25	AR 4	<b>Daguna Fango DP</b>	Ethiopia	DP	OrPower 12 Inc.	Private	4.542.743	In Project pipeline
26	AR 4	<b>Ngozi DP</b>	Tanzania	DP	TGDC	Public	3.661.357	In Project pipeline
<b>Total Grants (In USD)</b>							<b>79.476.097</b>	

## ANNEX II

Application round	No. of projects	No. of surface studies	No. of drilling programmes	No. of countries	Estimated Resource Potential (MWe)	Planned Power Plant Capacity (MWe)	Grant volume including Continuation Premium (in MUSD)	Planned investment volume (in MUSD)
AR 1	4	1	3	2	2,380	1,190	22	5,904
AR 2	5	3	2	3	955	740	13	1,313
AR 3	8	3	5	5	1,751	760	38	1,107
AR 4	9	4	5	3	366	168	35	980
<b>Total</b>	<b>26</b>	<b>11</b>	<b>15</b>	<b>6</b>	<b>5,452</b>	<b>2,858</b>	<b>108</b>	<b>9,303</b>



**ANNEX III**

<b>No</b>	<b>Project</b>	<b>Nature</b>	<b>Country</b>	<b>Applicant</b>
1	North-East Ghoubbet	Surface Study	Djibouti	ODDEG
2	Gisenyi	Surface Study	Rwanda	Energy Development Corporation Limited (EDCL)
3	Emuru-Angogolak	Surface Study	Kenya	Diamond Grip Construction Company Ltd.
4	Buranga	Surface Study	Uganda	GIDS Geothermal
5	Natron	Surface Study	Tanzania	TGDC
6	Panyimur	Surface Study	Uganda	Geothermal Resources Department
7	Dimbil-Dirdir (Goros)	Drilling	Djibouti	ODDEG
8	North West Assal	Drilling	Djibouti	ODDEG
9	Fantale	Drilling	Ethiopia	Cluff Geothermal Ltd
<b>Total possible grants</b>			<b>46.3</b>	<b>M USD</b>

2018

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