

"2018 was another exciting year for the Energy Team of the UN Environment Africa Office. We close the year in good spirits by reflecting on some of the highlights of our progress in the year documented below. In 2018, UN Environment Africa Office included "Energy" as one of its three strategic priorities, which arose from the urgency to support, coordinate and facilitate the tasks of the "Energy-Environment-Development" nexus for realization of the objective of sustainable development in Africa. This has been in the context of realization of "Global and Continental Development Agendas: (i) 2030 Sustainable Development Goals; (ii) Africa Union Agenda 2063, and (iii) Paris Agreement 2015" through an integrated approach of decentralized, de-carbonized, de-risked investment and democratized energy paradigm services. We thank our organization, member states and partners for the support, guidance and advice. We look forward to another exciting year in 2019."

(A) AFRICA RIFT GEOTHERMAL DEVELOPMENT FACILITY (ARGeo)

(B) AFRICAN GEOTHERMAL CENTER OF EXCELLENCE (AGCE)

(C) CATALYZED CLEAN ENERGY ACCESS & ENERGY EFFICIENCY IN AFRICA

(D) REGIONAL RESPONSIVE RENEWABLE ENERGY INFORMATION SYSTEMS

(E) PARTNERSHIP & RESOURCE MOBILIZATION

(i) Catalysed investment in geothermal energy development in ARGeo member countries

- The enhanced conceptual model of Baringo-Silali geothermal prospect, Kenya through the ARGeo programme in 2016 has now started its further investment through drilling of deep geothermal wells for power generation. For details: http://geothermalresourcescouncil.blogspot.com/2018/12/kenya-geothermal_27.html
- The conceptual models of geothermal prospects in Tanzania (Ngozi-Keijo-Songwe) developed in 2016 through the ARGeo programme were enhanced by EAGER and MFA-ICEIDA in 2018. UN Environment has played an active role in reviewing and optimizing results of these studies during the technical review meeting held in Tanzania in November 2018. These efforts catalyzed investments a total of about 100 MUSD for the Ngozi-Songwe (Tanzania) geothermal project. The support and investment from Africa Union Commission's Geothermal Risk Mitigation Facility and Government of Tanzania are confirmed and from Africa Development Bank as well as Africa Infrastructure Trust fund are under negotiation.



Participants of the Technical Review Meeting in Dar Es Salaam, Tanzania November 2018

(ii) Agreed with CTCN a Technical Assistance for Geothermal Direct Use Projects in ARGeo member countries

The UN Environment Climate Technology Center and Network (CTCN) announced a technical assistance for direct use applications of geothermal resources during the seventh Africa Geothermal Conference in November 2018. Direct utilization of geothermal resources is one-way countries can meet their greenhouse gases reduction quotas since it will displace the use of biomass and fossil fuels. It is also great for fighting hunger and poverty by enhancing the livelihoods of communities living in geothermal-rich localities.



Delegates from CTCN, UN Environment and country representatives

(iii) ARGeo C7 Stimulated geothermal interest in the region and mainstreamed Direct Use application for geothermal power development (October-November 2018)

Spurred renewed interest in harnessing the huge geothermal potential in the region with a focus on mainstreaming Direct-use application in geothermal development, through the organization of the 7th African Rift Geothermal Conference (ARGeo-C7) that was held in Kigali, Rwanda. The success of this Conference is reflected, among others, by the big attendance (more than 350 delegates) of the main conference, the 140 successful presentations delivered at the Conference.



Group Photo of the ARGeo-C7 Main Conference in Kigali, Rwanda (29 October - 4 November 2018)



Group Photo during the visit at the Karisimbi Geothermal wellhead on 3rd November 2018 (ARGeo-C7)

Transformed the African continent through Capacity and skill development in Geothermal science and Technology

Through the Interim Project Coordination Unit of the African Geothermal Centre of Excellence (IPCU-AGCE) empowered more than 150 home grown experts through UN Environment, to tap into Africa's 20,000 MW Geothermal Energy. These are women and youth from the thirteen African countries (Burundi, Comoros, Djibouti, Democratic Republic of Congo, Eritrea, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda and Zambia). These experts have developed their capacities and skills in the complete geothermal development value chain; from exploration to development and utilization as geoscientists, engineers and managers. They are currently working on geothermal projects in their countries to maintain the impetus and momentum of geothermal resource exploration and development in the region

The above includes:

(i) Four parallel Pre-ARGeo C7 short courses where a total of 113 geothermal scientists, engineers and planners from 12 East African countries and other parts of the world were trained. The short courses offered were: (i) Short Course 1: Management and financing for Geothermal project development; (ii) Short Course 2: Low temperature geothermal systems and direct use application; (iii) Short course 3: Geothermal Reservoir engineering and modelling; (iv) Short Course 4: Geothermal Resource Decision Modules 1 and 2: Volcanic and Deep Circulation Models



Delegates at the opening session of the Pre-Conference Short Courses



Partners and Country representatives for the certificate award ceremony of the Pre-Conference Short Courses during ARGeo-C7

(ii) the First Level-1 geothermal training on 'Introduction to geothermal science and technology' organized jointly by UN Environment and AU-Africa Energy Commission (AFREC): Strengthened and enhanced the capacities and skills of a total of 21 young African in geothermal science and technology that came from eleven Eastern African countries. The training was held in Naivasha using Geothermal Development Company (GDC) and Kenya Electricity Generating Company (KenGen) in Naivasha.



Graduates of the Level-1 geothermal training in Naivasha, Kenya May 2018



Trainees doing their assessments training in Naivasha, Kenya May 2018

(i) Enhanced Private sector engagement and developed technical skills through the Africa Women Energy Entrepreneurs Framework (AWEEF)

Enhanced private sector engagement in implementing innovative environmental solutions in the areas of policy, skills, knowledge, technology and finance to empower women in the energy sector. This was through the High-Level Luncheon on: 'Business Opportunities for women in a changing Energy Value Chain in Africa' organized jointly by Africa office and Private sector unit, Governing Affairs Office during the Seventh Special Session of the African Ministerial Conference on Environment (AMCEN) in September 2018.



UN Environment and AWEEF members at the High-level Luncheon in Kenya, September 2018

Micro-Grid training: Developed both technical and business skills to over 25 women entrepreneurs and youth that will enhance access to energy in rural areas. This was through UN Environment and RES4Africa jointly organized micro-grid training held at KPLC Nairobi, Kenya in April 2018.



Women and youth participants for the Micro-Grid training at the Kenya Power Lighting Corporation (KPLC) in Kenya, April 2018



Partners and women & youth participants for the Micro-Grid training Meeting at the UN Environment headquarters in Nairobi, Kenya

Developed project proposals on various pillars of the Libreville Outcome Statement of the workshop on Women Entrepreneurs and Sustainable Energy (WESE) held during the 16th session of the African Ministerial Conference (AMCEN-16) in Gabon. These were through the African Women Energy Entrepreneurs Framework (AWEEF) to target various climate financing.

(ii) Adopted a desk study report on Biomass Energy production and utilization in Africa

Member states and Partners adopted the UN Environment Desk Study Report on Biomass Energy in Africa during the jointly organized UN Environment and African Union Commission Regional Consultative Workshop on Sustainable Biomass Energy Production, Marketing and Utilization in Africa, held at the AUC headquarters in Addis Ababa, Ethiopia in November 2018. The workshop agreed to develop a clear and coherent regional policy guideline on sustainable biomass energy production, marketing and use in support of the region's transition to affordable, reliable, sustainable and modern energy



Participants during the Consultative Workshop on Sustainable Biomass Energy in Addis Ababa, Ethiopia November 2018

Connected and consolidated more than 10,000 users such as energy experts, private developers, civil societies, government and non-government organizations through:

(i) Disseminated monthly edition of Africa Renewable Energy Electronic News (on line)

(ii) Promoted the Renewable energy projects and initiatives via social media through twitter and Facebook

(iii) Developed various websites such as ARGeo (theargeo.org); AGCE (agce.theargeo.org), aweeef, Biomass (<http://theargeo.org/biomass.html>). The websites are dynamic and interactive, by keeping the information relevant and up to date.

(iv) Created Access of all geothermal related information in Africa through enhanced WEB GIS based Africa Geothermal Inventory Database. About 13 focal persons from African countries were trained focal to operate, manipulate and update the database in Djibouti in September 2017.

(v) Commenced the development of an E-learning geothermal online training system for the Africa Geothermal Centre of Excellence that was endorsed by the AGCE Steering Committee members during the ARGeo-C7 Conference at the Seventh AGCE Steering Committee meeting held in Kigali, Rwanda.



The seventh AGCE Steering Committee meeting held in Kigali, Rwanda (November 2018)

Two new partnership have developed in 2018. These include:

(i) On the sidelines of the 7th ARGeo conference, UN Environment and the Sustainable Development Goals Center for Africa (SDGCA) signed an MOU to collaborate in areas of mutual interest. Some of the key areas of cooperation include: enhancing environmental sustainability, maximizing the production of energy into other productive sectors such as water, agriculture, health and education, main-streaming energy efficiency and sustainable energy systems, regional networking, knowledge and information systems sharing, awareness creation, policy development and harmonization.



Delegates from UN Environment, SDGCA and witnesses from AUC and Rwanda Ministry of Infrastructure

(ii) A Memorandum of Understanding (MoU) between UN Environment and Renewable Energy Solutions for the Mediterranean and Africa (RES4Med&Africa) signed in December 2018. This is with a view to institutionalize their ongoing collaborations in provision of theoretical and practical trainings on access to energy and decentralized renewable energy solutions to women and youth in Africa, as well as water-energy-food nexus initiatives.

Currently a work plan is being developed with these partners to implement the tasks reflected in the MOUs.

(iii) Continuous partnership with AUC, MFA- Iceland, JICA, US Power Africa, AfDB, DFID, BGR, EU EIPDF, WB-ESMAP, Italian Development Cooperation, PACIA, Global CEO Alliance, All Regional centers on Renewable Energy and Energy Efficiency in Africa (EACREE, ECREEE, RCREEE, SACREEE).



NEXT MILESTONES:

- Continue to provide support in catalyzing geothermal investment in Africa both for power generation and direct uses. Direct use includes Resource assessment, Technology and marketing.
- Develop projects and programmes to mobilize resources and implement projects that empower women through the whole energy value chain using AWEEF.
- Develop a coherent regional strategy and policy guideline for sustainable biomass energy production, marketing and use in support of the region's transition to affordable, sustainable and modern energy.
- Start a joint "Renewable Energy Project" with BOAD and GEF to provide energy access through use of renewable energy resources including solar energy in eight UOMEA countries in West Africa.
- Continue facilitating a series of geothermal training courses including an e-learning platform under the auspices of the Interim Project Coordination Unit- Africa Geothermal Centre of Excellence and provide support in legalization and establishment of the full-fledged AGCE.
- Develop a regional energy programme that reflects "Energy" as one of the strategic priorities of UN Environment Africa Office.
- Continue to provide support in implementation of clean captives installation in Ghana, South Africa, Kenya and Nigeria.
- Continue to provide support to the preparation of the Eighth Africa Geothermal Conference (ARGeo-C8) to be held in Nairobi, Kenya 2020.

