

THE MAGAZINE WITH INSIGHT
BUSINESSFOCUS

CEIBA ENERGY POWER TO GROW



CEIBA IS A COMPANY FOCUSED ON BRINGING POWER TO LATIN AMERICA, AND WITH ITS LATEST PROJECT THE FIRM IS SET TO MAKE A HUGE IMPACT.

POWER TO GROW

PROJECT MANAGED BY: **TIMOTHY GARWOOD**

Founded in 2015, Ceiba Energy is an owner, developer, and operator of clean, sustainable power generation assets in Latin America. The company is fully backed by Denham Capital, a private equity outfit that focuses on three main sectors including sustainable infrastructure, energy resources, and mining.

“**T**he way Denham Capital works is to partner with management teams that have significant expertise in specific regions or technology,” explains Emilio Vicens, CEO of Ceiba Energy. “We are one of those management teams. Our expertise is power. We’ve been working in emerging markets, and our mandate is to develop, acquire, own and operate sustainable power assets in Latin America through a combination of M&A activities and greenfield development, from Mexico to Chile.”

Ceiba’s management team brings a wealth of experience from a range of leading power companies to the table, along with a unique perspective.

“We look at things differently. We like to look for spaces in which we can add value to the markets in which we operate,” Vicens says. “There is no reason for us to simply be an additional player.”

Throughout the young company’s life, a major area of focus has been Brazil, which has received a significant amount of attention from Ceiba. Most recently that attention has yielded the Portocem Project, a large-scale LNG-to-power project in Brazil generating close to 1.6 GW.

A BRAZILIAN PROJECT

“Our large-scale LNG-to-power project in Brazil is unique from many perspectives,” Vicens points out. It will be a massive power, gas, and overall energy hub in Northeast Brazil and that is what makes it so attractive. There are very few opportunities like this in Latin America and, frankly, the world.”

Ceiba is not just looking for big projects in and of themselves, however. It also cares about the project’s impact on the wider economy, and the company itself.

The project will provide reliable and firm capacity to Brazil and support intermittent renewable energy in the region. It will also create up to 3,000 jobs during the construction period and up to 150 jobs during operation.

“We want projects that allow us to grow. We see this as about more than just power,” Vicens says. “We see it as a mid-to-long-term business that will generate significant value for the market going forward. The powerplant will lead to further activities, including a storage and regasification vessel at the port of Pecém. That would allow gas to come into Brazil from the end of the pipeline network, all the way in the northeast of the country, opposite to where the gas generally flows. Gas typically flows into Brazil from Rio de Janeiro all the way up to the Northeast. The further you are from the gas source the more expensive and difficult it is to source. We will on-tap significant growth potential in gas utilization for power and industrial customers across the region that is critical for development.”



Emilio Vicens, CEO,
Ceiba Energy.

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CEIBA ENERGY AND INNIO: COLLABORATING TO POWER THE AMAZON

Manaus offers residents and tourists an abundance of enjoyable activities. Individuals can hike through the pristine rainforests in the morning and enjoy a passionate opera at night. Manaus is a truly special place, offering a rich variety of nature, art, culture and dining. Located in the center of the world's largest rainforest, Manaus is the capital and largest city of the Brazilian state of Amazonas. It is the seventh-largest city in Brazil, hosting a rapidly growing population that is estimated to be more than 2.2 million residents. This growing population is accompanied by increasing economic development that places Manaus as the sixth-largest economy in Brazil. The combination of a growing population and an increasing economy coupled with the city's distance from Brazil's electricity grid presents a major challenge for Manaus; it faces a lack of sufficient power supply.



Figure 1. City of Manaus, Brazil.

BRINGING MORE POWER TO PARADISE

Because there exists insufficient power supply, residents, tourists and industry are faced with continuous power disruptions and distribution difficulties. Complicating the current situation, Manaus' power demand is expected to increase in a significant way by 2025. This presents a daunting challenge as Brazil plans to reduce its carbon emissions by 50 percent by 2030. To meet current and future power demand, Manaus requires power generation that is flexible, scalable, and resilient. Seeking to support Brazil's goal to reduce the country's greenhouse gas emissions while meeting Manaus' growing demand for electricity, Ceiba Energy, a Houston-based power company with a focus in Latin America, implemented a very sustainable plan. Breitener Energética owns and operates two gas-fired power plants, Jaraqui and Tambaqui, in Manaus, Brazil. Both plants are fully contracted, and their energy is delivered to Amazonas Energia through a 20-year Build, Own and Transfer Agreement. In 2021, Ceiba Energy acquired 100% of Breitener Energética S.A. from Petrobras and other minority partners. With the purchase of Breitener Energética S.A., Ceiba Energy further solidified its role as a leader in delivering sustainable energy in Latin America, ensuring that the power plants would continue plans to increase power and efficiency through the revitalizing of all 46 engines operating at the two sites.

WHAT IS OLD IS NEW AGAIN

In 2010, Breitener Energética converted its two power plants that were running on heavy fuel-oil, UTE Mattos and UTE Fran, to operate on natural gas, installing 23 of INNIO's Jenbacher J620 engines at each site. The two power plants generate a combined 120 megawatts, about 30% of the power for Manaus. Both power plants are operating on pipeline gas from the Urucu field in northern Brazil that is piped to the city of Manaus. Ceiba Energy understood that the sure path to cleaner and more efficient power is through technology and digitalization. Modernizing its newly acquired power plants, that logged more than 60,000 operating hours, would be key in meeting Manaus' energy demand by enabling a constant and reliable electricity supply. Ceiba Energy decided to give the power plants a second life with continuing an upgrades program that would be implemented by INNIO Jenbacher. The upgrade will meet rapidly changing energy needs with energy solutions that are flexible, scalable, and resilient.

On the revitalization of the Jenbacher engines, Ceiba requested that up to 46 J620 engines undergo complete overhauls. INNIO's Jenbacher Overhaul Technology Centre local team in Manaus delivered exchange units that were preassembled and completely overhauled with new spare parts and delivered directly to the plants. Meeting all government health requirements in the midst of the COVID 19 global pandemic, Jenbacher has revitalized 37 of the 46 engines. "With power demand in Manaus expected to increase significantly by 2025, we needed to revitalize our power plants while also reducing the outage risks, boosting the performance and productivity of the plants' assets to provide the power Manaus needs 24/7 and 365 days per year," said Javier Marrero, Chief Operating Officer of Ceiba Energy. "The plants' revitalization makes a major positive impact on our operations. INNIO's technology offer our power plants flexible and resilient solutions that meet all our power needs."

DIGITALIZATION-ENABLED PERFORMANCE AND PROFITABILITY

In addition to the revitalization, Ceiba requested that INNIO provide its cloud-based myPlant platform digital technology to provide the power plants with optimized performance, reduced operating costs and increased engine uptime. Through real-time monitoring, Breitener Energética engineers can manage the plant assets from anywhere, anytime – both secure and live. INNIO's myPlant digital solution allows Breitener Energética to take control of the operating performance and profitability of the power plant engines by giving it a digital life. INNIO's myPlant digital solution supports optimizing performance and reducing possible unplanned downtime through continuous development of self-learning algorithms. By equipping the two power plants with INNIO's myPlant Performance solution, plant operators are enabled with around-the-clock remote monitoring and diagnostics of equipment operation, moving from a reactive maintenance schedule to a condition-based maintenance approach.



Figure 5. INNIO Servicing Ceiba Energy's Power Plant with Jenbacher Engines.

"The revitalization of the large engine power plants in Manaus serves as a great example of how R&D capabilities give products a second life, providing investment security for our customers at the end of the engine's lifecycle. The engines can be reused and even upgraded to increase efficiency and meet the latest environmental requirements," said Carl Richers, Vice President Product Management & Marketing of INNIO Jenbacher. "This is a very sustainable path to support Manaus' growing power demand. INNIO helps customers like Ceiba Energy get more environmentally friendly electricity by providing flexible, scalable and resilient solutions that allow them to navigate the fast-changing energy landscape of traditional and green energy sources."

Ceiba Energy also is tasking INNIO to supply spare parts for the Jenbacher engines over the next six years through a long-term service agreement. Ceiba Energy's Breitener Energética service technicians will be trained and certified by INNIO and will conduct the maintenance work themselves. This agreement provides delivery of the original Jenbacher engines' spare parts for preventative maintenance based on the operating hours of the engines.

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The Portocem Project was initiated by a development partner before Ceiba purchased the project in 2019. Ceiba purchased the rights to the land, the right to access to the existing port, and the relevant environmental permits, but apart from that, the company was working from scratch to develop a project able to compete in the highly competitive Brazilian regulated power market.

"Since then, we have fully developed this into a credible, highly structured world-class project," says Vicens.

The next thing Ceiba needed was to secure the necessary demand for the project with a Power Purchase Agreement ("PPA").

"Typically, in Brazil, we have country-wide auctions to bid for PPAs. We participated in

several PPA auctions, and finally, in 2021, we won close to 1,600 MW of capacity in the first of its kind capacity auction," Vicens tells us. "What that means is that we're now in a position to fully go ahead and build the asset which we're contracting."

A project on this scale needs an appropriate partner, and Ceiba Energy has found that in Shell, a world-class fuel supplier that brings to the table one of the strongest LNG portfolios in the world.

"We're now finalising and discussing the terms of the agreement by which they will sell gas not only to our power plant but to potentially many other customers in the region as a whole using our infrastructure," Vicens says.

As well as partnerships with multinational corporations, Ceiba is also working with a number of local infrastructure partners.

As Vicens points out, "We have a great relationship with the port, and there's the industrial zone around the port that will bring tremendous value to the project in terms of better logistics. Thanks to all these partnerships we think we can be operational by mid-2026." >>

"WE WANT PROJECTS
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ABOUT **MORE THAN**
JUST POWER."



COMPLEMENTARY VISION

This plant is meant to serve not just as a power source in its own right, but as an essential component in a combined solution to Brazil's energy demand.

"This is a region that has a massive amount of wind and solar energy. A power plant like ours is the perfect complement because it adds stability to the system, allowing it to grow as much as needed," explains Vicens. "We're not running on a permanent basis, only when the system requires us to. With wind and solar there can be intermittency, days without wind, or nights with no sun. We're a perfect backup. The region is also poised to be a larger centre of potential in the future of green hydrogen."

Right now, Ceiba is finalising some key contracts including gas supply and equipment supply in the form of EPC and



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of installed capacity
in power plants.

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December 2021 • Brazil / USA • Power

BNP Paribas acted as
exclusive financial advisor to

Ceiba Energy

in the context of the 1st Reserve Capacity
Auction, which has been the largest ever
PPA contract tendering in the Brazilian
thermal generation sector.

Moreover, the bank is also acting as one
of the global coordinators in the financing
of the project.



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FSRU contracts and is planning for construction to begin in early 2023. By 2026, Ceiba hopes to have the largest power complex in Brazil.

Vicens believes the biggest obstacles to the project have already been overcome.

"The biggest challenge is to obtain a large scale PPA, which we have done so already under a PPA auction supported by Denham," he tells us. "Winning a PPA in Brazil is extremely challenging in the sense that the environment is significantly competitive. There is a very strict set of rules, and to compete and win you have to be extremely sharp in what you are doing. You must be very diligent in making sure that the costs are what they should be and that the project is well structured even prior to winning or tendering for the projects. You have to know what you are undertaking." >>



LOCKTON COMPANIES

We have been experiencing significant growth in foreign investment appetite in Latin America in the power generation and oil and gas sectors.

While Covid has brought energy investments around the world to a standstill, countries like Brazil, have pushed ahead faster than before on both greenfield projects and mergers & acquisitions. The Russian sanctions may intensify even further this trend.

Properly identifying, managing, and transferring, when applicable, the various types of risks, since the beginning of the life cycle, is key to enhancing the resilience of any new investment. And partnering with the right risk advisor/insurance broker may become even more crucial when investing in a different country.

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"We at Lockton feel very honored to work very closely with some of the fastest-growing energy companies investing in Latin America. Lockton is also the fastest growing broking house amongst the ten biggest in the world and have invested heavily in Latin America in the last two years, creating even stronger synergies with those clients", comments Carlos Vinicius Simonini, Managing Director at Lockton in Brazil.

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In terms of Ceiba's future undertakings, Vicens believes strongly in Brazil but is also looking to continue the firm's operations across Latin America.

"Our hope is to continue to grow, not only in Brazil, although Brazil will always be a significant market for Ceiba. We're looking for other markets where we have significant assets and have worked well in the past with other companies," says Vicens. "We're familiar with having activities in multiple developing markets, trying to spread the risk around. We believe strongly in Brazil, but sometimes Mexico will be doing better, or Chile or Colombia or Peru. We continuously work and make investments and transactions across the region."

As well as working across different markets, Vicens also has his eyes on a range of sectors within those markets.

"We're not just a gas-generation company, we are heavily involved in renewables, including solar, wind and hydro," he says. "This particular project is gas, but it is an extremely good complement to the renewable sector with a low environmental footprint. Some steel mills for instance still burn coal. They are looking into options to reduce emissions and we can help with that. We can also help with numerous other industries in terms of power generation and gas supply."

The future is looking bright for Ceiba.

"We've got to build a 1,600-megawatt power plant on time and budget. We have several collateral projects to complete alongside that, but the most interesting aspect is that we have an opportunity to continue to grow over time," says Vicens. "We can really develop the gas and power markets, and the energy market as a whole in the entire region." ☺



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