



**THINK  
GEOENERGY**

# **Power Snapshot 2024 Key Highlights from the Global Geothermal Power Yearbook**

A free overview of the latest trends and developments  
in geothermal power

January 2025

## Message from ThinkGeoEnergy's Founder



For over 14 years, ThinkGeoEnergy has been a trusted voice in the geothermal industry, delivering insights, analysis, and resources to foster understanding and innovation. A key highlight of our work has been the annual **Top 10 Geothermal Countries by Installed Power Capacity**, a widely anticipated resource that has become a benchmark for the industry.

Today, I am thrilled to introduce the **Global Geothermal Power Snapshot 2024**, a free annual report offering a concise overview of geothermal power development worldwide. This report represents a major step forward, as it marks the official launch of ThinkGeoEnergy's commercial research offering. With this Snapshot as a starting point, we are expanding our commitment to high-quality information that supports geothermal energy's critical role in decarbonizing power and heat generation globally.

This Snapshot is just the beginning. In the coming weeks, we will release the ThinkGeoEnergy Global Geothermal Power Yearbook 2024, a premium publication that provides deeper insights into industry trends, project developments, and opportunities. Built on over a decade of diligent reporting and continuous data collection, the Yearbook is designed to provide actionable intelligence for developers, policymakers, and investors.

This report builds on ThinkGeoEnergy's 14 years of dedicated industry coverage and our unique access to data and insights directly from geothermal developers, operators, and stakeholders. Unlike generalized data from international organizations, our research is rooted in the sector itself, ensuring actionable insights tailored to the geothermal community.

To further support the global geothermal industry, we continue to offer additional resources on our website, including free regional market overviews and industry updates through our weekly newsletter. Visit our [Publications Page](#) to explore these offerings.

We remain committed to transparency, accuracy, and collaboration in our work. Thank you for joining us on this journey to advance geothermal energy as a cornerstone of a sustainable and decarbonized future. A special thanks to Gladis Sondakh, whose research contributions were instrumental in producing this report.

Warm regards, Alexander Richter - Founder, ThinkGeoEnergy

Resource Type	Free Resources	Premium Resources
Features	<ul style="list-style-type: none"><li>High-level insights, news updates, and market summaries.</li><li>Designed to keep stakeholders informed</li></ul>	<ul style="list-style-type: none"><li>Comprehensive data, detailed analysis, and forecasts</li><li>Tailored for decision-makers and investors</li></ul>
Examples	<ul style="list-style-type: none"><li>Global Geothermal Power Snapshot (this report)</li><li>Our news reporting</li><li>Weekly newsletter</li><li>Top 10 Country Rankings</li><li>Regional Market Overviews</li></ul>	<ul style="list-style-type: none"><li>Global Geothermal Power Yearbook 2024</li><li>In-depth Regional Market Reports</li><li>Consulting Services</li></ul>
Access	Available for free via ThinkGeoEnergy's website, newsletter and social media presence	Accessible via purchase at our <a href="#">Publication's Shop</a>

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# ThinkGeoEnergy Geothermal Power Snapshot 2024

## Executive Summary



The **ThinkGeoEnergy Geothermal Power Snapshot 2024** provides a concise overview of the current state of geothermal power worldwide, highlighting key trends, developments, and technological advancements. This free snapshot represents the starting point of ThinkGeoEnergy's expanded research offering, designed to empower the geothermal community with actionable insights and up-to-date data.

### Key Findings from the Snapshot

#### 1. Global Capacity Growth:

- Total installed geothermal power capacity reached **16,873 MWe** by the end of 2024, with steady growth driven by 17 new plants contributing **389 MWe** of added capacity.
- The year's largest addition was the **174 MW Tauhara II geothermal plant** in New Zealand, showcasing the sector's ability to deliver large-scale projects.

#### 2. Top 10 Geothermal Nations:

- Leading countries like the United States (3,937 MWe) and Indonesia (2,653 MW) lead global geothermal development, with the Philippines, Kenya, and Türkiye showing promising growth.
- A total of 35 countries now generate electricity from geothermal resources, underscoring the technology's global reach.

#### 3. Technology and Innovations:

- Emerging technologies such as **Enhanced Geothermal Systems (EGS)**, **Advanced Geothermal Systems (AGS)**, and **geopressured resources** are unlocking geothermal's potential in new geographies.
- As highlighted in this report, EGS alone could meet **10% of global electricity demand by 2050**, while innovations in closed-loop and hybrid systems are redefining geothermal's capabilities.

#### 4. Heating and Cooling:

- Direct-use applications for district heating and cooling represent a significant untapped opportunity for decarbonization, particularly in urban centers and industrial processes.
- Europe leads geothermal heating adoption, but substantial potential exists in regions such as China, North America, and beyond.

### Why ThinkGeoEnergy?

ThinkGeoEnergy's data and research stand out for their sector-specific focus and commitment to accuracy. Unlike generalized reports from international organizations, our insights are built on 14 years of industry engagement, collaboration with developers and operators, and a methodology prioritizing operational capacity over theoretical estimates. This approach ensures that stakeholders receive actionable intelligence directly relevant to the geothermal community.

### Expanding with the ThinkGeoEnergy Global Geothermal Power Yearbook 2024

This Snapshot provides a preview of the upcoming **Global Geothermal Power Yearbook 2024**, a premium report that delves deeper into:

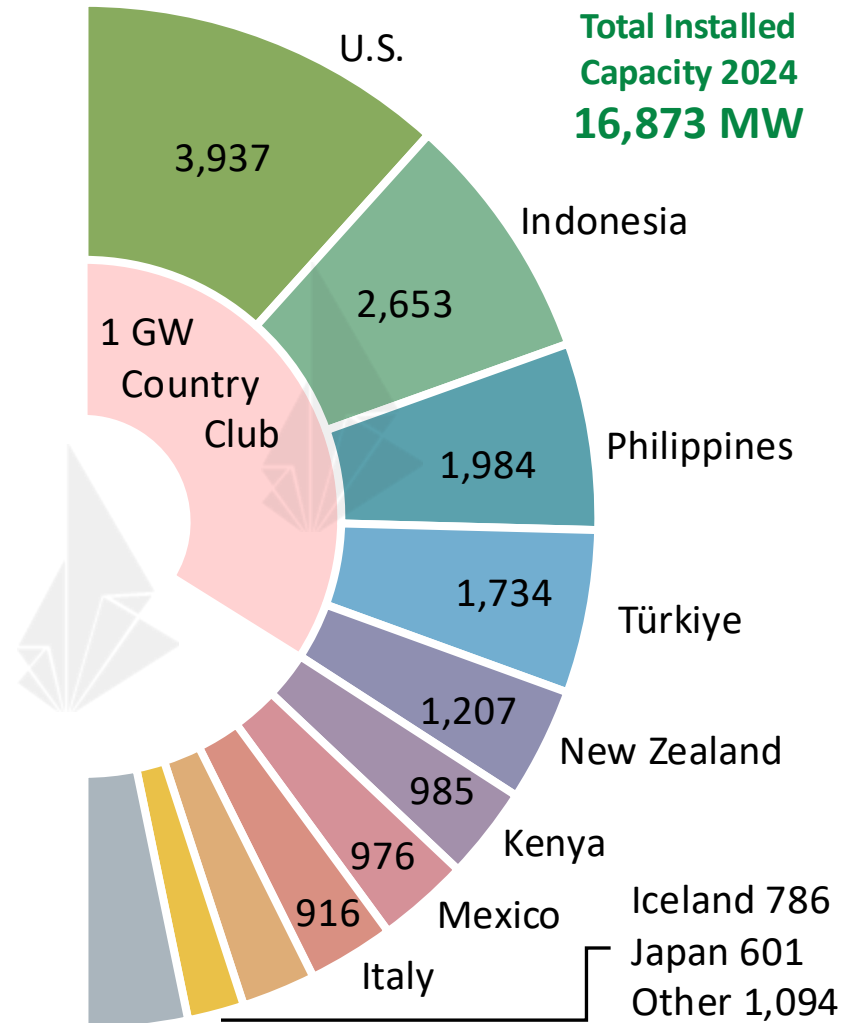
- Detailed capacity trends for the **Top 20 geothermal countries**.
- Comprehensive project pipelines and development updates.
- Regional market overviews and forward-looking forecasts.
- Profiles of leading developers, operators, and emerging technologies.

**The Yearbook is tailored for developers, policymakers, and investors seeking the most reliable and actionable geothermal data available.**

To access the ThinkGeoEnergy Global Geothermal Power Yearbook 2024, as soon as it is being released, [sign-up for our newsletter](#) or regularly visit our [website](#) and follow us on [LinkedIn](#).

Together, we can drive geothermal forward as a cornerstone of a sustainable and decarbonized energy future.

## Global Installed Capacity (MWe) - Top 10 Countries



Source: ThinkGeoEnergy Research January 2025

At the close of 2024, the global geothermal power generation capacity reached **16,873 MWe**, marking a steady year-on-year growth. The momentum in project developments and expansions promises further increases in capacity for 2025 and 2026. However, the role of **Enhanced Geothermal Systems (EGS)** and **Advanced Geothermal Systems (AGS)** in contributing to this growth over the next two years remains uncertain.

In 2024, **14 new geothermal plants or expansions** became operational, adding a total of **389 MWe** to the global capacity. This includes the **Tauhara II plant in New Zealand**—the year’s largest addition, with an impressive 174 MW installed by Contact Energy. While several projects narrowly missed commissioning in 2024, **3-4 plants are slated to come online early in 2025**.

Today, **35 countries generate electricity with geothermal energy**, reflecting the growing global adoption of this renewable resource. Updated assessments and corrections to plant data resulted in some capacity adjustments for specific nations.

### The Top 10 geothermal power-producing countries as of year-end 2024 are:

1. **United States:** 3,937 MW (adjusted numbers as per updated reports).
2. **Indonesia:** 2,653 MW (includes new capacities from Sorik Marapi, Salak, and Lahendong).
3. **Philippines:** 1,984 MW (additions at Tiwi, Palayan, and Biliran).
4. **Türkiye:** 1,734 MW (new plants: GreenEco 7, Open Mountain T-01 and Hez Moralı).
5. **New Zealand:** 1,207 MW (addition of Tauhara II, Te Huka 3 expected early 2025).
6. **Kenya:** 985 MW (adjusted numbers; poised to join the “Geothermal GW Club” in 2025).
7. **Mexico:** 976 MW (minor corrections applied).
8. **Italy:** 916 MW (updated numbers for accuracy).
9. **Iceland:** 786 MW (includes Reykjanes expansion previously missed).
10. **Japan:** 601 MW (additions at Appi, Suginoi, and Minami-Kayabe).

Additionally, **25 other countries** with operational geothermal plants collectively contribute **1,095 MWe** to the global capacity.

Our capacity figures represent operational plants, providing a clearer and more accurate picture of geothermal’s contribution to global energy systems. Details on our approach to our database work and reporting of data, see the disclaimer on the last page of this report.

## Global Installed Capacity - Global Geothermal Power Plant Map

Our **Global Geothermal Power Plant Map** provides an extensive overview of geothermal plants globally. The map allows users to explore plants grouped by location or geothermal field, with details on the **name of the plant group, combined installed capacity, and technology used**. With the satellite view, one can zoom into each plant location. (Note: In fields with mixed technologies, such as flash and binary turbines, the grouping may not fully reflect this diversity.)

We also maintain a **development project database**, including location-specific insights. While not publicly available, this database supports our **business intelligence services** for clients, offering strategic guidance for geothermal projects.




This map serves as a key resource for understanding the global geothermal landscape, catering to stakeholders, policymakers, and energy professionals.

Access the map here: [ThinkGeoEnergy Global Geothermal Power Plant Map](#)



# ThinkGeoEnergy Geothermal Power Snapshot 2024

## Global Installed Capacity - Selected additions 2024

Tauhara, New Zealand	Sorik Marapi, Indonesia	Greeneco 7, Türkiye	Minami-Kayabe, Japan	Beowave Repower, U.S.
				
<p><b>Name:</b> Tauhara  <b>Location:</b> Taupo, New Zealand  <b>Developer:</b> Contact Energy  <b>Installed Capacity:</b> 184/ 174 MWe  <b>Technology:</b> Triple-Flash  <b>Turbine supplier:</b> Fuji Electric  <b>COD:</b> November 2024</p>	<p><b>Name:</b> Sorik Marapi Unit 5  <b>Location:</b> North Sumatra, Indonesia  <b>Developer:</b> KS Orka  <b>Installed Capacity:</b> 41.25 MWe  <b>Technology:</b> Binary  <b>Turbine supplier:</b> Kaishan  <b>COD:</b> December 2024</p>	<p><b>Name:</b> Greeneco 7 JES  <b>Location:</b> Denizli-Saraköy, Türkiye  <b>Developer:</b> Greeneco Enerji  <b>Installed Capacity:</b> 24.5 Mwe  <b>Technology:</b> Binary  <b>Turbine supplier:</b> Exergy  <b>COD:</b> June 2024</p>	<p><b>Name:</b> Minami-Kayabe  <b>Location:</b> Hokkaido, Japan  <b>Developer:</b> ORIX Corp.  <b>Installed Capacity:</b> 6.5 MWe  <b>Technology:</b> Binary  <b>Turbine supplier:</b> tbd  <b>COD:</b> May 2024</p>	<p><b>Name:</b> Beowave Repower  <b>Location:</b> Nevada, U.S.  <b>Developer:</b> Ormat Nevada  <b>Installed Capacity:</b> 6 / 29.2 MWe  <b>Technology:</b> Binary  <b>Turbine supplier:</b> Ormat  <b>COD:</b> June 2024</p>

### 2024 Geothermal Capacity Additions

In 2024, a total of 17 geothermal plants commenced operations, including a mix of new projects and expansions of existing facilities. Among the expansions were binary unit additions to flash-condensing geothermal power plants in the Philippines, showcasing advancements in hybrid technology integration.

The total capacity added was 389 MWe, with an average plant size of 24.3 MW. Excluding the significant 174 MW Tauhara plant in New Zealand, the average size of the remaining projects stands at 16 MW, highlighting the prevalence of smaller-scale developments alongside major installations.

Pictures: screenshots of the plant locations from ThinkGeoEnergy's Global Geothermal Power Plant Map/ Google Maps.

The geothermal sector is undergoing a technological transformation, broadening its scalability, efficiency, and geographic reach. While traditional geothermal development has relied on hydrothermal systems, emerging innovations such as Enhanced Geothermal Systems (EGS), Advanced Geothermal Systems (AGS), supercritical geothermal resources, and geopressured systems are redefining the industry's potential. These breakthroughs, as highlighted in various leading publications and commercial analyses, are attracting significant investment and reshaping the landscape of geothermal energy.

### Key Next-Generation Geothermal Technologies

**Enhanced Geothermal Systems (EGS):** Enhanced Geothermal Systems (EGS) leverage techniques adapted from natural gas fracking, applying advanced methods to engineer permeability in hot, dry rock formations. This approach significantly expands geothermal's potential into regions previously considered unsuitable. Companies like **Fervo Energy** are leading the way, integrating fiber optic monitoring for real-time reservoir management to enhance efficiency and scalability. Additionally, innovations in drilling technologies are driving down costs, making EGS a more feasible option. However, concerns over induced seismicity could limit EGS development to sparsely populated areas. Despite these challenges, EGS has the potential to meet up to 10% of global electricity demand by 2050, representing a scalable opportunity for the geothermal sector.

**Advanced Geothermal Systems (AGS):** AGS systems, such as the **closed-loop systems** developed by **Eavor Technologies** and **GreenFire Energy**, bypass traditional reliance on hydrothermal reservoirs, making geothermal projects possible almost anywhere. These systems use sealed wells to circulate a working fluid, extracting heat through conduction rather than relying on natural permeability. This adaptability makes AGS a transformative solution with potential applications across 90% of Earth's surface. However, high drilling costs for these systems remain a short-term barrier, posing a competitive disadvantage compared to conventional geothermal projects. As companies like Eavor continue to develop modular and scalable systems, such as the **Eavor-Loop™**, AGS could significantly shorten project timelines and expand geothermal's market potential.



**Supercritical/Superhot Geothermal Resources:** Supercritical geothermal systems are poised to be a game-changer in renewable energy by tapping ultra-deep reservoirs where temperatures exceed 374°C and pressures surpass critical thresholds. These extreme conditions create supercritical fluids, which deliver 10 times the energy density of conventional geothermal systems. Companies like GA Drilling and Quaise Energy are pioneering the advanced drilling technologies needed to access these depths, with plasma drilling and millimeter-wave drilling offering faster and more cost-effective methods of reaching superhot zones. While supercritical geothermal remains in the early stages of development, its potential for unparalleled power output could redefine the economics of geothermal energy, particularly in regions with deep tectonic or volcanic activity. As the technology matures, it could unlock vast new resources and firmly position geothermal as a cornerstone of the global energy transition.

**Geopressured Systems:** Geopressured geothermal resources, such as those explored by Sage Geosystems, uniquely combine heat, high-pressure fluids, and dissolved natural gas into a hybrid energy solution. By utilizing existing oil and gas infrastructure, geopressured systems reduce upfront costs while expanding geothermal's applicability to regions with deep sedimentary basins. This hybrid approach provides multiple energy streams from a single source, offering a compelling pathway to diversify geothermal applications. With an estimated global potential of 23 GW, geopressured systems could play a key role in increasing geothermal energy production in the years to come.

' Pictures: Fervo Energy's project location in Utah, U.S. (source: Fervo Energy) and Eavor Technologies' project site in Geretsried, Germany (source: Eavor Technologies)

## Unlocking Potential: Enablers, Innovations, and Challenges in Geothermal



The development of next-generation geothermal systems is supported by a suite of enabling technologies that enhance exploration, development, and operational efficiency. These technologies are evolving across both surface and subsurface aspects of geothermal development, enabling the sector to overcome traditional barriers and expand its global reach.

Surface-Level Technologies	Subsurface Technologies
<p>Surface technologies play a critical role in optimizing geothermal operations and improving efficiency across plant infrastructure:</p> <p><b>High-Efficiency Heat Exchangers:</b> Modern heat exchanger designs enhance thermal transfer, crucial for binary and AGS plants. These systems are critical for optimizing output in smaller or lower-temperature projects, enabling more efficient resource utilization.</p> <p><b>Hybrid Power Systems:</b> The integration of geothermal with solar PV, wind, or energy storage systems is creating flexible and resilient energy solutions. These hybrid approaches stabilize grids and improve the financial feasibility of geothermal projects in regions with intermittent renewable sources.</p> <p><b>Automation and Robotics:</b> From automated drilling rigs to robotic maintenance systems, surface automation improves operational efficiency and reduces costs. Robotics are also playing an increasing role in plant inspections, especially for remote or hazardous geothermal facilities.</p>	<p>Advancements in subsurface technologies are expanding geothermal’s reach and improving the efficiency of resource discovery, development, and management.</p> <p><b>Resource Identification and Reservoir Characterization</b></p> <p><b>Seismic Imaging and Micro-seismic Monitoring:</b> High-resolution imaging is revolutionizing subsurface mapping, allowing developers to identify optimal drilling sites for EGS, AGS, and supercritical systems. Tools such as 4D seismic monitoring enhance fracture management, ensuring sustainable reservoir performance.</p> <p><b>Advanced Software for Geophysics and Geochemistry:</b> AI-powered platforms integrate geological, geophysical, and geochemical data to streamline resource exploration. Companies specializing in AI-driven geoscience tools are enabling better risk mitigation and more precise resource modelling.</p> <p><b>High-Temperature Tools and Materials ‘Heat-Resistant Coatings and Materials:</b> Advances in materials science are extending the operational life of geothermal tools and infrastructure in extreme temperature environments, such as those found in superhot geothermal systems. These materials ensure durability and reduce maintenance costs for downhole equipment.</p> <p><b>Next-Generation Drilling, Completion, and Reservoir Management</b></p> <ul style="list-style-type: none"><li>• <b>Plasma and Millimeter-Wave Drilling:</b> Companies like <b>GA Drilling</b> and <b>Quaise Energy</b> are pushing the boundaries of geothermal exploration by enabling access to ultra-deep reservoirs. These innovations reduce the time and cost of drilling to superhot and supercritical resources.</li><li>• <b>Completion and Reservoir Management:</b> Enhanced well completion techniques, such as advanced wellbore sealing technologies, are improving efficiency and minimizing resource loss. Innovative reservoir management tools ensure sustainable heat extraction over decades of operation.</li></ul> <p><b>Downhole Remote Sensing and Monitoring - Fiber Optic Sensing:</b> Real-time monitoring systems provide critical data on temperature, pressure, and fluid flow, enabling operators to optimize reservoir performance. Companies like <b>Fervo Energy</b> are pioneering these techniques, which are especially critical for EGS reservoirs.</p>



## Financing Models: Unlocking the Potential of Geothermal



The future of geothermal energy depends on innovative financing models to address high upfront costs and risks, particularly in underdeveloped regions. Companies are adopting **diverse strategies** to mitigate risks and attract capital, including vertical integration, resource diversification, and portfolio approaches.

Vertically Integrated Models:	Integrated Development and Resource Diversification:	Portfolio Investment Strategies:
<p><b>Ormat Technologies</b>, a global leader in geothermal energy, exemplifies the potential of vertical integration in the sector. Initially a turbine manufacturer specializing in binary cycle technology, Ormat has evolved into a fully integrated geothermal developer and operator.</p> <p>By owning and managing the entire value chain from turbine production to project development and operations Ormat has achieved significant cost efficiencies and scalability.</p> <p>With operations spanning multiple continents, it has become the dominant player in the binary technology market, pioneering advancements in smaller-scale and modular geothermal systems. Its business model demonstrates the viability of aligning technical expertise with operational control to reduce project risk and enhance profitability.</p>	<p>The <b>Arverne Group</b> from France takes an innovative approach by integrating diverse geothermal-related operations into its portfolio.</p> <p>Leveraging its acquisition of a drilling company and the geothermal developer <b>Fonroche</b>, Arverne is targeting opportunities across electricity, heat, and lithium extraction.</p> <p>Through its partnership with <b>Lithium de France</b>, the group is advancing technologies to extract lithium from geothermal brine, adding a valuable revenue stream alongside traditional geothermal applications. This multi-faceted strategy highlights how leveraging complementary resource opportunities can enhance financial stability and attract investment.</p>	<p><b>Baseload Capital</b>, a Sweden-based geothermal developer and investor, embodies the potential of portfolio investment strategies in mitigating project risks.</p> <p>By investing in and developing multiple smaller-scale geothermal projects globally, Baseload diversifies its risk profile while tapping into varied market opportunities. Its emphasis on modular and scalable geothermal applications enables rapid deployment, making it an attractive partner for both investors and governments seeking low-carbon energy solutions.</p> <p>Baseload’s approach highlights the benefits of spreading risk across a portfolio rather than relying on single-project risk insurance, which can be cumbersome, expensive, and less effective in high-risk regions.</p>

### Competitive Returns Through Integrated Business Models

Geothermal must deliver competitive returns through:

- **Cost Efficiency:** Vertical integration (e.g., Ormat) reduces costs and boosts scalability.
- **Revenue Diversification:** Adding heating or lithium extraction (**Arverne**) enhances resilience.
- **Long-Term Stability:** Baseload energy output ensures predictable returns for investors.

### Scaling Development to Meet Investor Needs

To attract funding, projects must align with:

- **Structured Financing:** Modular, phased approaches reduce upfront risks and prove viability.
- **ESG Priorities:** Emphasizing sustainability and community benefits.
- **Market Opportunities:** Baseload Capital demonstrates geothermal’s adaptability with modular projects for diverse markets.

By delivering sound business models and competitive returns, geothermal energy can secure its position as a cornerstone of the global energy transition.

## Market Analysis by Region - Overview Power Generation Capacity & Projects



Africa	Asia & Pacific	Europe & Middle East	Latin America & Caribbean	North America*
<p>992 3,974</p> <p>■ Projects ■ Plants</p>	<p>6,559 11,351</p>	<p>3,629 2,366</p>	<p>1,751 1,227</p>	<p>3,942 5,395</p>
<p><b>Key countries:</b> Kenya - 985 MWe Ethiopia - 7.3 MWe (not op.)</p>	<p><b>Key countries:</b> Indonesia - 2,665 MWe Philippines - 1,907 MWe New Zealand - 1,207 MWe</p>	<p><b>Key countries:</b> Türkiye - 1,734 MWe Italy - 916 MWe Iceland - 786 MWe</p>	<p><b>Key countries:</b> Mexico- 976 MWe Costa Rica - 259 MWe El Salvador - 204 MWe</p>	<p><b>Key countries:</b> United States - 3,937 MWe Canada - 5 MWe</p>
<p><b>Regional development:</b> 3,974 MWe</p>	<p><b>Regional development:</b> 11,351 MW</p>	<p><b>Regional development:</b> 2,366 MWe</p>	<p><b>Regional development:</b> 1,227 MWe</p>	<p><b>Regional development:</b> 5,395 MWe</p>
<p><b>Notes:</b> Kenya continues to lead development with a large number of projects in various stages of development. Ethiopia has ongoing development. Development in Djibouti and Tanzania is lagging behind and further development ambitions in other countries in East Africa.</p>	<p><b>Notes:</b> Indonesia continues pushing large-scale projects with the Philippines sees binary plant additions for existing plants and smaller scale developments. New Zealand has seen a real push and continues development. Japan with small development and big ambitions in Taiwan.</p>	<p><b>Notes:</b> After an idle period, Türkiye sees continued development of smaller plants. Some addition expected in Iceland with unclear development situation in Italy. Elsewhere a focus has been on development for heating and potential desalination.</p>	<p><b>Notes:</b> Development has been idle in the region, with ongoing smaller development and ambitions, e.g. in the Caribbean. A push continues for Colombia, yet the situation is unclear in Bolivia, Argentina and Chile, despite ambitions for geothermal development for hydrogen production.</p>	<p><b>Notes:</b> The United States continues the increment additions of capacity and development. A focus on technological advancements sees EGS &amp; AGS being pushed with potentially large-scale development implications. Canada sees continued interest yet small scale development efforts.</p>

\* Note: For this report, North America excludes Mexico, which is added to Latin America & the Caribbean.

## Competitive Landscape: A Fragmented Industry with Global Opportunities



### Competitive Dynamics

The geothermal energy market is characterized by a unique competitive dynamic, distinct from other renewable energy sectors such as wind or solar, where global players dominate. Instead, the geothermal industry remains highly fragmented, with a strong focus on national markets and limited international competition.

**Ormat Technologies** stands out as the only truly international geothermal developer, operating across multiple continents and leveraging a vertically integrated business model. In contrast, most other major players, such as **Energy Development Corporation (EDC)** in the Philippines and **Star Energy** in Indonesia, remain largely focused on their domestic markets.

Despite efforts by companies such as EDC, developers from New Zealand and Iceland, and even larger players like Engie and Chevron, no sustainable international position has been established outside of niche markets. This highlights the challenges of entering unfamiliar territories where local expertise, regulatory frameworks, and market dynamics can be significant barriers.

### ThinkGeoEnergy’s Perspective

ThinkGeoEnergy has been closely monitoring these dynamics for over 14 years, providing in-depth analysis of the competitive landscape. This long-term perspective allows us to identify critical trends and challenges, including:

- **A lack of local expertise** in regulatory frameworks and resource management.
- **Market conditions that favour national champions** over international competition.
- **Complex project pipelines** requiring specialized knowledge.

Despite these challenges, opportunities exist for cross-border collaboration and innovation, particularly with emerging technologies like **Enhanced Geothermal Systems (EGS)** and **Advanced Geothermal Systems (AGS)**, which can open new markets.

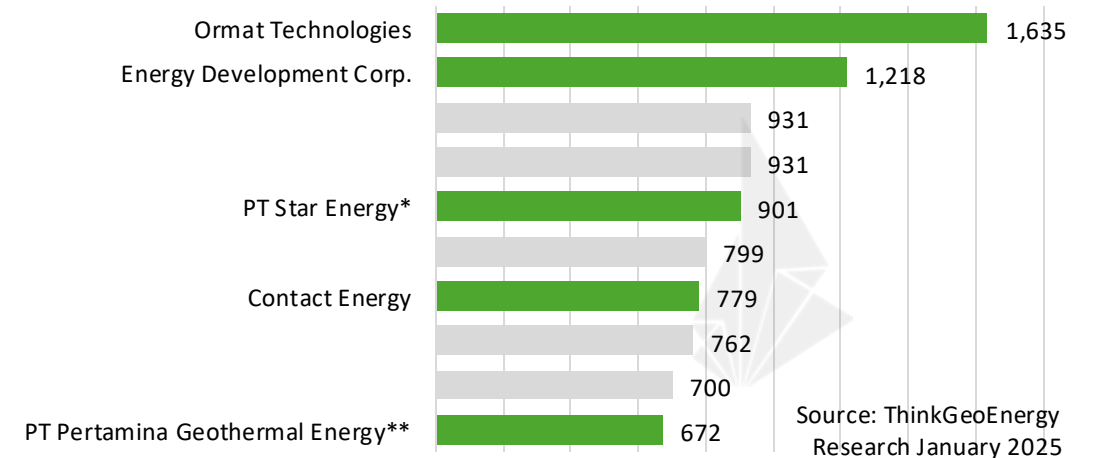
What sets ThinkGeoEnergy apart is our **direct engagement with the sector**, enabling us to deliver insights that reflect the realities of geothermal development. Unlike generalized reports from international organizations, our data and analysis are rooted in collaboration with developers, operators, and governments. This ensures our findings are accurate, actionable, and tailored to the specific needs of the geothermal community.

Our insights go beyond surface-level data. By combining project information, market intelligence, and stakeholder input, **ThinkGeoEnergy’s Global Geothermal Power Yearbook 2024** will offer unparalleled clarity into the competitive dynamics of the sector. This comprehensive report provides deeper profiles of key developers and operators, highlights emerging opportunities, and positions stakeholders to succeed in an evolving industry.

### Looking Ahead

The future of the geothermal sector hinges on fostering international collaboration and scaling innovative technologies. Developers and operators must focus on:  
 Building partnerships that integrate local expertise with international resources.  
 Adopting scalable technologies like EGS and AGS to unlock resources in untapped regions.  
 Leveraging financial models that reduce project risk and attract investors.

The chart below highlights a selected number of leading geothermal operators globally, showcasing their installed capacities and market presence. Ormat remains the only truly international player in this highly fragmented market.



\*PT Star Energy combined electricity and separate steam capacity

\*\* PT Pertamina Geothermal Energy has additional 1,205 MW operating in partnership



The ThinkGeoEnergy **Global Geothermal Power Yearbook 2024** expands on this Snapshot report, providing a deeper dive into geothermal power generation, technological advancements, and market trends. Designed as the definitive annual resource for the geothermal industry, it offers exclusive data and actionable insights tailored for developers, investors, and policymakers.

**Key Features**

- **Global Capacity Analysis:** Top 20 geothermal countries with 5-year growth trends.
- **Project Pipelines:** Comprehensive updates on global developments.
- **Technological Advances:** Insights into EGS, AGS, geopressed systems, and more.
- **Industry Profiles:** Analysis of leading developers and operators.
- **Future Trends:** Projections and opportunities shaping geothermal’s role in the energy transition.

Feature	Free Snapshot Report	Global Power Yearbook 2024
Global Capacity Analysis	Top 10 Countries	Top 20 Countries, 5-year growth trends
Project Development Highlights	Selected examples	Full pipeline analysis
Technological Advancements	Overview of current technologies	Detailed case studies and company insights
Regional Markets Overview	High-level summaries	In-depth regional analysis
Future Trends & Opportunities	Brief insights	Comprehensive forecasts

**ThinkGeoEnergy Global Geothermal Power Yearbook 2024 - to be released February 2025**

Gain access to unparalleled insights, in-depth data, and actionable intelligence tailored to developers, investors, and policymakers.

Reasonably priced to ensure accessibility, the Yearbook is designed to meet the needs of the geothermal community and advance the sector’s growth.

Soon available on our [Publication Shop](#) page

### Basis of Our Data: Transparency and Commitment to Accuracy

Since 2008, ThinkGeoEnergy has been dedicated to providing accurate and reliable information on the geothermal energy sector. Our research builds on over a decade of diligent reporting, enhanced by contributions from individuals, organizations, and governments worldwide.

We also acknowledge the invaluable work of industry rapporteurs and organizations, whose efforts have laid the groundwork for global geothermal reporting. This includes the **International Geothermal Association**, the **European Geothermal Energy Council (EGEC)**, and the former **Geothermal Energy Association (GEA)**, now part of **Geothermal Rising**. Their foundational work, along with data shared by companies, governments, and ministries, has been instrumental in shaping our understanding of the industry.

### Our Approach to Data Measurement

Our approach reflects the realities of the geothermal sector, prioritizing **operational capacity** over theoretical nameplate values and leveraging direct input from project operators. Unlike generalized estimates, our data provides actionable intelligence rooted in industry realities.

To ensure clarity and comparability, we focus on:

- **Installed Nameplate Power Generation Capacity:** Specifically, operational plants to reflect active geothermal resources.
- **Exclusion of Non-Operational Capacities:** This avoids overstating geothermal's contribution by eliminating inactive projects.

We recognize that challenges persist. For some countries, multiple datasets exist, requiring informed judgments and iterative updates to refine accuracy. However, we believe that data originating from within the geothermal sector—provided by industry stakeholders - is the most reliable and reflective of reality.

### Our Commitment

At ThinkGeoEnergy, transparency and engagement are at the heart of our work. We actively collaborate with stakeholders to ensure our reporting remains accurate, consistent, and reflective of the latest industry developments.

We continually refine our methodologies and leverage direct industry collaboration to ensure our data remains the most relevant and trusted for decision-makers in the geothermal sector.

If you have suggestions, contributions, or corrections regarding the data presented, please contact us at [news@thinkgeoenergy.com](mailto:news@thinkgeoenergy.com). By fostering open dialogue and working together, we aim to deliver the most trusted data available, empowering the geothermal sector to thrive and fulfill its critical role in the global energy transition.

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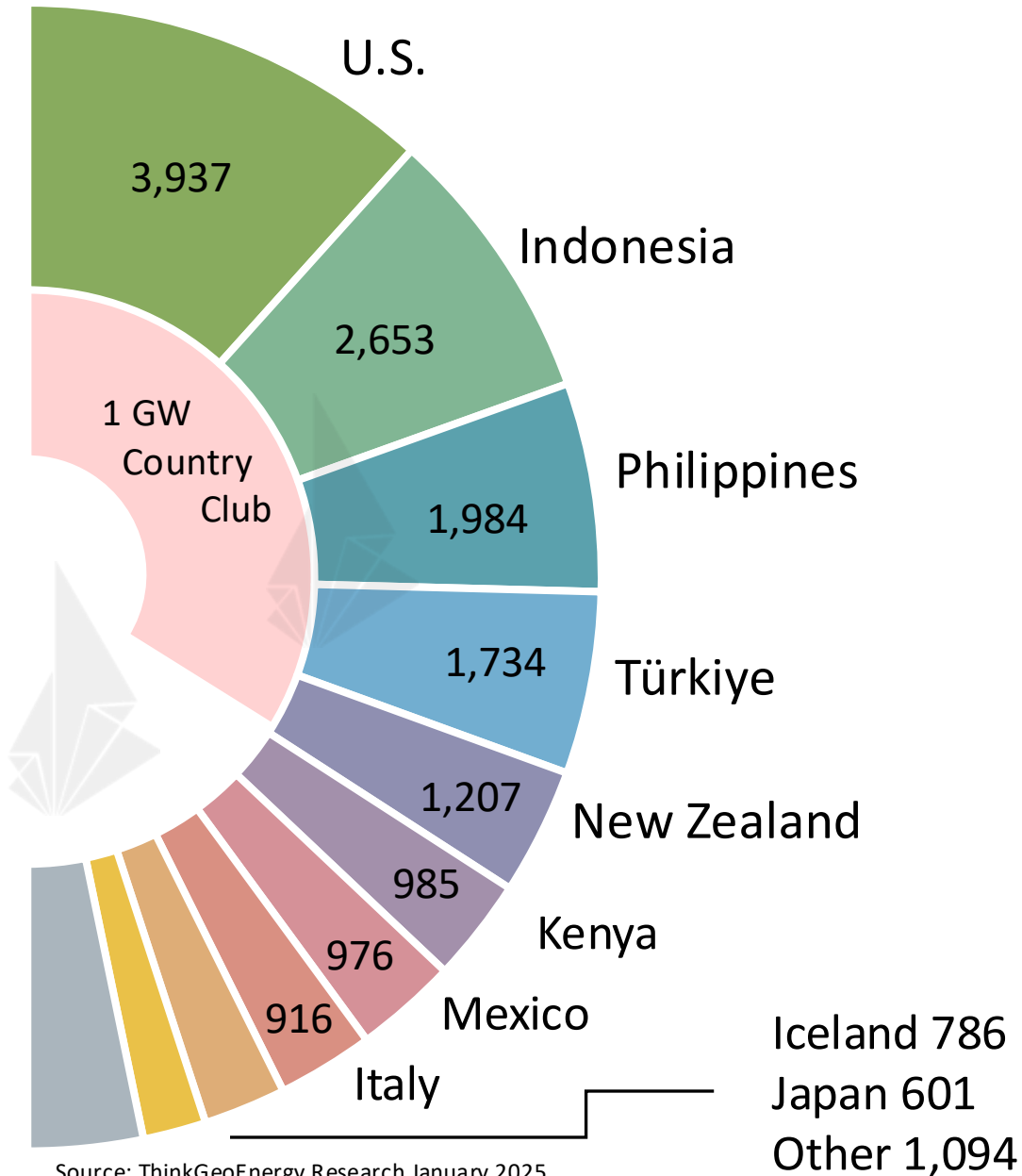
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Operations & Strategy

# TOP 10 Geothermal Countries 2024

Installed Capacity  
January 2025

## Total 16,873 MW

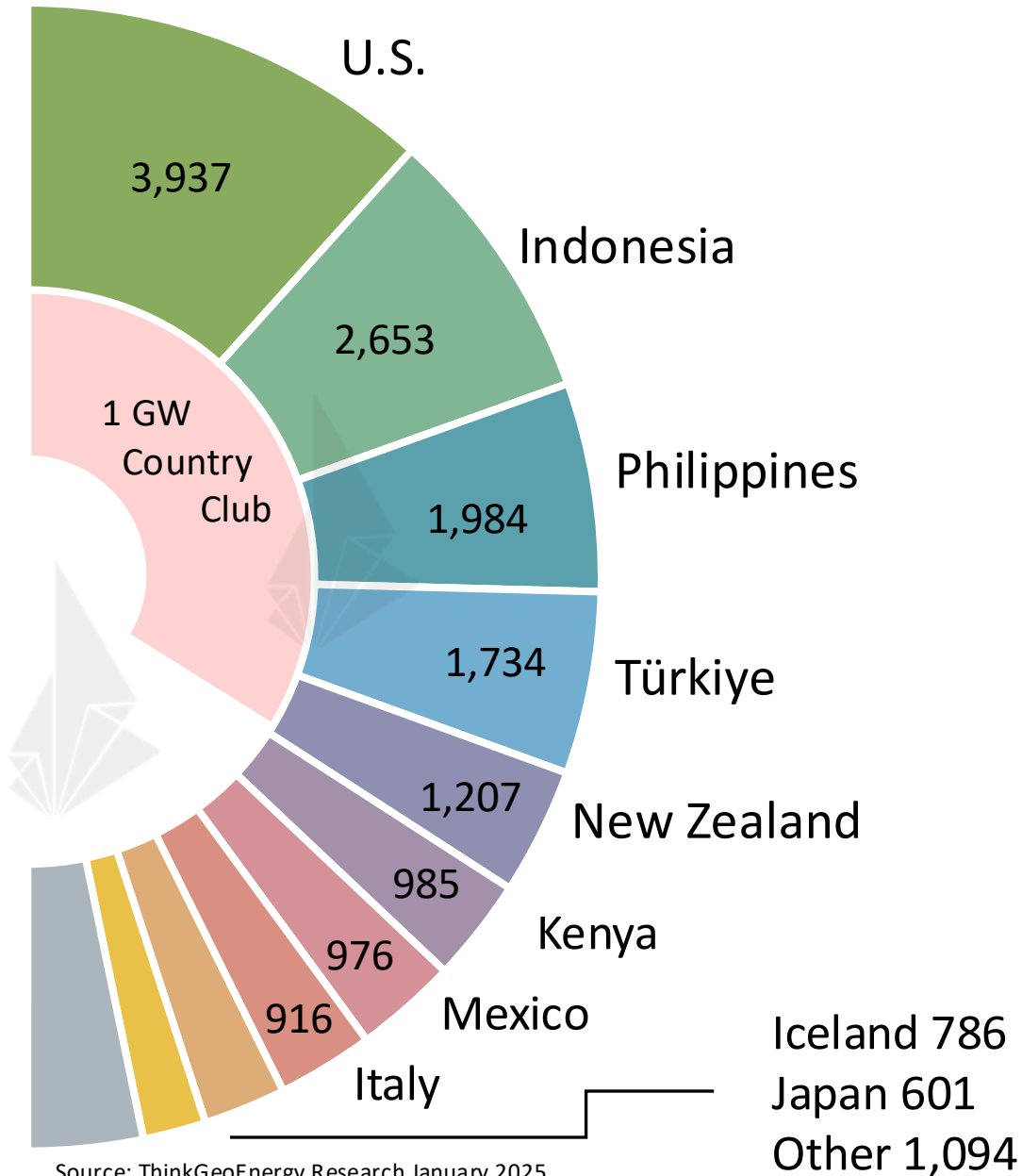


Source: ThinkGeoEnergy Research January 2025

# TOP 10 Geothermal Countries 2024

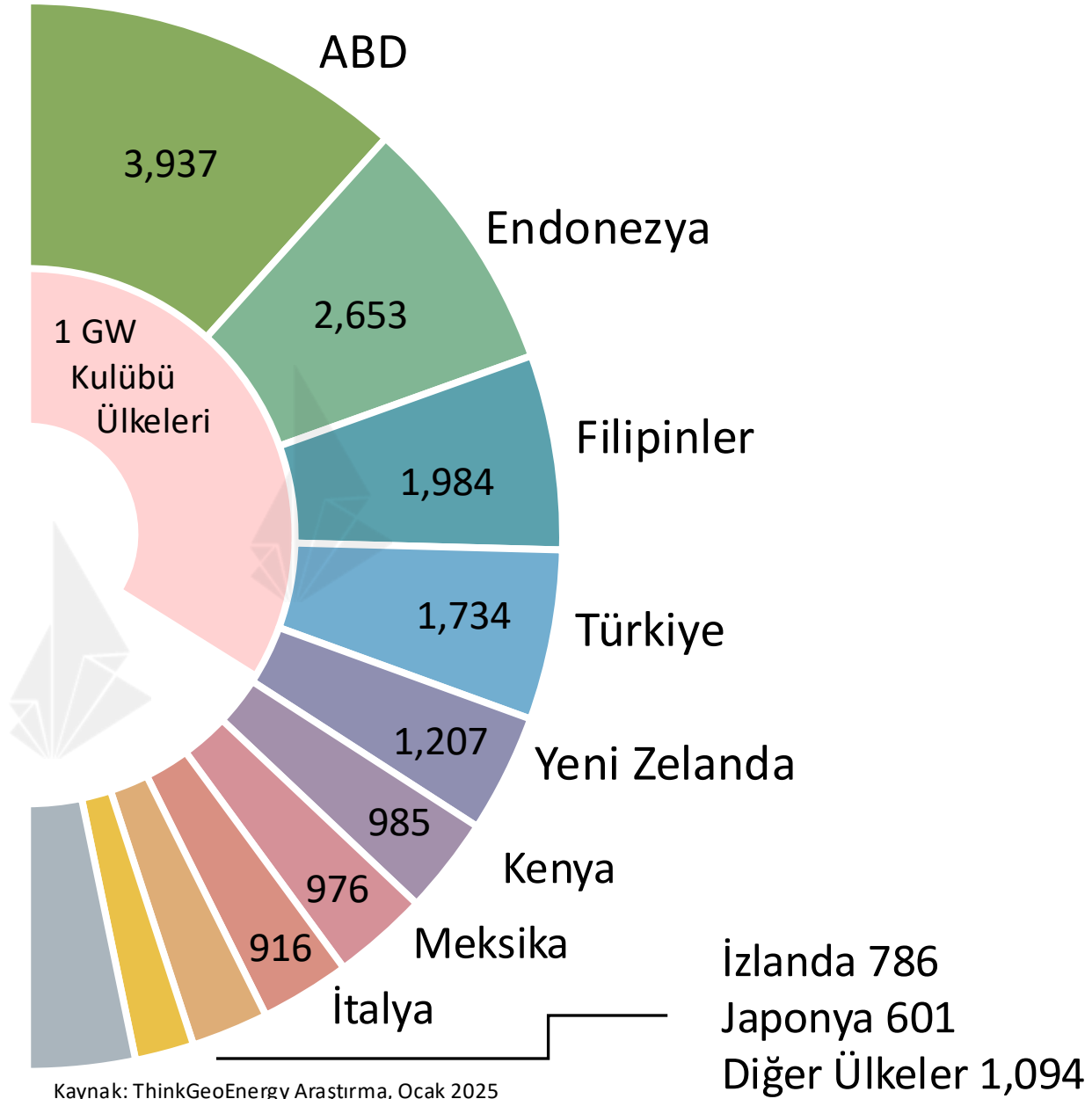
Installed Capacity  
January 2025

## Total 16,873 MW



Source: ThinkGeoEnergy Research January 2025





Kaynak: ThinkGeoEnergy Araştırma, Ocak 2025

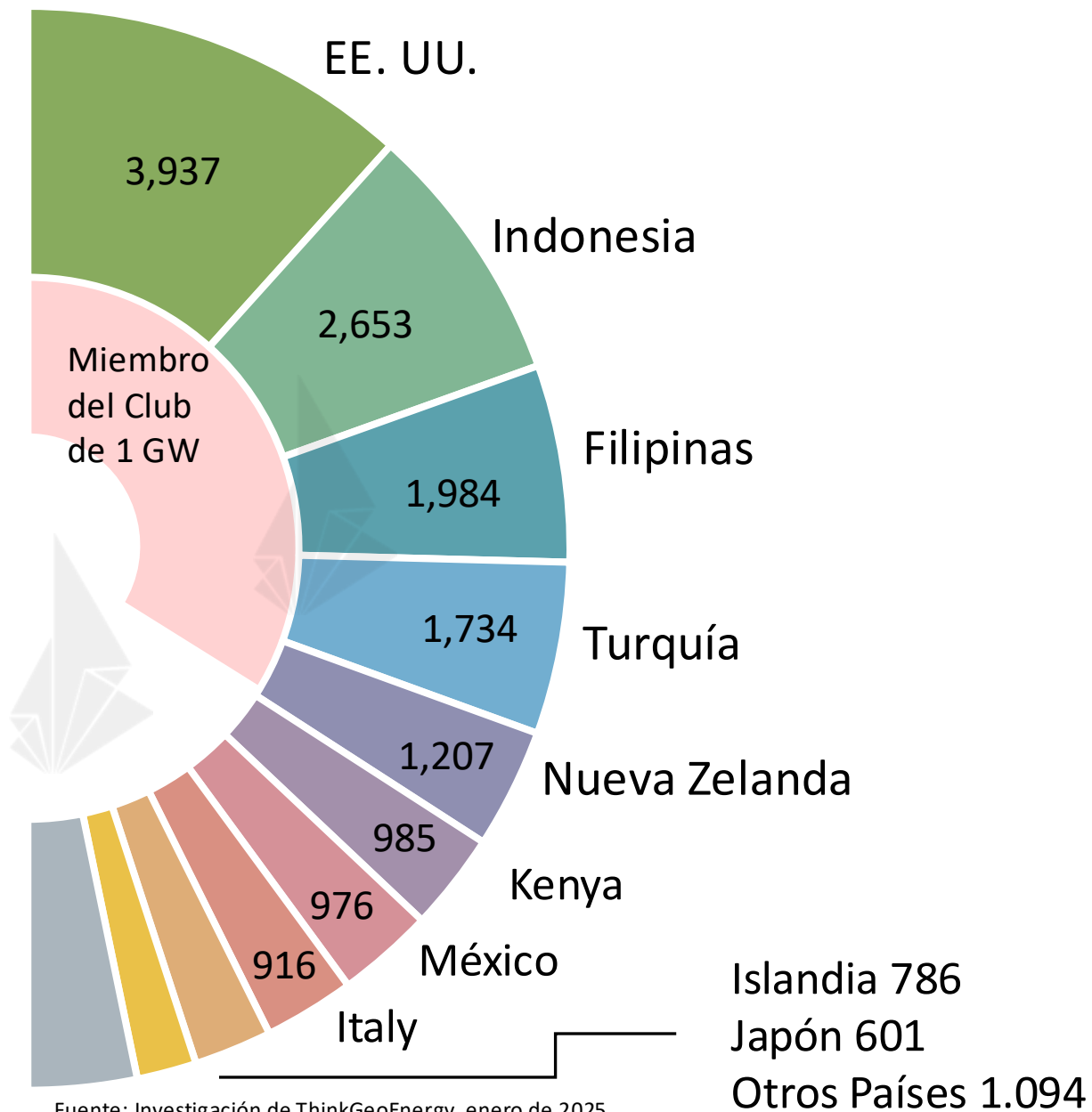
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# TOP 10 Jeotermal Enerji Ülkeleri 2024

Kurulu Kapasite  
Ocak 2025

**Toplam: 16.873 MW**





Fuente: Investigación de ThinkGeoEnergy, enero de 2025

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# TOP 10 Países Líderes en Energía Geotérmica 2024

Capacidad Instalada Enero 2025

**Total 16.873 MW**

