



RÉGION ACADÉMIQUE
PAYS DE LA LOIRE

MINISTÈRE
DE L'ÉDUCATION NATIONALE,
DE L'ENSEIGNEMENT SUPÉRIEUR
ET DE LA RECHERCHE



BACCALAUREAT GENERAL ET TECHNOLOGIQUE

ÉPREUVE SPECIFIQUE MENTION

« SECTION EUROPÉENNE OU DE LANGUE ORIENTALE »

Académie de Nantes, binôme : Anglais/SVT

Thème 3 – Enjeux planétaires contemporains

2-A – Géothermie et propriétés thermiques de la Terre

ETHIOPIA LOOKS TO REALISE ITS GEOTHERMAL ENERGY POTENTIAL

Use the documents and your knowledge to explain:

- Why Ethiopia has a real geological potential to tap geothermal energy.
- Why this source of energy is interesting.
- What the main risks are in this area.

Doc 1: Ethiopian project

1 Ethiopia, like its fellow Great Rift Valley countries, has enormous geothermal energy potential. However, the costs involved and the need for skilled expertise have, until now, been major obstacles.

In late January, the Development Bank of Ethiopia announced that, over the next five months, it will offer an initial \$20m to kickstart geothermal energy projects in the country's private sector as part of a program funded by the World Bank. A further \$20m is expected to be made available at a later stage.

5 The money will help cover the costs of early exploration and drilling activities. When drilling proves successful, the bank will invite private investors to lead geothermal projects and develop power plants in Ethiopia. Cluff Geothermal – a British company – is interested in the geothermal potential in east Africa and has been shortlisted to develop a large geothermal project in Kenya's Menengai district.

10 "In Ethiopia we have conducted a scoping environmental impact assessment on a site close to the town of Metehara," says Cluff managing director George Day. "The government of Ethiopia has strong commitments to developing geothermal as part of its energy mix. We must remain patient while the country's regulatory framework is prepared for independent power producers such as ourselves. We are confident that this will be in the next six months."

15 East Africa's potential in this area is considerable, says Professor Paul Younger of Glasgow University. "Geothermal development in Kenya is far and away the principal success story to date, albeit¹ Ethiopia is about to upgrade their Aluto Langanu power plant from a nominal 8.3 MWe pilot to 75 MWe full scale. At present, all other countries along the Rift are only at preliminary study stage, but there will almost certainly be other developments at considerable scale in Djibouti and, if they ever get out of the political morass², Eritrea, and likely also in Tanzania and Uganda at the very least."

20 Massive water resources generated in its high plains mean Ethiopia has an estimated hydropower potential of up to 45,000 MW, the second highest in Africa. Hydropower generates 86% of electricity in Ethiopia, a boon³ for a country with low levels of per-capita access.

25 The risks of overdependence on hydropower, and the need to diversify the country's energy sources to ensure a stable supply, are understood by the Ethiopian Electric Power Corporation (Eepco), the state provider.

"The rainfall in Ethiopia varies considerably from year to year, therefore an overdependence on hydropower makes the energy supply very unstable, while instability of supply creates negative impacts on industry and the economy," says Eepco's Mulugeta Asaye. "After hydropower, geothermal energy development is the second priority for Ethiopia."

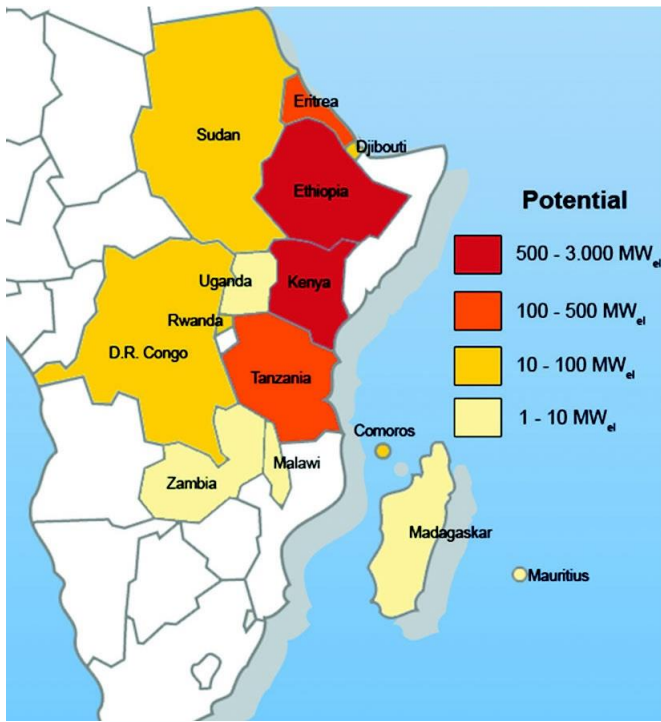
30 Ethiopia's ambitious five-year growth and transformation plan, which began in 2010, aims to increase the existing 2,179 MW generating capacity at least fourfold.

"Studies at various exploration phases have been carried out since 1969 and indicate that geothermal energy could generate up to 5,000 MW," says Asaye.

The Guardian.com, Matthew Newsome, 13/02/2013

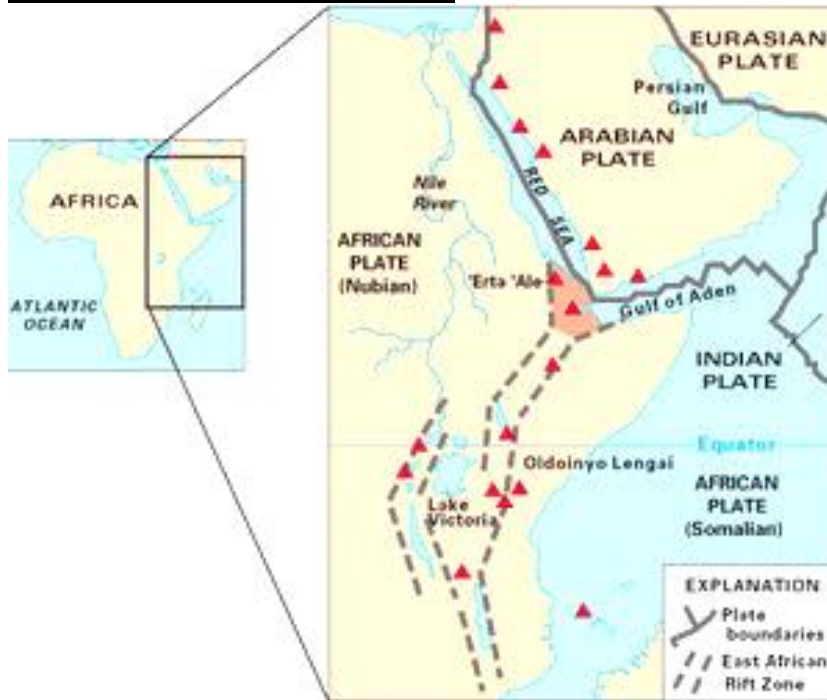
1. Albeit: quoique
2. Morass: marécage
3. Boon: aubaine

Doc 2: Potential of geothermal energy in East Africa.



<http://www.lapsedphysicist.org>

Doc 3: Geodynamics in East Africa.



<http://www.cs.mcgill.ca>