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The Andean Heat Belt: A Natural Geothermal Superhighway



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→ GLOBAL GT REGION OF THE MONTH

This Month's Hot Spot

Focus on: Latin America

From Colombia's accelerating momentum, to CEGA's scientific leadership in the southern Andes, to the vast geothermal corridor running the length of the continent, the region is stepping into a new era of opportunity. And along the Amazon fringe, geothermal is emerging not as megawatt-scale power, but as a lifeline for remote communities seeking reliability, affordability, and resilience. This edition captures the energy, ambition, and diversity of a region where geothermal is progress in motion.

The Andean Geothermal Belt: A Natural Energy Corridor



Stretching more than 7,000 kilometers from Colombia to Chile, the Andes form one of the most geothermally promising regions on Earth — a continuous chain of deep heat, volcanic arcs, active tectonics, and high-enthalpy systems capable of powering and heating entire economies.

This is the Andean Geothermal Belt, a natural energy corridor that links nations through shared geology and shared opportunity. It is one of the only regions in the world where high-temperature geothermal is present at scale across multiple countries, offering a continental pathway for energy security, industrial heat, and climate resilience.

Shared Heat, Shared Challenges, Shared Opportunity

The stakes are rising. Countries across the region are wrestling with:

- Growing electricity demand
- Diesel dependence in remote areas
- Industrial heat needs
- Climate adaptation pressures
- Interest in green hydrogen
- Digital infrastructure expansion



Geothermal is uniquely positioned to deliver on all of these - not intermittently, but 24/7 and locally.



Looking ahead, the Andean Belt could become:

- A backbone for firm renewable power
- A platform for energy diplomacy
- A driver of regional investment corridors
- A foundation for hydrogen and mineral value chains
- A stabilizer for remote and high-altitude communities

The region has the heat. It has the science. It has the geography.

Now it needs coordination, confidence, and capital.





→ GEOTHERMAL: LATIN AMERICA'S UNTAPPED GIANT

Latin America's Race to Understand the Subsurface

Why Geothermal Is Emerging as the Region's Greatest Energy Prize

Latin America sits on one of the most powerful geothermal corridors on Earth - but turning that potential into real, bankable projects requires one thing above all: understanding what lies beneath our feet. In this special contribution, Sequent brings a Latin American lens to a global conversation sparked by the Reuters Events whitepaper Geoscience: The Race to Understand the Subsurface. Joyce Cruz Di Giovanni offers a clear reminder: as the world looks to the region for its critical minerals, the real long-term value may be the 24/7 heat right under the Andes.

This article connects perfectly with our November theme - The Andean Heat Belt - and highlights why subsurface intelligence is becoming the cornerstone of the region's energy future.

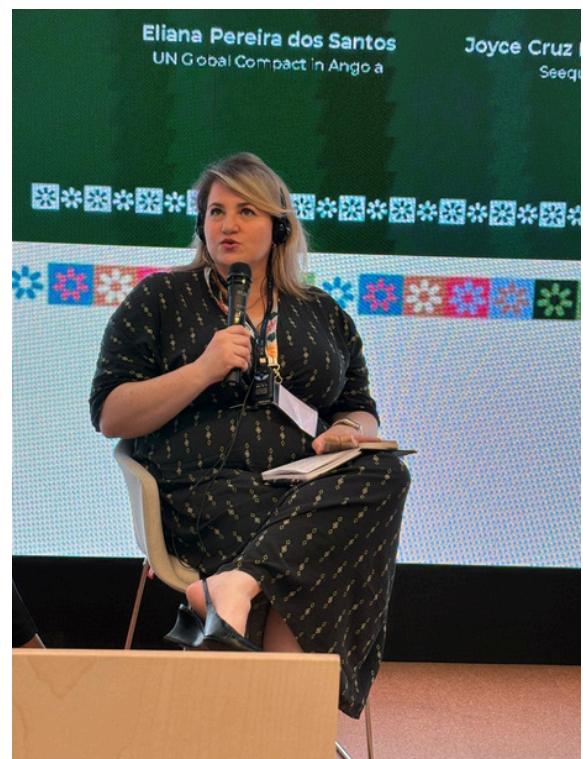
A Latin American perspective on Geoscience: The Race to Understand the Subsurface

The whitepaper tells a global story but for Latin America, it points directly to our greatest untapped opportunity: geothermal energy.

While the world looks to us for the critical minerals for the energy transition, our geological backbone - the Andes - offers a far greater prize. It holds the potential for clean, 24/7 geothermal power, the very baseload energy our growing economies need for true energy independence.

However, as the whitepaper highlights, these resources are complex. Unlocking them requires turning intricate subsurface data into clear, viable projects. This is where technology becomes the great enabler. Solutions like Sequent's provide teams with the clarity to de-risk major investments and develop these resources with confidence.

The geothermal energy market in Latin America is increasingly viewed as a strategic component of the region's clean energy transition. Countries such as Costa Rica, and El Salvador have demonstrated leadership in harnessing geothermal resources, leveraging their volcanic geography to provide reliable baseload power. Despite this progress, development remains uneven due to high upfront costs, limited exploration data, and regulatory challenges. However, the region's vast geothermal potential positions it as a critical solution for diversifying energy matrices and reducing dependence on hydropower and fossil fuels, particularly considering growing electrification and decarbonisation goals.



A Moment of Regional Alignment: COP30 in Brazil

COP30, held in Belém do Pará, Brazil in November this year, underscored the importance of geothermal energy within broader climate and energy strategies. Discussions emphasised the need for baseload renewable sources - such as geothermal - to complement intermittent technologies like solar and wind, ensuring grid stability and energy security. Regional integration and joint planning were highlighted as key enablers for scaling geothermal projects, alongside financing mechanisms and technological innovation. Initiatives such as the Latin America Clean Energy Coalition (LACEC) aim to accelerate investment and policy alignment, reinforcing geothermal's role in achieving the region's target of tripling renewable capacity by 2030. These commitments signal a growing recognition that geothermal energy is not only a clean alternative but also a cornerstone for sustainable development and resilience in Latin America's energy system.

Also, in a further show of commitment, New Zealand and Iceland have formalised their collaboration on geothermal energy with an agreement signed by government ministers at COP30. The partnership specifically targets the advancement of superhot and supercritical geothermal systems through joint research, industry workshops, and academic exchanges. This initiative supports New Zealand's goal to double its renewable energy generation by 2050 and is backed by up to \$60 million in government funding earmarked for geothermal exploration.

You can find the whitepaper "Geoscience: The race to understand the subsurface" here:
<https://www.sequent.com/community/research-reports/geoscience-the-race-to-understand-the-subsurface/>



Colombia Rising: Geothermal Momentum in the Heart of the Andes

If there's one country in Latin America where geothermal has shifted from curiosity to credible energy pathway, it's Colombia.

The turning point came at RENAG 2025, where for the first time the national conversation felt aligned: government, researchers, industry players, and international partners all leaning in with a shared sense of possibility.

Colombia sits on one of the most promising geological settings in the northern Andes, with a mix of volcanic systems, fault-controlled geothermal zones, and even co-production potential linked to the country's mature oil and gas sector. This gives Colombia a unique advantage: it can build geothermal capacity using skills, data, and infrastructure it already has.



AGEOCOL Steps onto the Regional Stage

At the center of this momentum is AGECOL, now stepping confidently into its role as a national platform for geothermal ambition. Universities are strengthening research programs, ministries are exploring geothermal within their energy diversification strategies, and regional collaborations with partners like CEGA are growing fast.



What makes Colombia strategically important is its position as the northern anchor of the Andean geothermal chain. As development accelerates in Chile, Peru, and Bolivia, Colombia has the opportunity to lead standardization, attract early-stage financing, and demonstrate the first modern geothermal pilot in the northern Andes.

Key signals to watch

Colombia hasn't crossed the finish line yet, but it has finally stepped onto the track. And in a region defined by volcanic power and rising energy needs, timing is everything.

Key signals to watch:

- First pilot demonstrations
- Government incentive frameworks
- Oil & gas crossover projects
- Academic–industry consortia
- Regional partnerships across the Andes

CEGA & the Southern Andes: Latin America's Geothermal Knowledge Engine

While Colombia brings momentum, Chile brings mastery - and that mastery has a home: CEGA, the Centro de Excelencia en Geotermia de los Andes.



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CEGA is widely regarded as the scientific heartbeat of geothermal research in the region. Its work reaches far beyond Chile's borders, supporting projects, capacity building, and policy development in Peru, Bolivia, and Colombia, helping form the scientific spine that geothermal development in the Andes relies on.

What sets CEGA apart is the combination of field access, technical capability, and research depth. Nowhere else do you find such ideal conditions for applied geothermal science — high-altitude volcanism, superhot resource potential, structural complexity, and decades of multidisciplinary data ready to be interpreted through modern tools.

From EGS techniques and reservoir modeling to community engagement frameworks and risk reduction strategies, CEGA doesn't just study geothermal — it accelerates it. The institution has become a catalyst for collaboration, bringing together ministries, investors, universities, and developers to create shared understanding and momentum.

As the southern Andes continue to move toward large-scale geothermal utilization, CEGA will remain the knowledge engine that drives confidence, informs investment, and strengthens the region's ability to turn heat into opportunity.

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