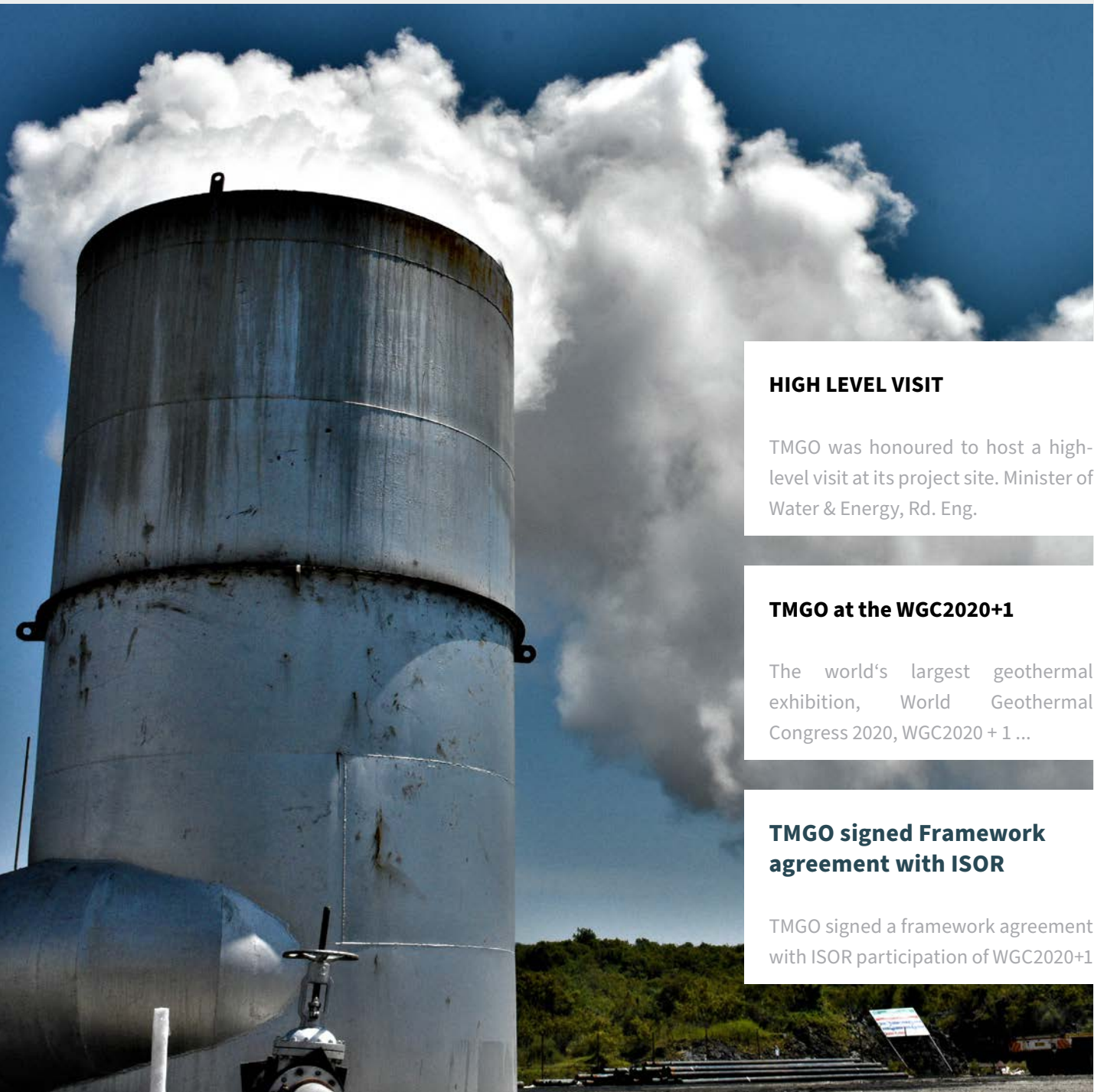


NEWSLETTER

October 2021



HIGH LEVEL VISIT

TMGO was honoured to host a high-level visit at its project site. Minister of Water & Energy, Rd. Eng.

TMGO at the WGC2020+1

The world's largest geothermal exhibition, World Geothermal Congress 2020, WGC2020 + 1 ...

TMGO signed Framework agreement with ISOR

TMGO signed a framework agreement with ISOR participation of WGC2020+1

Message from Sigurgeir Geirsson, Chief Technical Officer



October marked the end of this year rainy season and starting of new harvest season around Tulu Moya project site. The same applies with TMGO's project in Tulu Moya, some projects are coming to an end and other are about to begin. As our exploration campaign in the south of Gnaro lava field is about to be completed we are full steam ahead preparing for exploring the north of the Gnaro lava field. At the same time, we are getting closer to select our EPC contractor for the Tulu Moya geothermal project.

In October our expansion in the Tulu Moya area started to take shape. For continuing of geothermal exploration of the area we have to expand the infrastructure work with road around the Gnaro and new well pads for next stage of the geothermal drilling campaign. This work had good progress in October and our expectation is to be ready with new areas for exploration in beginning of 2022.

In terms of the geothermal exploration drilling, we are on our final stages in drilling the first three exploration wells. The journey did come with its own set of challenges but as we get closer to well completion of the third exploration well, we have collected vast

amount of exploration data which incorporated with other geoscientific research progresses will provide an important input in evaluation of the drilling strategy in Tulu Moya.

TMGO's journey to select the EPC contractor for the first phase of the geothermal power plant in Tulu Moya along with the resource gathering system and the connecting grid works has been progressing well. The tendering procedure is going well, and we have had the privileges to engage in conversation with some of the leading companies in the geothermal industry. My hopes and expectation are that early in 2022, selection of the EPC contractor will be confirmed, and with that confirmation the next stage in the Tulu Moya geothermal project will start.

A team from TMGO had the chance to participate in World Geothermal Conference in Iceland at the end of October. The conference is the world cup of the geothermal community where all leading experts in the community meet to share information. To see the interest people all over the world have in our geothermal project in Tulu Moya made us proud.

Editorial

With this issue of our Newsletter, we bring you forth the latest developments & updates in TMGO.

In this month we were honored to host two ministers and one CEO at our project site. It is also during this month that the world's largest geothermal exhibition, World Geothermal Congress 2020, WGC2020 + 1, was held in the capital of Iceland, Reykjavik, in which our CEO along with two SMT members took part by representing TMGO.

We are also glad to welcome our new staff members and an intern, who have just joined our team this month. Their addition to the team will help the project company move forward with its goals by filling the gaps we had in certain expertise. The new staff members will be working on various project activities at site, such as civil works, water drilling & pipeline, and new well pads preparations. We also signed framework agreement with ISOR (Iceland GeoSurvey company) during this month. This document has been produced with the financial assistance of the African Union Commission. The contents of this document are the sole responsibility of TM Geothermal Operations PLC. and can under no circumstances be regarded as reflecting the position of the African Union Commission.

We hope you enjoy reading this issue. As always, we value your feedback.

Nazif Jemal

Lead, PR & Communications

Site update

Geothermal drilling

At the beginning of October 2021 drilling of GB-1 had reached 2074 m RT. Since middle of September the drill string had been stuck. Several attempts were made to release the string without success.

Due to failure in the top drive there were limited options to free the string. Another top drive arrived from Kenya early October and by 11th of October the new top drive was ready and fishing operations started again. Various attempts were made to work the string up and down and to get rotation going.

On 20th of October, it was decided to quit fishing operation and start backing off. With backing off operation it was possible to fish up about 1500 m of drill string with top of fish at 1500 m. At that stage, due to obstruction at 1356 m it was decided to stop backing off operation and start to prepare for well cleaning, plugging and side tracking.



By the end of October 2021 preparation for well cleaning, cementing plugging, side tracking and to continue drilling was ongoing. It is expected that these procedures will start in middle of November 2021.

Civil works

Well Pad GA is now ready for the third well to be drilled. Construction for road to well pads GC and GD is ongoing along with the construction of the new well pads. The new pads are located just northeast of the Gnaro lava field. The road to the new well pads connect to current road at Anole junction. The work is a little behind schedule. Currently the road and well pad GD should be ready in beginning of January 2022 and well pad GC a month later.

In addition to the road works the contractor is also working on a water supply pipeline connecting well pads GC and GD to TMGO's water supply system. The pipeline installation is expected to be completed in January 2022.

In addition, various maintenance works and improvements on the existing infrastructure is being prepared. These works will be implemented later this year or beginning of next year.





Road works



Pipeline storage at site

Long term test of well GA-1

Drilling of Exploration well GA-1 was completed in November last year. On 17th of July 2021 the well was opened for flow tests. The tests continued and the well was open throughout August 2021. Then the well was finally closed again on 11th of September 2021, after discharging for 56 days.

During this testing period, TMGO's team of experts from ÍSOR, Mannvit-Verkís, Reykjavik Geothermal and KenGen conducted various flow tests with interesting

results.

The well is drilled into a geothermal reservoir, most likely drilled into the outflow zone of the Tulu Moyo geothermal reservoir. The well confirms the existing of the geothermal reservoir in the area. This is supported by the deep fluid's composition which indicates peripheral origin. This is also clear from the heat-up temperature logs, showing temperature reversal at depth, which is typical for well drilled into outflow zones, away from the main up flow region of the reservoir.

The well is considered as a high enthalpy well and is likely to sustain flow for a longer period of time. Higher enthalpy means that less mass is needed from the reservoir to sustain constant power production.

During pressure recovery, after closing the well, equilibrium was quickly obtained, which is an indication of a good connection between the well and the reservoir.

The power production potential of the well is estimated to be in the range of 1.5 ± 0.5 MWe with a condensing turbine. A condenser steam turbine generates, as a "rule of thumb", 1 MWe per 2 kg/s of steam but a backpressure steam turbine needs about twice as much steam per MWe.

These results confirm TMGO expectation of geothermal reservoir and its potential. TMGO next steps is to continue exploration in the area with the aim to locate more efficiently the geothermal reservoir. For this TMGO will have to continue its drilling campaign and as importantly continue with various surface explorations studies to reach the goal of successful and sustainable harnessing of the geothermal reservoir in Tulu Moyo.

We at TMGO would like to use this opportunity to thank all those who were involved in this task of first long term test of well in Tulu Moyo.



WATER SUPPLY

During the month of October, water wells 2, 3, 4 and 5 have been in operation providing on average above 34 l/s. Wells 5 and 6 are ready for pump installation. Installation of pump in water well 6 started but had to be paused causing a delay in the works. Currently plans for finalizing pump installation is in November 2021. Community water connection preparation and planning is ongoing.



HIGH LEVEL VISIT

TMGO was honoured to host a high-level visit at its project site. Minister of Water & Energy, Dr. Eng. Habtamu Itfa, Minister of Mines, Eng. Takele Uma and CEO of EEP Mr. Ashebir Balcha visited the Tulu Moya site on 30th of October 2021. The two ministers and the CEO visited activities of the project and exchanged some questions with technical team at the site regarding challenges and successes of the project. They promised to ease the bureaucracies around logistics and procurement from the government side. The Minister of Mines, Eng. Takele Uma promised to provide sustainable support and quick responses related to the Project in order to realize completion of the project as per its plan. He wrote on his social media page about the visit:

“The main way of development in Ethiopia is to use every opportunity and ability in the right way. There won’t be a national treasure that we ignore and waste. Today with the Minister of Water and Energy Dr. Engineer Habtamu Itfa and the CEO of Ethiopian Electric Power Mr. Ashebir Balcha We have seen the work activities of Tulu Moya Geothermal power generation project located in Arsi Eteya area.

The project will be able to generate 150 megawatts of electric power through a two-chapter construction. This will give more power to our country’s electric power and in the future research is being carried out and in progress to start such geothermal power generation projects like Aluto Langano, Corbeti and Tendaho. We will support geothermal power projects to be completed quickly and provide the needed service.

Geological Survey Institute has confirmed that Ethiopia has the capacity to generate 10 thousand megawatts of electricity from Geothermal.”

On their visit, the Ministers and their team members also took the challenge to walk about 40 Minutes up to the top of Tulu Moya Mountain, the spot that the Project is named after.





Takele Uma Banti

October 30 at 11:11 AM ·

The main way of development in Ethiopia is to use every opportunity and ability in the right way.

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Geological Survey Institute has confirmed that Ethiopia has the capacity to generate 10 thousand megawatt of electricity from Geothermal.


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TMGO at the WGC2020+1

The world's largest geothermal exhibition, World Geothermal Congress 2020, WGC2020 + 1, was held in Iceland from 24th -27th of October. The World Geothermal Congress is a unique event that brings together members of the geothermal community across the globe. It is also an event, where geothermal experts show how geothermal energy will help us create a sustainable future together. Our CEO, CTO and DCTO represented TMGO at the event and spent quality and productive time there in the presence of key members from one of TMGO sponsors, RG.

In conjunction with the closing of the largest international gatherings of the geothermal community at the World Geothermal Congress 2020+1 in Reykjavik, Iceland, an ambitious declaration was issued. It is named "Reykjavik Declaration". The Reykjavik Declaration outlines a set of principles and recommendations for the global geothermal sector to step up its role in the energy transition as a value-driven, clean and affordable energy source serving communities, citizens and the climate. This is amazing news for us at TM Geothermal.



TMGO signed Framework agreement with ISOR

TMGO signed a framework agreement with ISOR (Iceland GeoSurvey company) alongside with participation of WGC2020+1, during this month. The framework agreement between TMGO and ISOR is regarding general geothermal consulting. Based on this contract, the contractor can provide services of several geothermal professionals as technical advisers of high standard to advice the company (TMGO) on a broad range of geothermal issues and more. The, CEO of TMGO, Maxence MIRABEAU signed the agreement with ISOR.



HR UPDATE

As of this month, there are 331 personnel working directly and indirectly with TMGO out of whom 229 are Ethiopians and 97 are expats.

Employees working directly under TMGO are 39 while contractor with larger number of staff is KenGen, who has 66 employees. While thirteen out of the 66 are local, 53 are expats.

We are sad to announce that Sigurgeir Geirsson, CTO of TMGO, has resigned from his position & his official last date is 31st, November 2021.

New recruitments

Since the contract with MGM has been terminated already, TMGO has hired 3 new professionals-1 site inspector, 1 surveyor and 1 site supervisor on a temporary basis to assist the civil works of the project. TMGO will be hiring 1 drilling Superintendent and 1 Junior Drilling Supervisor to oversee the Drilling works.



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NEWS.

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TMGO

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