



GLOBAL GEOTHERMAL ALLIANCE



IRENA
International Renewable Energy Agency

Global Geothermal Alliance

Update of activities

22 June, 2021



Global Geothermal Alliance

Launched at COP21



A coalition for action to increase the use of geothermal energy

2030 Goals



- Five-fold growth in the installed capacity of geothermal power generation
- More than two-fold growth in geothermal heating

High Level Conference



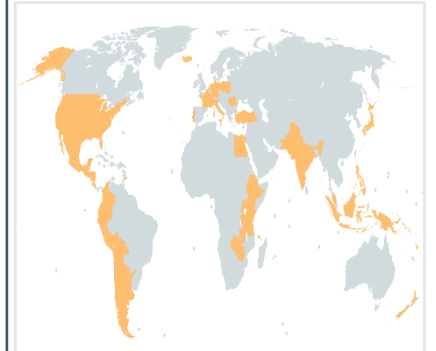
Florence Declaration reaffirmed the political commitment to support all geothermal applications through exchange of knowledge and partnerships

Action Plan



- Priority Action Areas
 - Resource and Market Assessment
 - Needs and Obstacles Assessment
 - Enabling Frameworks
 - Networking and Outreach

Members & Partners

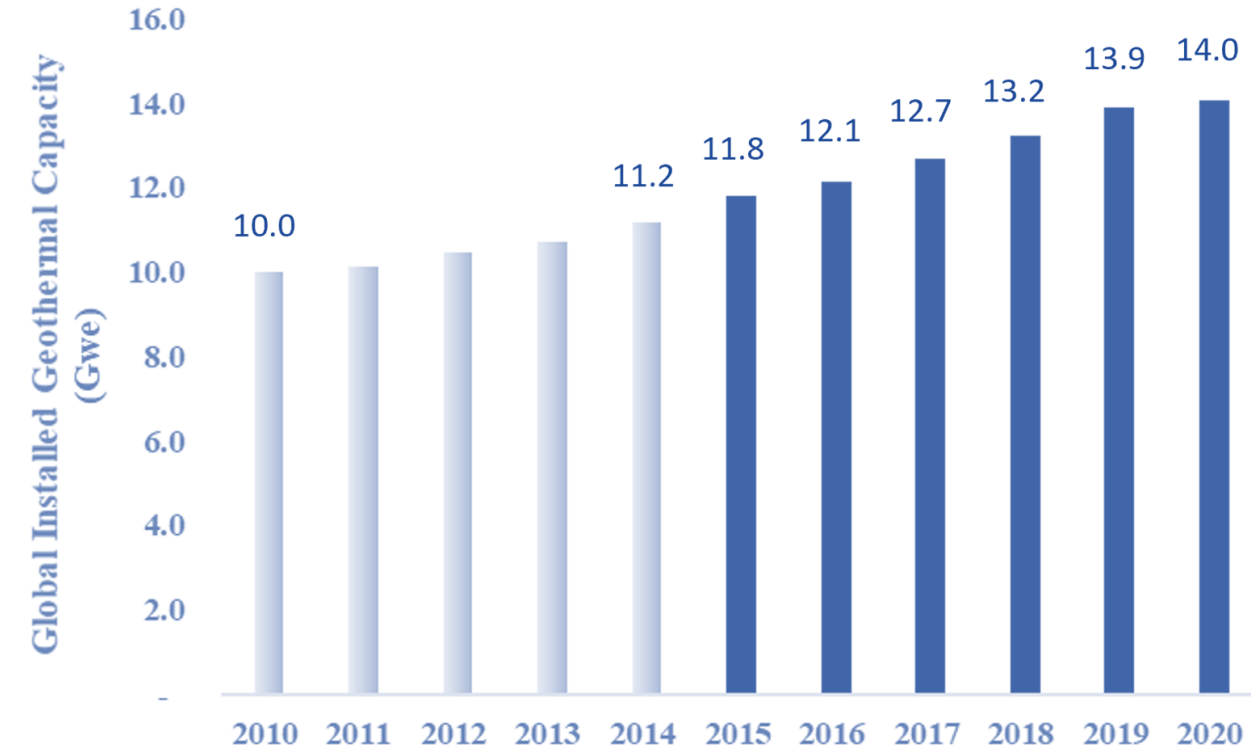


46 Member Countries

40 Partner Institutions

Global Geothermal Progress: Installed capacity for power generation and heat

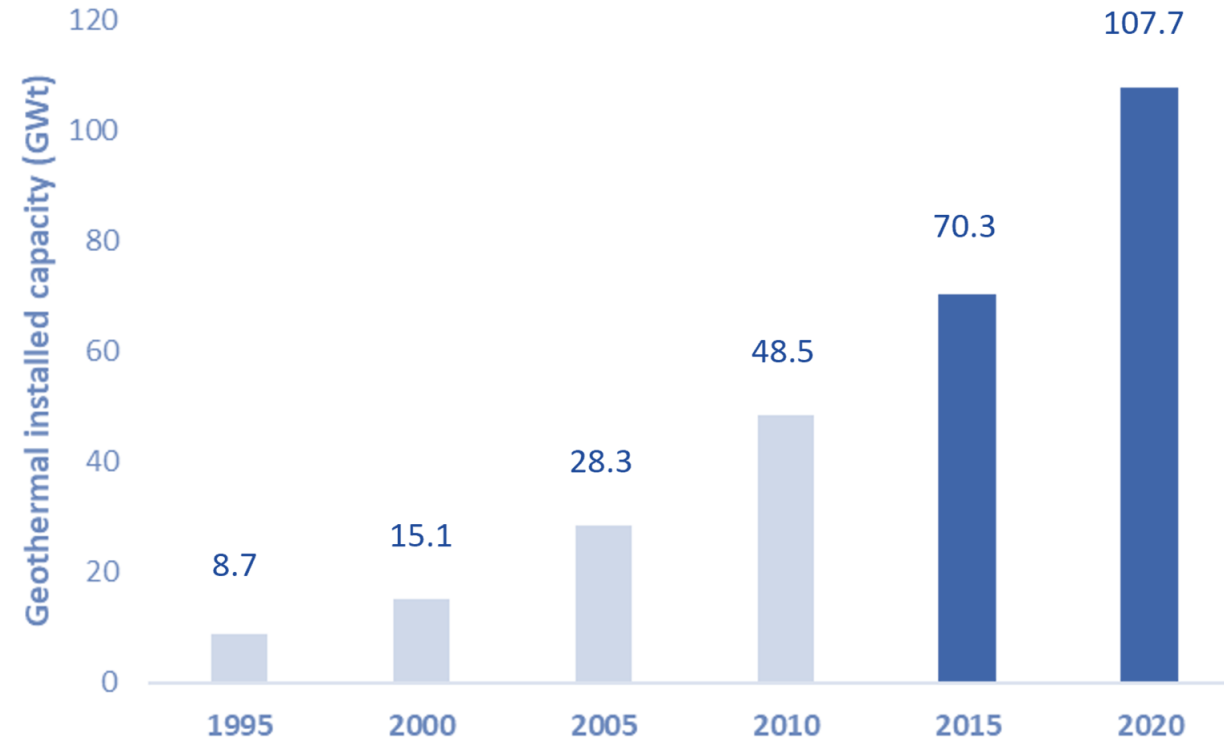
Power Generation



Source: IRENA Statistics (2021)

- 10.0 GW (2010) to 14.0 GW (2020)
- Average annual growth rate
 - 2.9% (2010-2014)
 - 3.5% (2015-2020)

Geothermal Heat

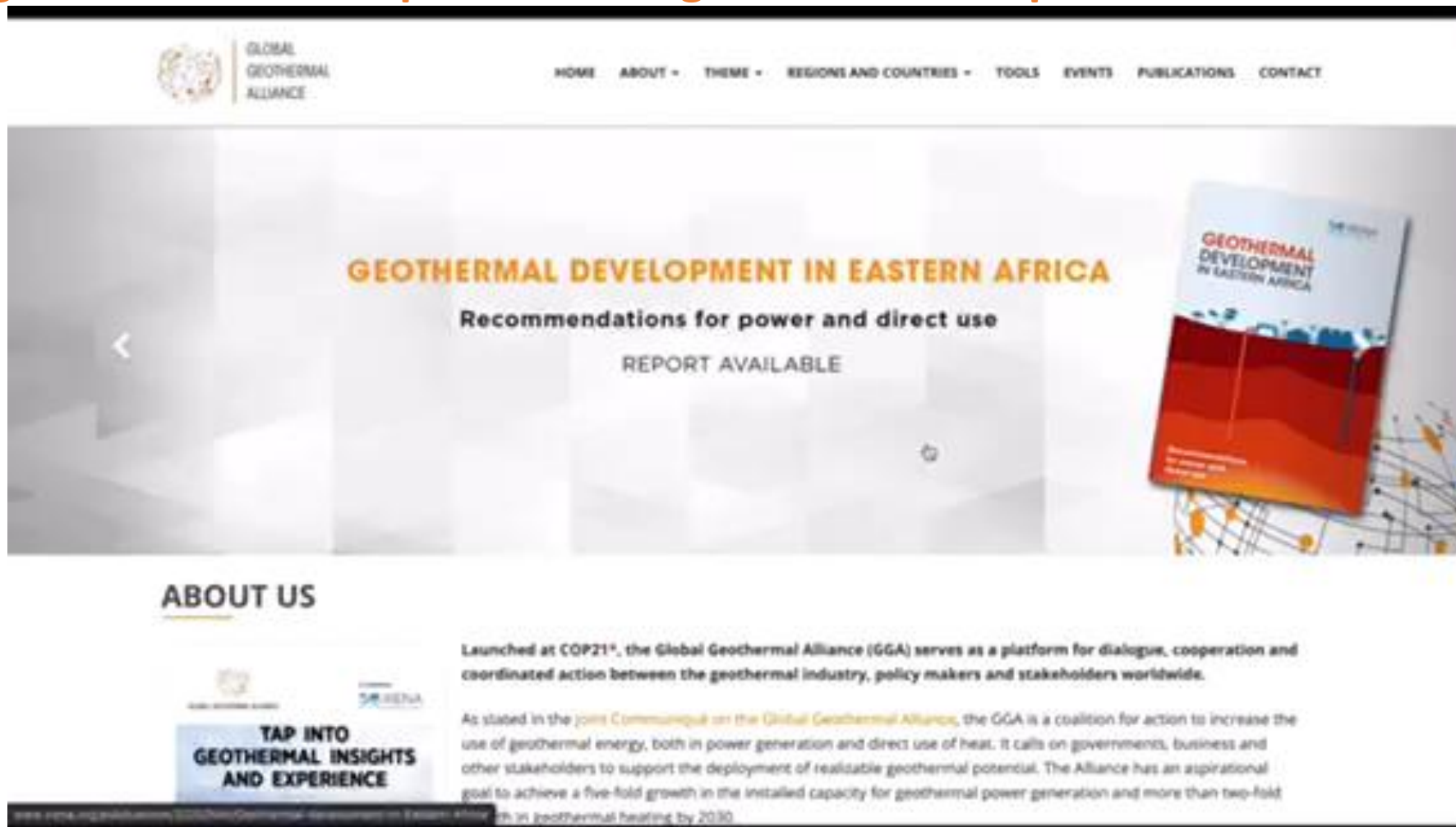


Source: Lund and Toth (2020)

- 48.5 GW (2010) to 107.7 GW (2020)
- Average annual growth rate
 - 7.7% (2010 – 2015)
 - 8.9% (2015 – 2020)

Knowledge sharing platform

Upgrading the GGA website to facilitate access to information supporting geothermal development among members and partners of the GGA



New sections:

- Country profiles
- Regional profiles

Upcoming:

- Policy and financing
- Innovation and technology

One stop shop for geothermal information

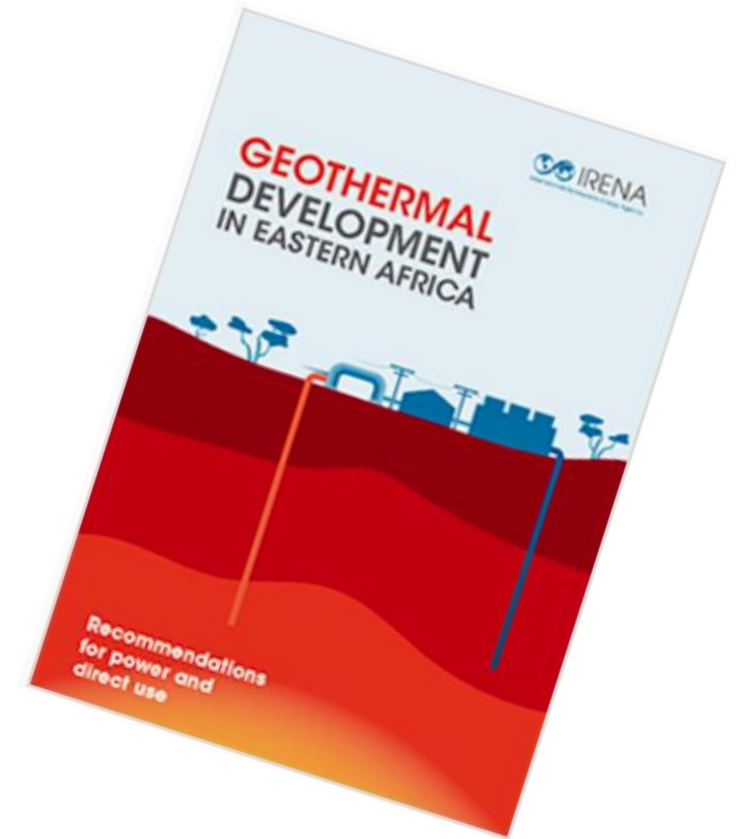
Market Assessment for Geothermal Electricity and Direct Use in Eastern Africa

Objectives:

- Provide an updated status of the geothermal market
- Identify bottlenecks and provide recommendations
- Provide recommendations for power and direct use



**Inclusive
consultative process**



Approach:

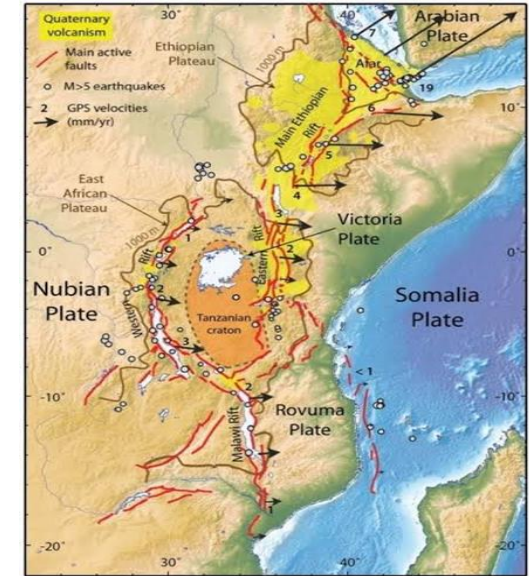
- Based on analysis of 7 geothermal markets in the region: Comoros, Djibouti, Ethiopia, Kenya, Uganda, Tanzania, Zambia.

Geothermal Market Assessment

Status of Geothermal Development in Eastern Africa

	Surface studies	Exploration & appraisal drilling	Feasibility study	Under construction	Installed (MWe)	Commercial Direct Use
Comoros	X					
Djibouti	X	X				
Ethiopia	X	X	X		X (8.5MWe)	
Kenya	X	X	X	X	X (878 Mwe)	X (22.4MWt)
Tanzania	X					
Uganda	X					
Zambia	X					

Most projects in the region are at surface study or exploration drilling phase – except in Kenya and Ethiopia



Source: (Calais, 2016)

Key Findings:

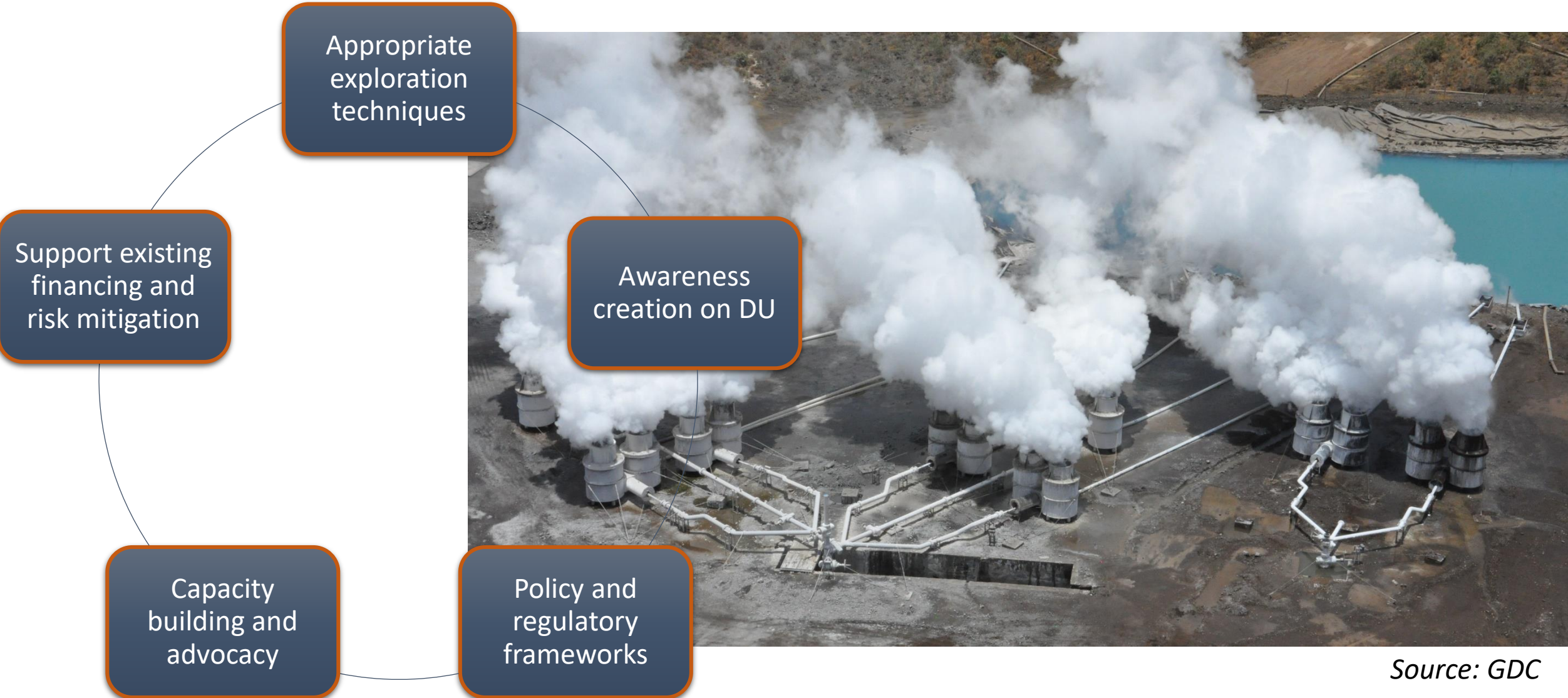
- Development at different stages in each country
- Different types of resources in eastern and western branches of rift
- Challenges hinder the development of geothermal resources

Emerging issues

- Keen interest to mainstream direct use
- Grid interconnectivity
- More electricity supply than demand in Kenya

Geothermal Market Assessment

Key recommendations



Source: GDC

Integration of low-temperature RE in district heating and cooling

- **Low-temperature renewable energy and waste heat resources**, including geothermal, can play a significant role in **decarbonising** heating and cooling systems and **reducing air pollution** in cities.



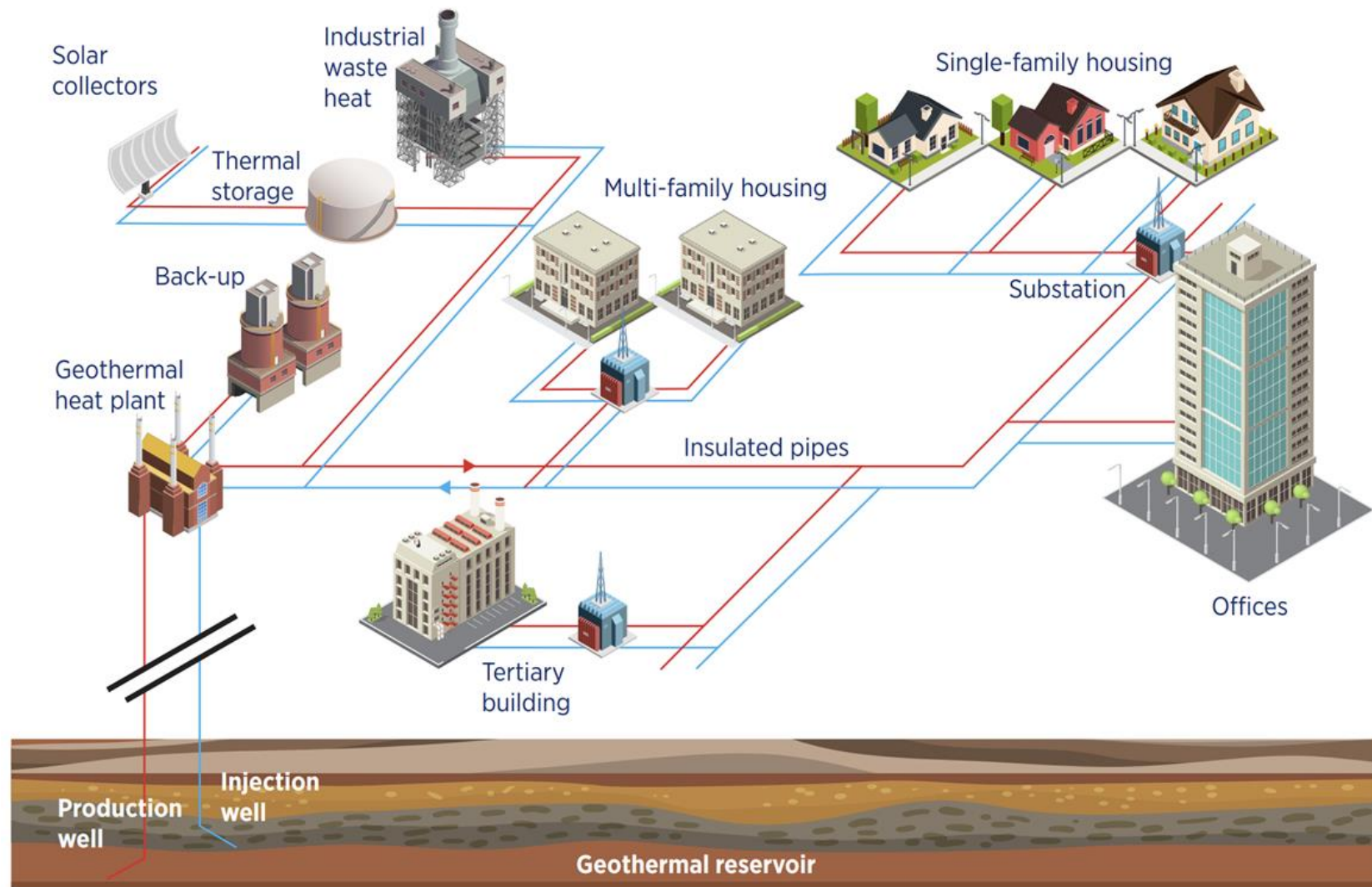
Guidebook: Integrating low-temperature renewables in district energy systems: Guidelines for policy makers

- Highlights the **options and available tools** for facilitating the integration of low-temperature renewable energy
- Developed with support of DHC practitioners' group

Integration of low-temperature RE for district heating and cooling

Emerging trends in heating & cooling

- **Technology advancement**, allowing to integrate low-grade RE resources
- **Improved EE in buildings**, support lower temperature heating systems



Integration of low-temperature RE for district heating and cooling

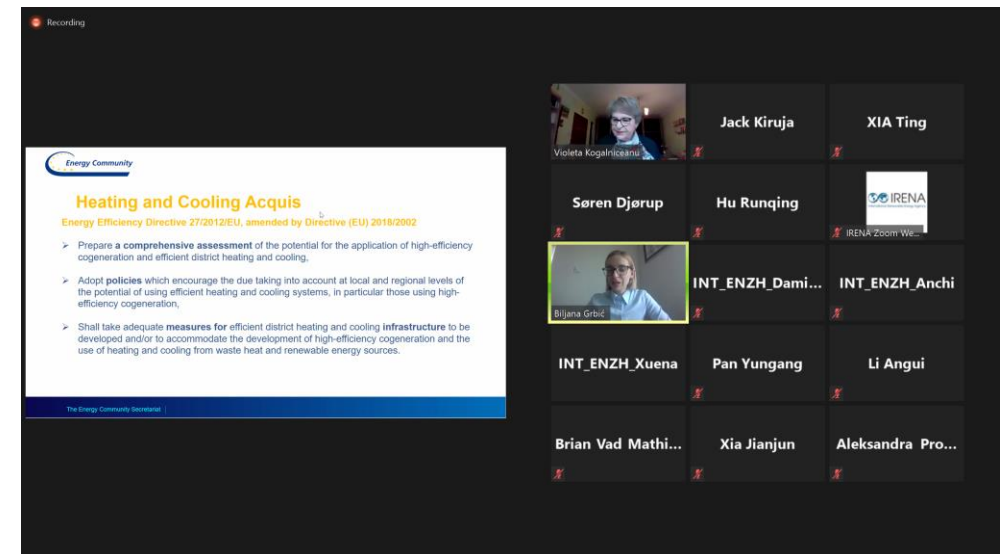
Building capacity of **policy makers at national and local level** in countries with significant RE resources and require DHC

- ✓ Implementation of the findings of the guidebook for DHC
- ✓ Sharing experiences and best practices



Workshop for China (9 March 2021)

- Attended by close to 200 participants
- China aims to decrease the use of coal for DH to minimize air pollution in cities
- Good co-location of geothermal resources in Northern China, where DH is required



Workshop for Belarus (3-4 February 2021)

- Attended by 85 participants
- Belarus aims to increase the use of renewables in DH networks to create energy independence from imported gas
- Energy efficiency a key component of clean energy transition

UNFC Pilot Project with the IGA and World Bank ESMAP

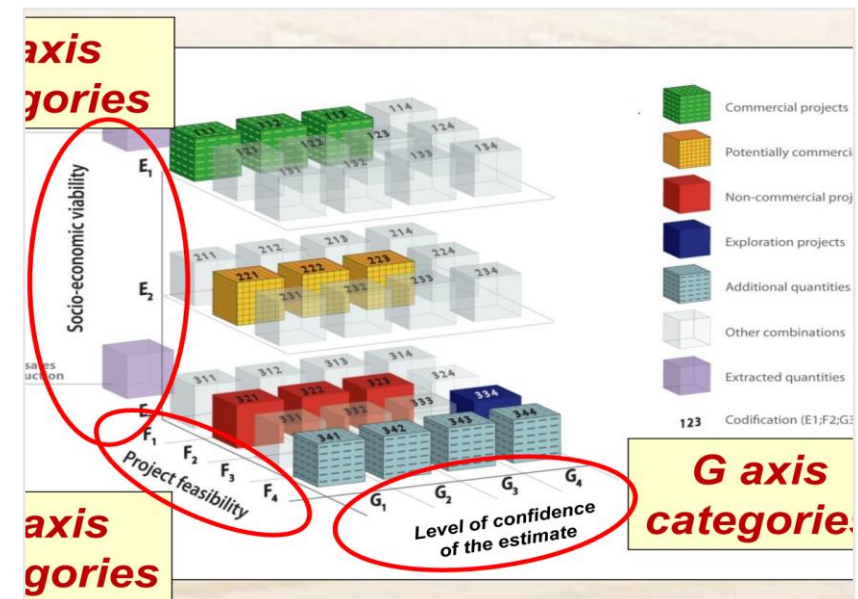


Objective

- Promote standardization in the reporting of geothermal resource estimates and enrich geothermal component of IRENA's Global Atlas for RE
- **Capacity building** support to countries
 - To assist them inventory and classify geothermal prospects according to the [UNFC guidelines in classifying geothermal prospects](#)

Status:

- Technical sessions conducted in Indonesia, Ethiopia and the Caribbean Islands to train stakeholders to apply the UNFC guidelines
- Trainees from geological surveys, developers and managers of geothermal projects
- Maps of sub surface temperature profiles for Indonesia, Ethiopia and Eastern Caribbean Islands currently being prepared for publishing
- Supported by the Government of France
- A report of the key finding and lessons learnt during the training prepared
- Follow up trainings planned



Next steps

Country Support (Guidebooks and capacity building)

Guidebook on DHC

- Regional / country capacity building for policy makers in selected countries
- Pilot project

Guidebook on Agri-food

- Development of guidebook with GGA practitioners
- Regional / country capacity building for policy makers in selected countries
- Pilot project

Guidebook on industrialisation through geothermal energy

- Workshop

Promoting geothermal (NDC enhancement and implementation, Energy Compacts, etc.)

Knowledge Development and Sharing

Update / upgrade of the GGA website and knowledge sharing platform

Report on global geothermal market and technology

Assessment of geothermal development costs and risks

Strengthening GGA

Expanding the GGA constituency

Increasing collaboration through peer-to-peer practitioner groups

Gender mainstreaming activities

Outreach and advocacy at energy and climate fora (WGC21, COP26 etc.)

Review of GGA (taking stock)



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THANK YOU

