

EAGE

EUROPEAN
ASSOCIATION OF
GEOSCIENTISTS &
ENGINEERS



First EAGE Workshop on Geothermal Energy and Hydro Power in Africa

7-9 DECEMBER 2020 • ONLINE

- **Programme**

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TECHNICAL COMMITTEE

Eng. Samson Kasanga	Ministry of Energy Kenya
Dr. Peter Omenda Co-Chair	Independent Geothermal and Energy Consultant
Tina Nduta Co-Chair	Extractives and Energy Network
Marit Brommer	International Geothermal Association
David Mwangi	East Africa Power Programme
Hanifa Abdullahi	Geothermal Development Company
Matthew Martin	Environmental Chemical Corporation (ECC)
Sindi Maduhu	Tanzania Petroleum Development Corporation
Philipp Wolpert	GeoThermal Engineering GmbH
Alexander Petrovic	KAUST

ABOUT THE WORKSHOP

African governments are committed to the development of renewable energy sources to meet large percentage of their energy requirements as part of their strategy to achieve the intended Nationally Determined Contributions (NDC) to lower greenhouse gas (GHG) emissions. Hydropower contributes the largest share of electricity consumed in many countries in Africa, however, with challenges of climate change, new focus areas needs to be put in place to ensure sustainable production and economic development of new hydropower projects.

On the other hand, geothermal energy is seeing new growth impetus as it is climate neutral, baseload, low cost, and abundant source of power for many countries located along the East African rift system. Despite the efforts to meet generation targets, transmission and distribution challenges have continued to hinder electricity access to millions of Africans.

The three-day virtual workshop, therefore, will provide an opportunity to share knowledge, case studies, technologies, financing, O&M, and environmental and social issues for the development of hydropower and geothermal energy projects.

Key discussion points will include the contribution of geothermal energy in the continent's energy mix and direct use. But the primary goal of the conference will be to promote the use of geothermal resources for power generation and direct use as a low-cost source of energy to address most of the SDGs. The conference will also propose new focus areas for hydropower generation to play a critical role in meeting energy requirements of the continent through new technologies.

WHO SHOULD ATTEND?

This virtual conference brings together government officials, decision and policy makers, technical experts, academia, private sector, financiers, and renewable industry players. Contributions are invited from geologists, geophysicists, geochemists, reservoir engineers, drilling engineers, power plant engineers, electricity transmission and distribution engineers, geothermal steam-field engineers, geothermal direct use engineers, environmental and social scientists, hydrologists, meteorologists, energy economists, finance experts, project managers and decision-makers.

SHORT COURSE

Wednesday 9th December 2020
1pm CEST – 4pm CEST, Online

Geoscience Communications for Publics and Policy
Professor Iain Stewart, University of Plymouth

Securing the 'social license to operate' is emerging worldwide as one of the critical investments and implementation barriers in both geothermal energy and hydropower development. But gaining social acceptance of geo-energy projects is hampered by low public awareness about geo-energy and poor community participation in energy development projects. Therefore, the key to gaining social license is effective communication of highly technical science to non-technical audiences, from local residents to political decision-makers.

In this workshop, Prof Iain Stewart will build on a 15-year partnership working with BBC television making popular earth science documentaries, integrated with direct experience of public communications and community engagement with a deep geothermal drilling project in SW England, to examine how the principles and practices of effective science communication and public engagement can be applied to the geo-energy landscape in Africa. The workshop, which is part of the UNESCO International Geoscience Programme's initiative on 'sustainable geoscience', will highlight the important critical role of geoscientists in addressing wider societal challenges around sustainable development.

TECHNICAL PROGRAMME

Oral Presentations | Monday 7 December

13:00	Welcome Address
13:05	Keynote Address - Dr. M. Brommer, International Geothermal Association
13:25	Keynote Address - Eng. J. Othieno, Geothermal Development Company
Session 1: Applied Geoscience in Geothermal Exploration and Development	
13:45	Subsurface Characterization for Multilateral Closed Loop Geothermal System. Field Scale Case Study in Alberta, Canada - J. Vany ^{1*} , J. Hirschmiller ² , M. Toews ¹ ¹ Eavor Technologies Inc; ² GLJ
14:10	Generating Geothermal Success in Uganda- Leveraging off the lessons from the country's successful Hydrocarbon exploration - O. Ssembatya ¹ , N. Kukunda ^{1*} ¹ Makerere University
14:35	Break
14:45	Developing geothermal energy at local level in Africa: "Geothermal Village" R&D project - J. VARET ^{1*} ¹ Géo2d; ¹⁰ EDCL; ¹¹ Fraunhofer Institute for Energy; ¹² AGAP; ¹³ Sant'Anna; ¹⁴ HHCB0; ² SEPCO; ³ University of Western Brittany; ⁴ University of Nairobi; ⁵ University of Lorraine; ⁶ Addis Ababa University; ⁷ NORCE; ⁸ ODDEG; ⁹ UNITO
15:10	Analysis of PDC bits use over tricone bits for drilling In Paka field - A. Khaemba ^{1*} ¹ Geothermal Development Company
15:35	Improving geophysical resolution with magnetotelluric and gravity joint inversion: application to the Asal Rift geothermal region - R. Robleh Ragheh ^{1,2*} , P. Tarits ¹ , S. Hautot ³ , M. Jalludin ² ¹ UBO/IUEM; ² CERD; ³ Imagir sarl
16:00	Break

16:10	The Play-Type Concept and its Benefits for the Assessment of Geothermal Resources in the EARS - M. Kraml ¹ , J. Grimmer ¹ , T. Hochschild ¹ , P. Wolpert ^{1*} , I. Moeck ² ¹ GeoThermal Engineering; ² LIAG
16:35	Isotopic Characterization of a complete Upper Jurassic Succession. Implications for stratigraphic classification, dolomitization and porosity evolution - M. Nowak ^{1,4*} , P. Wolpert ² , D. Bohnsack ³ ¹ King Abdullah University of Science and Technology - Ali I. Al-Naimi Petroleum Engineering Research Center - Earth Sciences and Engineering Division; ² GeoThermal Engineering GmbH; ³ Technical University Munich - Chair of Hydrogeology; ⁴ Bavarian Environment Agency
17:00	Updated geothermal model, power capacity estimates and financial model for resource development in Paka geothermal Field - G. Mibe ^{2*} , E. Bali ² , H. Geirsson ² , G. Guðfinnsson ² , B. Harðarson ³ , H. Franzson ³ ¹ Geothermal Development Company(GDC); ² University of Iceland; ³ Iceland Geosurvey
17:25	Discussion
17:45	End of Day One



OVERVIEW OF REGISTRATION RATES

Global Registration Rates

REGISTERED AND PAID	Until 6 December 2020
EAGE Member	€ 200
Non Member (Includes EAGE Membership)	€ 300
EAGE Student Member	€ 125
Non Student Member (Includes EAGE Membership)	€ 150

Local Registration Rates

REGISTERED AND PAID	Until 6 December 2020
EAGE Member	€ 100
Non Member (Does Not Include EAGE Membership)	€ 125
EAGE Student Member	€ 25
Non Student Member (Includes EAGE Membership)	€ 50

* Local Rates are applicable if you are based in the Africa region.

- Registration fees are inclusive of the short course.
- * Memberships are provided for Non-Member registrations and the activation will only take place after the event, between 2-3 weeks.
- All fees are in Euros (€). One Euro of your total registration fee is donated to the EAGE Green Fund. Please note that all fees are subject to 5% VAT as per UAE regulations. Please note: The deadlines are following the Local Time in the United Arab Emirates. Members please note:
- To qualify for the member registration fee, your EAGE membership dues for 2020 must have been paid and confirmed. The processing time for membership applications or renewals is 10 working days.
 - To qualify for the reduced student registration fee:
 - Students must be enrolled in a full time study programme at a recognized university or institute
 - The registration must be accompanied by a copy of a student ID card and/or official proof of enrolment.

Please note: Student non-members cannot be older than 34 years of age (when registering). The non-member fee includes EAGE membership for the remainder of 2020. Please note that EAGE reserves the right to cancel the workshop due to low participation. In this case, payment will be refunded in full.

HOW TO REGISTER

Please register for the event online using this link.

CONTACT

For more information on the workshop, please visit the event's website or contact the EAGE Middle East & Africa office via middle_east@eage.org or +971 4 369 3897.

Oral Presentations | Tuesday 8 December

13:00	Welcome Address
13:05	Keynote Address - Eng. Albert Mugo
13:25	Application of Random Forest for stratigraphic classification of wellbore data in the Southern Franconian Alb, Germany - M. Nowak ^{1,2*} ¹ King-Abdullah University of Science and Technology - Ali I. Al-Naimi Petroleum Engineering Research Center - Earth and Engineering Division; ² Bavarian Environment Agency

Session 2: Technology the 4.0 Industrial Revolution - How Data will shape the Future Energy Industries

13:50	Enabling a Digital Transformation for Geothermal Drilling Performance and Operation Management - O. Bello ¹ , R.R. Okech ^{2*} , S. Srivastava ¹ , C. Teodoriu ¹ ¹ The University of Oklahoma; ² Diageo Plc.
14:15	Break
14:25	The applicability of Industry 4.0 in geothermal drilling: A Systematic Literature Review - J. Wanyonyi ^{1*} , J. Sutter ¹ ¹ Geothermal Development Company
14:50	How Cloud Computing, Artificial Intelligence and Internet of Things will Transform Energy and Utility management Architectures - T. Nduta ^{1*} ¹ Eimara Africa Resources
15:15	Break

Session 3: Equity and Capacity: The Impacts/Benefits of Policy, Capacity Building, and Finance on Renewable Energy

15:25	De-risking Renewable Energy Financing - C. Drumheller ^{2*} , S. Denison ¹ , R. Ebel ¹ , M. Martin ¹ ¹ ECC; ² Oak Services, LLC
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E-Posters Session

15:55	Analysis of Policies that Promote Social Inclusivity in Energy Access - Case of Kenya and Rwanda - M. Nyasimi ^{1*} , P. Makungu ² , V. Ndetu ³ , N. Rapando ⁴ ¹ Inclusive Climate Change Adaptation For A Sustainable Africa (iccasa); ² Ministry of Energy; ³ Ministry of Agriculture, Livestock and Fisheries; ⁴ Solidaridad
16:20	Preliminary Geothermal Exploration Study in the Ifal Basin (Tertiary), Western Arabian Peninsula - I. Arifianto ^{1*} , P.M. Mail ¹ , V.C. Vahrenkamp ¹ ¹ King Abdullah University of Science and Technology
16:45	Discussion
17:15	End of Day One



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