

Thematic meeting
12 January 2020, 13:15 – 14:30, Room B1
St. Regis Hotel, Saadiyat Island, Abu Dhabi

**Global Geothermal Alliance:
Enabling Frameworks for Accelerated Geothermal Energy Development**

Summary report

Introduction

In the framework of the Tenth Session of the International Renewable Energy Agency (IRENA) Assembly, a thematic meeting of the Global Geothermal Alliance was held on 12 January 2020.

The meeting was a platform to inform the participants about the status of the activities undertaken under the GGA as well as the geothermal activities undertaken by members and partners in the recent past. It was also an opportunity for the participants to share about the challenges and experiences; and establish networks to support geothermal development at national and regional level.

Participants

1. **Representatives from Members:** Argentina, Colombia, Costa Rica, El Salvador, France, Iceland, Indonesia, Japan, Kenya, Mexico, Switzerland, Uganda, Turkey
2. **Representatives from Partners:** Asian Infrastructure Investment Bank, GEODEEP - French Geothermal Cluster for Heat and Power, Geothermal Canada, International Geothermal Association; International Renewable Energy Agency; Regional Centre for Renewable Energy and Energy Efficiency

In addition, representatives from non-members and non-partners who attended the meeting and made contributions include the Kingdom of Saudi Arabia, Nigeria, Saint Lucia and the Serbian Geothermal Association.

Key deliberations

- The constituency of the Global Geothermal Alliance includes 46 members and 39 partners. Six new partners joined the Alliance in 2019: Asian Infrastructure Investment Bank (AIIB), Caribbean Electric Utilities Corporation (CARILEC), Chinese Renewable Energy Industry Association (CREIA), Geothermal Canada, United Nations Industrial Development Organisation (UNIDO) and University of Geneva.
- In line with GGA's [action plan](#), the Alliance continued with regional engagement activities in East Africa and Latin America in the past year. In this regard, the regional engagements of the Alliance in **Latin America** include: the presentation of key lessons and recommendations for geothermal heat application in the agri-food sector to support development of geothermal resources in remote areas and continued collaboration and exchange of information with the Central American Integration System (SICA) and Deutsche Gesellschaft für Internationale

Zusammenarbeit (GIZ) GmbH in the framework of the Geothermal Development Programme in Central America. Other engagements in Latin America which could benefit from the activities of GGA include the on-going Renewable Readiness Assessment for El Salvador and the review of Nationally Determined Contributions as discussed in October 2019 during the regional workshop on energy transformation in Central America in the framework of the PRE COP25 in Costa Rica. As next step, a capacity building activity on agri-food applications is under development for implementation in 2020.

- In **East Africa**, key GGA members and partners are supporting the development of a regional geothermal market assessment, which will provide an updated status of geothermal development in the region; identify bottlenecks and provide recommendations for decision makers to support geothermal development, and inform further action by partners. The assessment is a follow up to a [Regional Workshop on Geothermal Financing and Risk Mitigation in Africa](#); co-organised by the African Union Commission, IRENA, the government of Japan and the government of Kenya in 2018 in Nairobi.
- In addition to the regional engagements, the GGA is supporting thematic activities aimed at promoting the utilisation of **geothermal energy for heating**.
- IRENA, under the umbrella of the GGA, implemented a thematic [capacity building on the integration of low temperature renewable energy resources in district heating and cooling networks](#). The capacity building was held in Belgrade, Serbia in the framework of 50th HVAC&R Congress in December 2019 in collaboration with the European Bank for Reconstruction and Development (EBRD). The event builds on a guidebook being developed by IRENA in collaboration with Aalborg University, and in consultation with a group of district heating and cooling practitioners drawn from GGA's members and partners. The objective of the guidebook is to inform decision makers at the local authority/municipal and national level on the available tools and options to facilitate the use of low temperature resources such as low temperature geothermal in the supplying district energy.
- **Advisory group of practitioners on district heating and cooling:** A result-oriented advisory group of experts from GGA members and partners and other key stakeholders from the district heating sector was launched in September 2019. The advisory group is supporting the on-going development of a guidebook for policy-makers developed by IRENA with Aalborg University and participated in an online consultation meeting held in October 2019.
- In the framework of GGA, the International Geothermal Association, World Bank's Energy Sector Management Assistance Programme and IRENA are finalising a joint project to introduce over 100 stakeholders to the [2016 UNECE specification for the application of United Nations Framework Classification for Fossil Fuel and Mineral Resources and Reserves 2009 \(UNFC-2009\) to geothermal energy resources](#). The joint project also involved piloting the application of the geothermal specification in classifying existing geothermal resources in Indonesia, a cluster of Eastern Caribbean Islands and Ethiopia. The objective of the project is to promote a standardised method of estimating and reporting geothermal potential to provide a concrete value proposition to investors, as the reporting can be comparable across

projects and countries along various types of resources. A forthcoming report will capture lessons learnt during the project, including the need for ownership of the classification process in each jurisdiction, branding UNFC as the standard methodology for attract investment to geothermal projects as well as prioritising capacity building on the UNFC.

- **GGA website:** It is being upgraded into a knowledge sharing platform for geothermal information including country and regional geothermal profiles, relevant tools, publications and events among others. Input and suggestions from members and partners are encouraged

During the open discussion session of the meeting, participants were updated about the geothermal activities and proposals from various members and partners.

- **Colombia** is undertaking activities to raise the profile of geothermal including through identification of potential geothermal sites and developing enabling frameworks. In addition, the country will host the Geothermal Congress for Latin America and the Caribbean in June 2020.
- **Saint Lucia** participated in the introductory training on the application of UNFC specifications for geothermal energy and is currently reviewing the status of various geothermal projects. In this regard, the application of the standard is considered very useful to access affordable capital.
- **Costa Rica** supported the statement by Saint Lucia, highlighting the key challenge of finance geothermal projects, especially for small countries.
- **El Salvador** announced the objective of the new government to complete, through LaGeo, the implementation of the two on-going projects in the country, i.e. in San Vicente and Chinameca and increase installed capacity in the Berlin geothermal field.
- **Japan** is involved in supporting geothermal development in East Africa, particularly in Ethiopia and Kenya through capacity development and technical assistance.
- **Kenya** is supporting other countries in East Africa to build human capacity for geothermal development through the activities being undertaken by its two public geothermal developers including in the framework of the Africa Geothermal Centre of Excellence (AGCE).
- **Uganda** is expected to drill 16 geothermal gradient wells in Kibiro, Hoima district and Panyimur in the first quarter of 2020 having signed a contract for the drilling services. Uganda has already drafted a geothermal policy which is at the cabinet discussion stage.
- **Indonesia** is working to improve the policy framework for geothermal energy and is engaging the World Bank for financial support to undertake further resource exploration. Despite the good geothermal resources, Indonesia is still finding it difficult to attract investment in geothermal projects. In addition, other renewable energy sources such as solar are considered cheaper to develop and attract lower tariffs than geothermal projects. Based on best practice from Turkey, Indonesia was advised to develop geothermal projects by using different strategies such as allowing different tariffs for different geothermal fields due to diverse topography which affects the cost of projects and developing power plants of smaller size.
- **Canada** is considering the development of geothermal projects in the western sedimentary basin for electricity and direct uses. The government of Canada is keen to de-risk geothermal projects and is thus supporting the development of two geothermal projects with funding of US\$ 50 million.

- **AIIB** was involved in supporting geothermal projects in Turkey and has interests to support other geothermal projects in Ethiopia, Indonesia and the Philippines;
 - The bank can do both sovereign and non-sovereign projects including commercial banks, cities and state-owned enterprises and private companies such as geothermal investors, developers, EPC contractors. The AIIB also offer grants for project preparation to undertake feasibility studies, E&S studies, etc, to make the project bankable.
 - The bank is also keen to support district heating projects and is currently active in China, Mongolia and Turkey.
 - AIIB representative suggested for consideration by GGA members and partners a preliminary assessment of the potential for geothermal district heating in Mongolia which currently uses only coal for heating and has a serious air quality problem in the main cities. Furthermore, suggestions were made to look into GHG emissions factors and mitigation measures in more detail particularly as the upcoming EU taxonomy for green financing is setting a maximum emission factor of 120 gCO₂/kWh.
- The **French geothermal cluster, GEODEEP** has been collaborating with Serbia to develop feasibility studies for geothermal projects in the context of the [GOSPEL project](#). The cluster informed the participants at the meeting that the GEODEEP risk mitigation insurance fund is now under review by the European Commission for clearance against EU State Aid rules. Furthermore, GEODEEP proposes a follow-up meeting of geothermal clusters during the World Geothermal Congress in Iceland under the umbrella of the GGA.
- The **Serbian Geothermal Association** is supporting strategic studies to define the geothermal potential and type of resource found within the municipalities. The association is collaborating with the government to jointly develop a conducive regulatory framework and highlights the need to establish a risk mitigation scheme in the country.
- The **Kingdom of Saudi Arabia** expressed interest to develop geothermal resources for cooling and asked for advice by members and partners. A follow-up meeting was organised with GGA partners from industry associations to explore collaboration opportunities.
- **Nigeria** is carrying out geothermal exploration studies and expressed interest to join the GGA.
- **Iceland** invited the participants to the World Geothermal Congress in Reykjavik in April 2020, where over 3,000 participants are expected.

Conclusions

1. The participants were invited to support GGA in developing the knowledge sharing platform by providing information and suggesting improvements to the website.
2. Members and partners were encouraged to suggest how result-oriented practitioner groups may be developed to advice GGA members and partners on specific topics/activities.
3. GGA will support the meeting of the geothermal clusters being planned by GEODEEP in the framework of the World Geothermal Congress 2020.

Next Steps

1. The results of the geothermal market assessment for East Africa will be published in the first quarter of 2020.
2. A capacity building event on the integration of low-temperature renewable energy resources will be held in China in 2020 (date TBC), in the framework of the project “Energy solution for cities of the future”.
3. The lessons learned during the piloting of the application of UNFC specifications to geothermal resources in selected fields in Indonesia, a cluster of Eastern Caribbean islands and Ethiopia are being compiled and will be presented during the WGC 2020 in Iceland.
4. IRENA plans to implement a capacity building event on the use of geothermal heat in the agri-food sector in 2020 in East Africa and Latin America.
5. Organisation of the 2nd High-Level Conference of the Alliance is pending. Members and Partners are encouraged to bring proposals forward.