REQUEST FOR TECHNOLOGY ASSISTANCE TO SUPPORT THE DEVELOPMENT OF GEOTHERMAL ENERGY IN UGANDA: THE PROCESS

Maxwell Otim-Onapa
Uganda National Council for Science and Technology, NDE Uganda
To increase the use of modern renewable energy, from the current 4% to 61% of the total energy consumption by the year 2017.

Geothermal energy is one of the possible alternative renewable energy sources in Uganda, which will supplement other sources of energy.

Uganda has an estimated potential of approximately 450 MW of untapped geothermal energy resource.

However, the geothermal market in the country is still in its infancy and faces four major barriers, including:

(i) Risks associated with resource exploration and development;
(ii) Large up-front cost;
(iii) Inadequate skilled manpower;
(iv) Limited private investment; and,
(v) Lack of a clear and coherent geothermal policy, legal, regulatory and institutional framework.

Objective
The main objective of this CTCN assistance is to address the policy and regulatory barriers for geothermal energy development in Uganda with a view to attract geothermal investment in terms of Public Private Partnerships (PPP) and Independent Power Producers (IPP).
Uganda is a geothermal country due to its geological location.

Uganda has 450-1500 MW geothermal energy potential

50-150% of current installed power capacity

Surveys are ongoing, but no exploration drilling ⇒ resource untapped at present
Technical Assistance (TA) request

Initiation of Request

_request finalised late 2014 to address:

- "...lack of legislative and regulatory regimes constraining licensing of geothermal exploration"
- "Supportive policy needed to attract private investors"
- "Existing set of policies and programs aimed at affordable and efficient renewable energy may also need to be reviewed"

Benefits include:

- Incorporation of geothermal in national power plan
- Promote and facilitate geothermal development, including private sector developers
- Clarify and reinforce Geothermal Resources Development Department mandate and mission
- Provide clear legal and regulatory framework for geothermal energy

Approved by Climate Technology Centre and Network, and tendered to Network members late 2015
Jan 2015

The Climate Technology Centre and Network (CTCN) acknowledged receipt of CTCN Request Submission Form received on January 16, 2015 and entitled "Formulating Geothermal Energy Policy, Legal and Regulatory Framework".

Request assigned request reference number 2015-022/UGA-01.

Request for assistance screened by a CTCN Climate Technology Manager for completeness and assessed against the CTCN request prioritization criteria. This screening and assessment process will take a maximum of 2 weeks.

**During Screening**
Additional clarification/additional information sought.

Project deemed complete, the appraisal concluded and I was notified the outcome by the Climate Technology Manager.
## Request Expert Team (RET) Decision

<table>
<thead>
<tr>
<th>Country:</th>
<th>Uganda</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title of the request:</strong></td>
<td>Formulating Geothermal Energy Policy, Legal and Regulatory Framework</td>
</tr>
<tr>
<td><strong>CTCN Request Reference Number:</strong></td>
<td>2015-022/UGA-01</td>
</tr>
<tr>
<td><strong>Date of submission:</strong></td>
<td>January 16, 2015</td>
</tr>
<tr>
<td><strong>Date of appraisal/eligibility notification:</strong></td>
<td>January 26, 2015</td>
</tr>
<tr>
<td><strong>Climate Technology Manager:</strong></td>
<td>Jonathan Duwyn</td>
</tr>
</tbody>
</table>
| **Consortium Partners that have expressed interest in joining the RET:** | • National renewable Energy Laboratory (NREL)
  • Energy research Centre of the Netherlands (ECN)
  • UNEP - African Rift Geothermal Development Facility Project (ARGeo) |

**Decision:**
Based on their knowledge, expertise and experience, the following Consortium partner has been selected to form the RET with the Climate Technology Manager:

- UNEP/ARGeo (Mesoret Zemedkun) for overall technical coordination and strategic guidance/lead on the response plan development
- NREL/CESC (David Jacobs) as main drifter/developer for the response plan (in-kind from CESC co-financing to CTCN)

The RET will refine this request and develop a response plan for the request, in collaboration with the NDE of Uganda and the request applicant.

<table>
<thead>
<tr>
<th>Name:</th>
<th>Jukka Uosukainen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title:</strong></td>
<td>Director</td>
</tr>
<tr>
<td><strong>Date:</strong></td>
<td>16/03/2015</td>
</tr>
<tr>
<td><strong>Signature:</strong></td>
<td>[Signature]</td>
</tr>
</tbody>
</table>
Identification of the implementing partner
The tendering process completed for the Geothermal regulation formulation request.
A consortium of consultancy companies led by Carbon Counts selected and signed the contract, hence are ready to start activities

22 Dec 2016

Implementation
Please find attached our Inception Report in relation the above Technical Assistance Project supported by the CTCN.
Review process

✧ Response plan
✧ Hand-holding and guiding the proponent based on guidelines
✧ Back and forth – planned use of technical committee to undertake review
✧ Informal request for review by expertise in a specific field
Activity: Stakeholder Engagement
Challenges

- The NDE office – the staffing
- Support to follow up the implementation
- Reporting implementation (M&E) system
- Relationship (tripartite)
Thank you for your attention!!!!