



POWERING AGRI-FOOD VALUE CHAINS WITH GEOTHERMAL HEAT

ENABLING POLICIES, REGULATIONS and CROSS-SECTORAL COORDINATION

CAPACITY BUILDING EVENT – AFRICA WEBINAR

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- ✓ The integration of geothermal energy within the agri-food sector requires supportive government policies and regulations to support a nascent industry
- ✓ Critical to attract developers and encourage private sector participation
- ✓ Articulate a clear direction to guide long-term investment decisions
- ✓ Provide appropriate financial incentives to market actors (end-users, service providers)

Competitive Heat Tariff

- Acceptable to both the enterprises and the geothermal developer
- Used to enhance the bankability of the energy supply business and support the developers to obtain financing

Tax Incentives

- Exemptions on the purchase of equipment
- Lower system costs for operators
- Support the sustainable operation of agri-food businesses

Subsidy Scheme

- Compensate operators of heat plants for the difference between the cost of generating renewable heat and the prevailing market price of heat

Risk Mitigation and Insurance

- Grant-based schemes more suitable for nascent markets
- Insurance-based schemes more suitable for mature markets

Examples of Policy Instruments



Examples of Legal and Regulatory Frameworks

Ethiopia:

- Licencing of geothermal resources for electricity generation and direct-use applications
- Licencing of direct-use projects is restricted to resources of up to 120°C.

France:

- Registry system is used to implement a simplified approval regime for direct-use projects

Hungary:

- Where no groundwater is extracted, geothermal projects occurring between 20 metres and 2,500 metres depth do not require a concession

Indonesia:

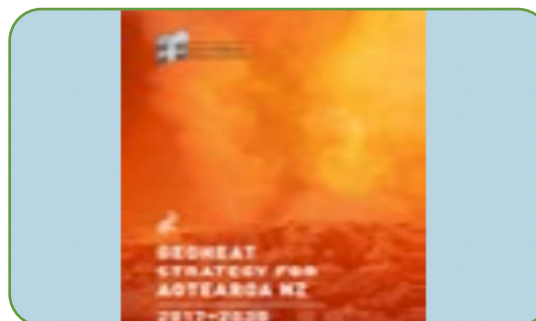
- Procedures and standards regarding geothermal direct-use projects
- Local governments are required to issue business licenses

Geothermal Heat Master Plan / Sector Roadmap

- ✓ Align priorities of multiple stakeholders across various sectors of the economy
- ✓ Provides clarity and predictability for all market actors
- ✓ Fosters private sector participation by de-risking and mobilising financing
- ✓ Stimulates both demand and supply for direct-use investments and project
- ✓ Identifies appropriate technology options
- ✓ Establishes emission reduction goals



Examples of Geothermal Heat Master Plans/Sector Roadmaps



Government of the Netherlands

Ministry of Economic Affairs and Climate Policy

CTCN – Uruguay National Roadmap for Direct-Use Geothermal Energy

- Published in 2020, aims to increase the deployment of low-temperature geothermal in the industrial, residential and commercial sectors in Uruguay.
- Analyses the current status of geothermal energy in the country, identifies existing barriers to implementation and proposes measures to overcome them.

Geoheat Strategy of AOTEAROA New Zealand

- Covers the period 2017 to 2030 and aims to achieve two main objectives:
 - Realise a 7.5 petajoule (PJ) annual increase in the use of geothermal heat in new projects by 2030.
 - Create 500 new jobs in new projects due to the use of geothermal heat by 2030.

Netherlands Geothermal Energy Master Plan

- Establishes a plan for increasing production of geothermal energy in the Netherlands from 3 PJ to 50 PJ in 2030 and more than 200 PJ in 2050.
- Sets a target that by 2050, geothermal energy will supply an estimated 65% of the demand for heat in greenhouse horticulture.

Cross-Sectoral Coordination: Country-Level Roadmap

Conduct studies to collect and analyse relevant information (resource parameters) to identify and prioritise project development and inform decision-making

Set objectives/targets for the direct use geothermal heating sector

Propose relevant technology solutions to achieve targets

Align policies and regulations across different sectors of the economy (energy, agriculture, industry etc.)

Identify all stakeholders, secure their participation and build their capacity

Cross-Sectoral Coordination: Country-Level Roadmap

Provide incentives to foster industry/private sector participation

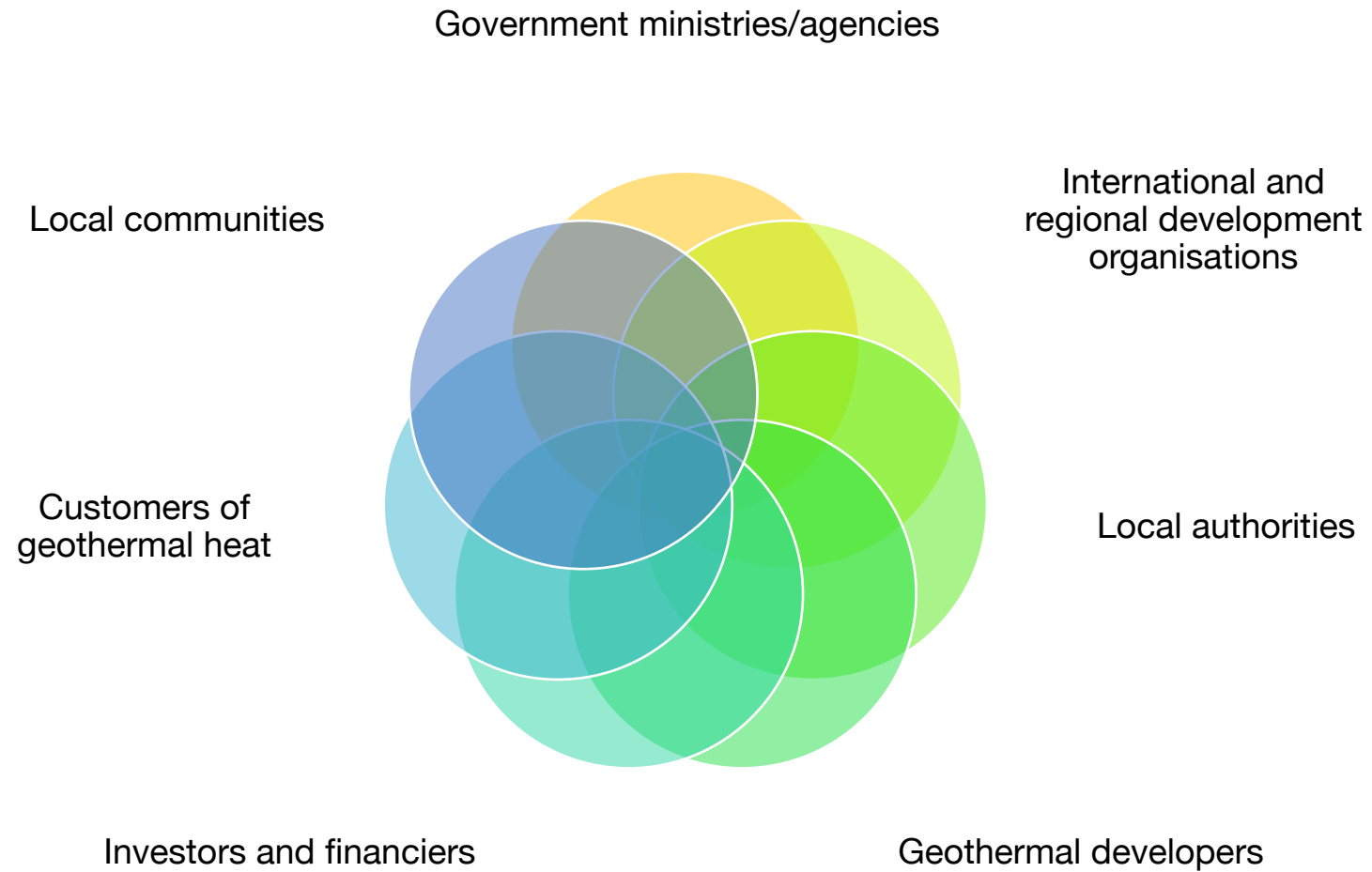


Establish budgets, timelines and milestones to achieve sector targets



Allocate appropriate human and financial resources to achieve targets
(i.e., through fundraising, providing technical assistance etc.)

Multi-stakeholder Engagement



Recommendations

Challenge/gap	Description	Recommendations/lessons learnt
<p>Policy, legal and regulatory frameworks</p>	<p>Laws and regulations to support the development of geothermal projects may be inadequate or lacking.</p> <p>Policy instruments to support the integration of geothermal energy into agri-food systems may be inadequate or lacking.</p>	<ul style="list-style-type: none"> • Establish adequate and simplified licencing procedures for geothermal direct-use projects and clearly defined regulations. • Develop and implement policy instruments to encourage the deployment of geothermal heat in the agri-food sector.
<p>Cross-sectoral alignment and multi-stakeholder engagement</p>	<p>Policies of different sectors whose involvement is required to implement direct-use projects are usually non-aligned.</p> <p>Numerous stakeholders are involved in the development of direct-use projects.</p>	<ul style="list-style-type: none"> • Develop cross-sectoral, integrated planning approaches to facilitate the adoption of geothermal energy into food systems and to align public and private sector priorities (e.g. with master plans or roadmaps for geothermal heat utilisation). • Identify the various stakeholders in direct-use project development and devise a strategy for their engagement as early as possible.

THANK YOU!

