

East Africa Donors' Coordination Meeting

Geothermal Risk Mitigation Facility GRMF



Implementation Report of Geothermal Risk Mitigation Facility

Addis Ababa, Ethiopia

13 -14 June 2016

Eng. Rashid Ali Abdallah
GRMF Project Manager

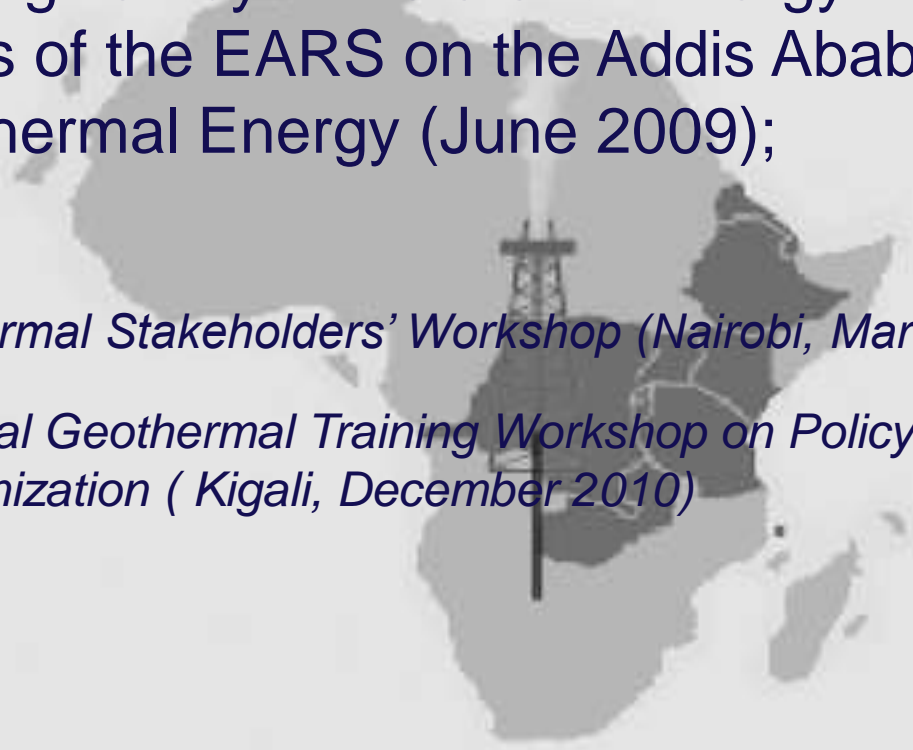
Content

- Introduction
- Outcome of 1st, 2nd and 3rd Application round
- Challenges
- Regional geothermal Programme Activities
- Recommendation and Way forward



REGIONAL GEOTHERMAL PROGRAMME

- Mandate given by Ministers for Energy from the 11 countries of the EARS on the Addis Ababa Declaration on Geothermal Energy (June 2009);
 - *Geothermal Stakeholders' Workshop (Nairobi, March 2010)*
 - *Regional Geothermal Training Workshop on Policy Development and Harmonization (Kigali, December 2010)*



REGIONAL GEOTHERMAL PROGRAMME

Regional Geothermal Workshops Recommendation to AUC:

- Create awareness to promote adequate commitment
- Take roles in minimizing the risk of up front cost ;
- Take initiative to improve technical information and data base;
- Participate in capacity building targeting both public and private sector (Regional Training Institution & Centers of Excellency)
- Coordinate the supporting programmes;
- Assist government by proposing guideline , technical assistance, facilitate collaboration and experience exchange

Geothermal Risk Mitigation Facility (GRMF)



www.grmf-eastafrika.org

Geothermal Energy Development - Risks

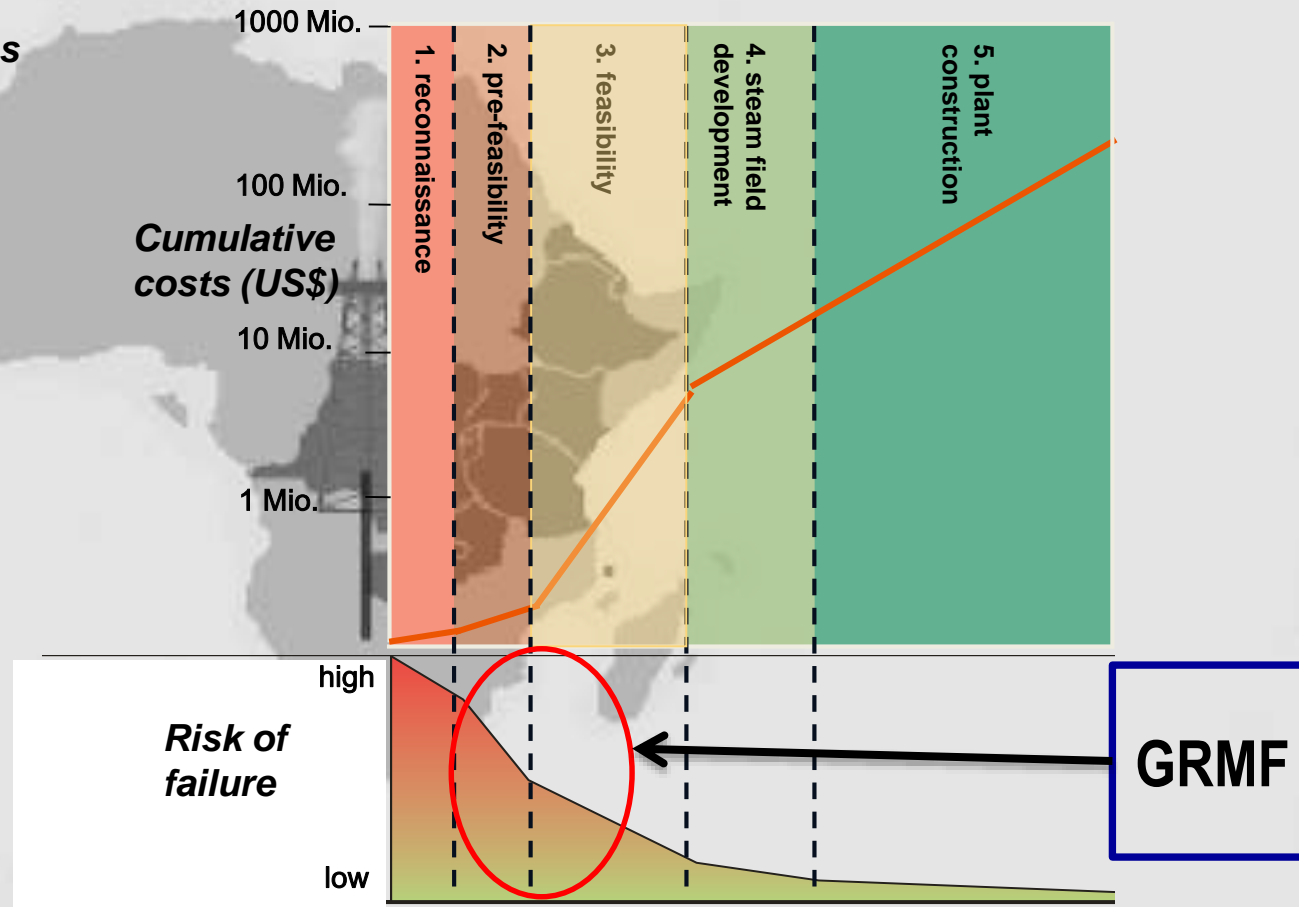
Significant upfront costs at high risk – before the success of the project has been secured !



Public and private investors to invest in Geothermal Energy



Filling the gap: Public support mechanisms are crucial to remove entry hurdles into geothermal power development



Amended based on Sinclair, Knight & Merz

ELIGIBLE ENTITIES:

- Public Companies
- Private Companies
- Public Private Partnerships (PPP)

Donor:
BMZ
DFID
EU-ITF

ELIGIBLE COUNTRIES:

- Ethiopia, Kenya
- Rwanda, Tanzania,
- Uganda, Burundi,
- Comoros, Djibouti,
- DRC, Eritrea
- Zambia.

Regional Geothermal Programme :

+ Malawi, Mozambique,
Sudan, Egypt

GRMF FINANCIAL SUPPORT

- ❑ **Infrastructure grants:** Up to 20% of the costs for infrastructure for surface studies drilling programmes (access roads, water pipe)
- ❑ **Surface studies grants:** Up to 80% of the costs (excluding infrastructure costs)
- ❑ **Drilling grants:** Up to 40% of the costs of drilling two exploration wells and testing programme for reservoir confirmation (excluding infrastructure costs)
- ❑ **Continuation Premium:** Up to 30% of the developer's share for the drilling and testing programme in case developers wish to continue with project (depending on the availability of funds).

QUALIFICATION AND IMPLEMENTATION PHASES FOR GRMF GRANT

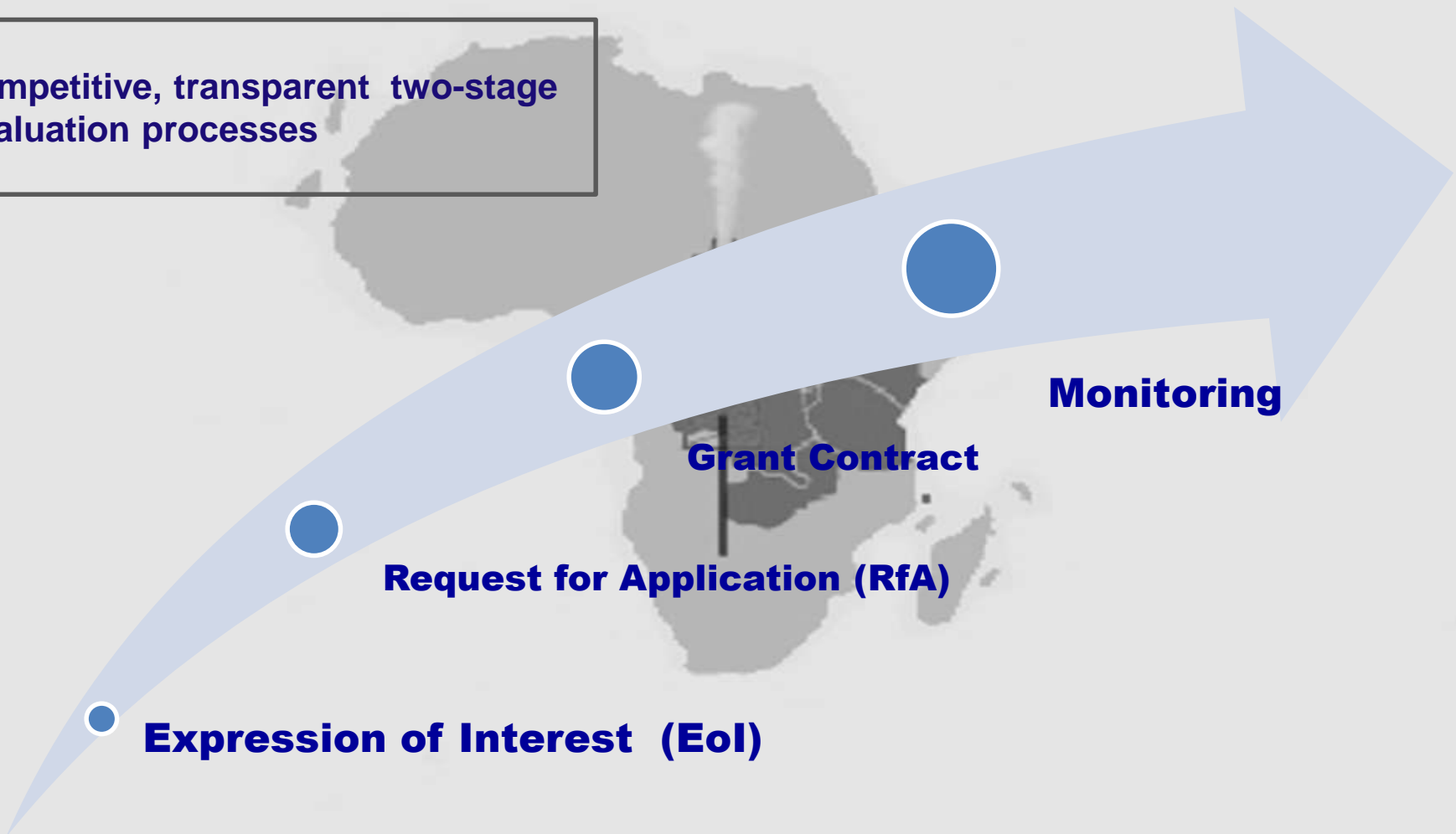
competitive, transparent two-stage evaluation processes

Expression of Interest (Eoi)

Request for Application (RfA)

Grant Contract

Monitoring



OUTCOME of 1st APPLICATION ROUND

(Ethiopia, Kenya, Rwanda, Tanzania, Uganda)

□ List of projects awarded GRMF Grant

Project	Applicant	Type of Project	Awarded Grant USA	Grant Signing
Dofan (Ethiopia)	Geological Survey of Ethiopia (GSE)	Surface Study	976,872	3 rd March 2014
Corbetti (Ethiopia)	Reykjavik Geothermal	Drilling	5,594,821	26 May 2014
Bogoria-Silali (Kenya)	Geothermal Development Company (GDC)	Drilling	4,251,652	3 rd March 2014
Longonot (Kenya)	Africa Geothermal International Ltd. (Agil)	Drilling	6,098,941	27 November 2013

OUTCOME of 2nd APPLICATION ROUND

(Burundi, Comoros Islands, Djibouti, D. R. Congo, Ethiopia, Eritrea, Kenya, Rwanda, Tanzania, Uganda, Zambia)

❑ List of projects awarded GRMF Grant

Project	Applicant	Type of Project	Awarded Grant USA	Grant Status
Karthala (Comoros)	Finished			
Fantale (Ethiopia)	Field work finished			
Tulu Moye (Ethiopia)	Field work finished			
Akiira One (Kenya)	Finished			
Suswa (Kenya)	Geothermal Development Company (GDC)	Drilling	6,579,017	Pending

OUTCOME OF 3rd APPLICATION ROUND

(Burundi, Comoros Islands, Djibouti, D. R. Congo, Ethiopia, Eritrea, Kenya, Rwanda, Tanzania, Uganda, Zambia))

Project	Applicant	Type of Project	Awarded Grant USA	Grant Signing
Barrier (Kenya)	Olsuswa energy ltd Private	Surface Study	980,568	2 nd half 2016
Butajira (Ethiopia)	Cluff Geothermal – Private	Surface Study	609,200	
Arta (Djibouti)	Djibouti Office for Development of Geothermal Energy	Surface Study	928,007	
Karthala (Comoros)	Bureau géologique des Comores	Drilling	8,328,856	
Fantale (Ethiopia)	Cluff Geothermal – Private	Drilling	3,811,102	
Korosi (Kenya)	GDC	Drilling	4,565,259	
Paka (Kenya)	GDC	Drilling	5,162,910	
Kinigi (Rwanda)	Energy Development Corporation Ltd	Drilling	4,439,444	

PROJECTS AWARDED GRANTS IN 1st , 2nd & 3rd APPLICATION ROUND

- ❑ 17 Projects awarded Grants.
- ❑ 7 grants awarded to Surface Studies
- ❑ 10 grants awarded to Drilling Programmes
- ❑ Most projects from Kenya and Ethiopia
- ❑ One project from each Djibouti, Rwanda and Comoros
- ❑ The total grants awarded is USD 58.5 Million



1 st Application Round	2 nd Application Round	3 rd Application Round
● Drilling Programmes	● Drilling Programmes	● Drilling Programmes
■ Surface Studies	■ Surface Studies	■ Surface Studies

CHALLENGES

❑ Quality of Application:

- 1st AR : 4 projects out of 11 Eols qualified for grants;
- 2nd AR : 4 projects out of 16 Eols qualified for grants;
- 3rd AR : 8 projects out of 16 Eols qualified for grants.

❑ Improvement:

- Technical support to developers (public entities)
- Procedure of awarding concessions (Private Developer)
- Improve geothermal data and understanding the resource
- Quality of technical support

CHALLENGES

❑ Secure Developers' Own Share:

- GRMF contribution: 40% for the DP , 80% for SS; 20% for infrastructure and 30% CP.
- Developer Own Share: 60% for the DP , 20% for SS; 80% for infrastructure
- Difficulty to secure the developer's own share specially for DP and infrastructure

❑ Improvement:

- Early planning for fund mobilization
- Government Commitment for public entities
- Involve banking sector to ease leading to developer
- Complementary finance mechanism (loan guarantee, support drilling insurance premiums)

CHALLENGES

❑ Institution and Legal framework:

- Absent of dedicated institutions for geothermal development
- Institutions in Kenya –GDC, recently Djibouti, Tanzania, Rwanda, Ethiopia?, Uganda?.
- Institutions based on available resource and business model

❑ Improvement:

- Dedicated institution with adequate capacity.
- Clear mandate base on the available resource
- Clear role for private sector
- Government Commitment for public entities



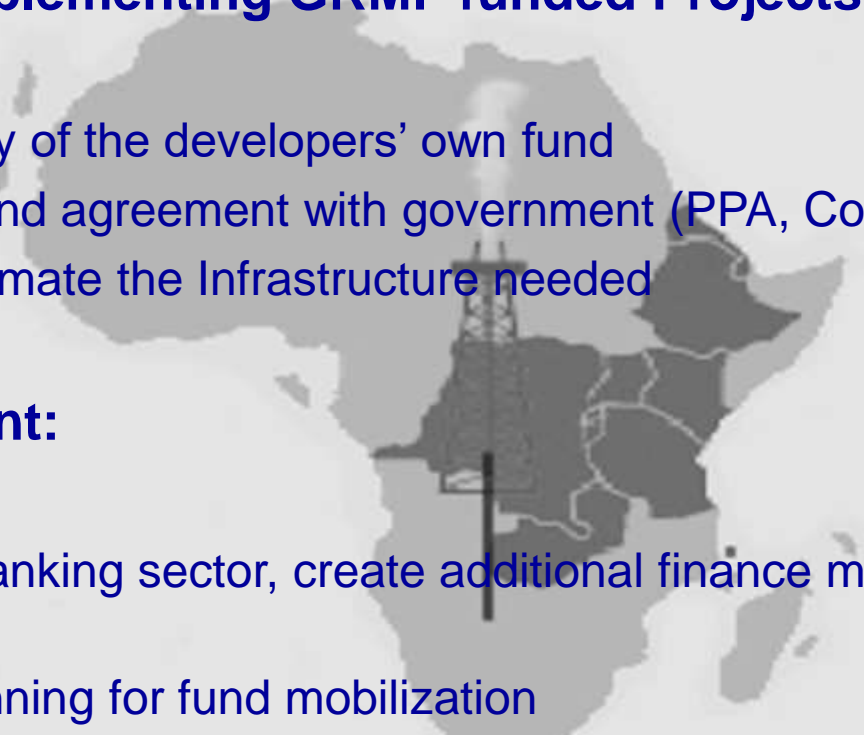
CHALLENGES

❑ Delay in Implementing GRMF funded Projects:

- Availability of the developers' own fund
- Permits and agreement with government (PPA, Concession)
- Underestimate the Infrastructure needed

❑ Improvement:

- Involve banking sector, create additional finance mechanism and insurance
- Early planning for fund mobilization
- Enabling environment for private sector



CHALLENGES

❑ Limited Availability of Experts:

- One of the recommendation in Kigali workshop, December 2010
- “Regional Training Centre “ concept note discussed in the Donors’ Coordination meeting in May 2014
- Skill gap analysis done by UNEP
- Feasibility study for “ Africa Geothermal Centre of Excellency ” done in 2015 (AUC, UNEP, GDC, Kengen)

❑ Improvement:

- “ Africa Geothermal Centre of Excellency ” will present later

CHALLENGES

❑ **Limited participation from beneficiaries countries :**

- Most grants awarded to projects in Kenya and Ethiopia
- Burundi, DRC and Zambia never submitted application to GRMF
- Eritria, Uganda and Tanzania submitted application and not qualified.

❑ **Improvement:**

- *More government commitment from those countries*
- *Mobilize technical support to explore and understand resources*
- *Sensitization campaign*

Regional Geothermal Programme Activities

□ MoUs signed with:-

- UNEP
- USAID – Power Africa
- MoFA – Iceland (ICEIDA)
- BGR - Germany
- MoFA – New Zealand (Drilling Code)
- Member of “Global Geothermal Alliance” .

□ MoUs cover:

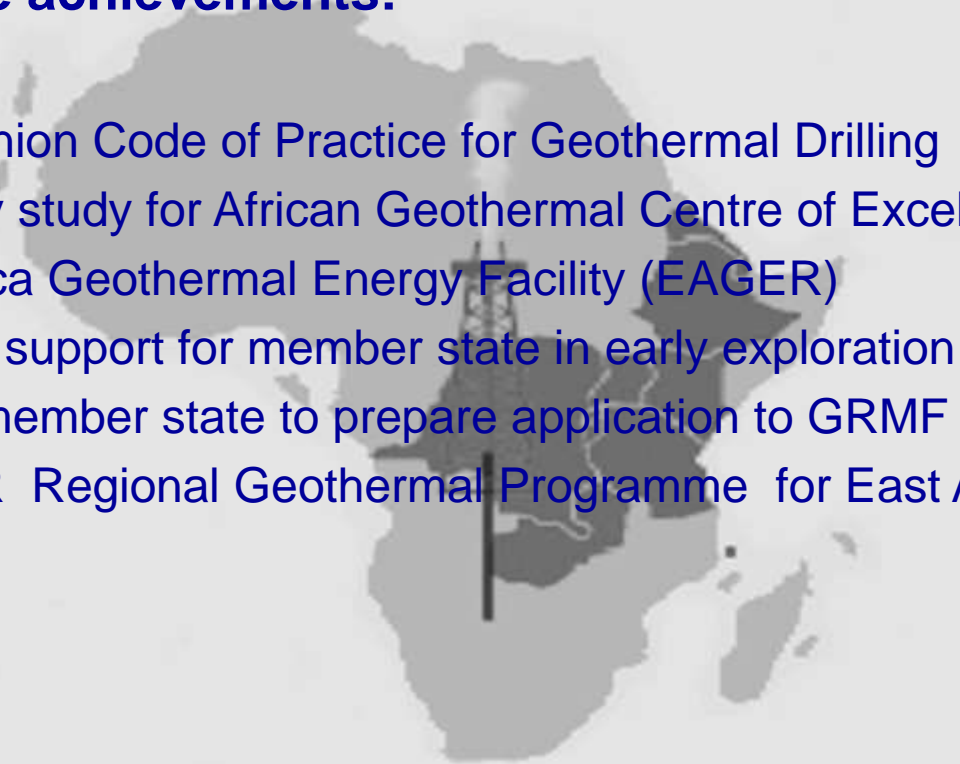
- *Technical Assistance for geothermal exploration*
- *Capacity building*
- *Regional networking, awareness creation,*
- *Policy development and harmonization;*
- *Joint programming and implementation.*



Regional Geothermal Programme Activities

□ Some of the achievements:

- African Union Code of Practice for Geothermal Drilling
- Feasibility study for African Geothermal Centre of Excellence
- East Africa Geothermal Energy Facility (EAGER)
- Technical support for member state in early exploration
- Support member state to prepare application to GRMF
- New BGR Regional Geothermal Programme for East Africa



Regional Geothermal Programme Activities



Recommendation and Way forward

- ❑ Continue mobilizing technical and financial support to GRMF focused countries
 - ❑ Countries to support public and private developers to implement GRMF funded projects
 - ❑ Countries to benefit from available technical support from development partners in coordinated manner
 - ❑ Support the initiative of African Centre of Excellency
 - ❑ Support adaptation of African Union Code of Practice for Geothermal Drilling
- 



Thank you for your Attention

Visit us on www.grmf-eastafrika.org