STATUS OF GEOTHERMAL RESOURCE EXPLORATION AND DEVELOPMENT IN ETHIOPIA AND CONSTRAINTS AND REQUIREMENTS

SOLOMON KEBEDE
solo450354@yahoo.com

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Nairobi, Kenya
PRESENTATION OUTLINE

• STATUS OF GEOTh. EXPL. & DEVELOPMENT
• CURRENT ACTIVITIES AND FOREIGNN ASSISTANCE
• FIVE TO TEN YEARS STRATEGIC PLAN
• FAVORABLE CONDITIONS FOR GEOTHERMAL DEVT
• CONSTRAINTS AND REQUIREMENTS
HAS ONE OF THE LARGEST GEOTH. RESOURCE IN AFRICA

THESE RESOURCES ARE DISTRIBUTED IN THE ETHIOPIAN RIFT VALLEY FROM SOUTH WEST TO NORTH EAST

ABOUT 16 GEOTHERMAL PROSPECT AREAS HAVE BEEN IDENTIFIED SUITABLE FOR POWER GENERATION

THE TOTAL GEOTHERMAL POTENTIAL IS ESTIMATED TO BE GREATER THAN 5000MWe
FROM THE 16 PROSPECTS

• ONLY TWO AREAS WERE SUBJECTED TO DRILLING

• ALUTO-LANGANO AND

• TENDAHO
8 deep wells have been drilled.

Four wells are productive with a max. temperature of 350 °C.

A 7.2 MWe pilot plant has been installed and operating.

A feasibility study to expand the field to about 50 Mwe is on progress.
• 3 DEEP (2100 m) & 3 SHALLOW WELLS (500m) HAVE BEEN DRILLED

• THE 3 SHALLOW WELLS ARE PRODUCTIVE WITH MAXIMUM TEMP = 260°C

• ADDITIONAL GEOSCIENTIFIC WORK TO LOCATE THE DEEP RESERVOIR IS REQUIRED
There are six other prospects where semi-detailed investigations are completed.

These are: Abaya, Corbetti, Tulu Moye, Gedeansa, Fantale and Dofan.

The total projected potential from these areas is over 400 MWe.

The next phase of work in these areas is to conduct additional geoscientific work for well siting and conduct exploratory drilling.
STATUS CONTD …… (RECONAISANCE STAGE)

EIGHT PROSPECTS

• THERE ARE TEN OTHER PROSPECTS WHERE SEMI DETAILED INVESTIGATIONS ARE COMPLETED

• THESE ARE: WENDOGENET, NAZRETH, METEKA, TEO, DANAB, DAMALI, BOINA AND DALLOL

• RECONAASSANCE STUDIES IN THESE AREAS HAVE INDICATED A GOOD POTENTIAL FOR POWER GENERATION

Fig.1 Location Map of the Geothermal Prospect Areas with in the Ethiopian Rift Valley
CURRENT ACTIVITIES AND FOREIGN ASSISTANCE

- Preparatory work to drill four Appraisal deep wells at Aluto (WB + Japan)
- Preparatory work to conduct Geo-Scientific Studies to locate deep well sites at Tendaho (BGR)
- Training from UNU-GTP
STRAIGHTIC PLAN FOR THE NEXT FIVE TO TEN YEAR

• The plan is to develop additional 10,000 MWe in the next 10 years from all available energy resources.

• The share of geothermal from these is about 125 Mwe in the Next Five Years and Additional 375 MW by 2020.
FAVORABLE CONDITIONS IN GEOTHERMAL INVESTMENT

- HIGH DEMAND FOR POWER AND ENERGY MIX
- GOVERNMENT IS COMMITTED FOR PRIVATE SECTOR PARTICIPATION

To attract the private sector participation:

- Legal framework is being set up which include: Feed in Tariff (Geothermal 8-10 US cents per kWh for 20 yrs)
- Incentive Package for Investors is Available

- Geothermal is included in the Master Plan
- BOO, BOT, BOOT and feed in Tariff are open to negotiation
REQUIREMENTS AND AVAILABLE RESOURCES

• TECHNICAL ASSISTANCE TO LOCATE DEEP WELLS AND DRILL CONFIRMATION WELLS

• TECHNICAL ASSISTANCE TO ADVISE IN INSTITUTIONAL SET UP AND INVESTORS PACKAGE

• FINANCE INTERMS OF LOAN OR GRANT FOR GEOTHERMAL DEV'T

• TECHNICAL ASSISTANCE IN LOCAL CAPACITY BUILDING

LOCALLY AVAILABLE RESOURCES

→ TWO DRILLING RIGS WITH DRILLING STAFF

→ BASICALLY WELL EQUIPED LAB FACILITIES

→ FAIR NUMBER OF GEOSCIENTIFIC AND ENGINEERING STAFF
Geothermal is Environmentally Friendly!

Thank you!