

## CASE STUDY

# A Company Operating in the Agribusiness, Biofuels, and Renewable Energy Generation Sectors Consolidates IT and OT Network Infrastructure with Fortinet

Present in five states in Northern Brazil, the Brasil BioFuels Group (BBF), a Brazilian company founded in 2008, operates in the agribusiness sector, from sustainable oil palm cultivation and trading to the production of biofuels and renewable energy generation.

BBF has developed a verticalized and integrated business model, promoting the region's socioeconomic development, environmental preservation of the Amazon Forest, and the generation of more than 6,000 direct and 18,000 indirect jobs. The company has 38 thermoelectric power plants in its portfolio, 25 of which are in operation and currently serve more than 140,000 customers in the country's northern region. In addition, 13 plants are in the implementation phase.

BBF's thermoelectric plants serve locations in the country's Isolated Energy Systems—regions that are distant and have no connection with the National Interconnected System (SIN). BBF is the only company that operates with B100 biodiesel as a substitute for fossil diesel on a commercial scale in Isolated Systems.

Many of BBF's operations are in the middle of the forest, in isolated communities, and remote regions. Some locations can only be reached by air or on rivers surrounded by Amazonian fauna and flora. In this region, periods of heavy rain, lightning, and climate change are standard and considerably impact operations. Due to the environmental conditions and the remote location of the units, BBF has always had the challenge of ensuring connectivity for its operations and controlling and managing its network infrastructure.

Within its facilities, BBF also faced challenges in providing a robust and secure infrastructure for its users. Employees needed access to stable local connections and Wi-Fi. High latency also affected workers' performance and quality of life.

In addition, the company needed the solutions to apply security policies to multiple computers simultaneously, making troubleshooting a long and tiring task. The team also needed more agility to update and manage the network infrastructure.

To address these challenges, BBF worked with Fortinet's local partner Interatell to implement Fortinet's consolidated network management and security platform for 34 locations. "Given the complexity of our business, we have to choose robust solutions that allow us to quickly resolve day-to-day operations, especially on issues involving technology and communications. Fortinet offers us greater stability, security in our network infrastructure, and improvement in the quality and speed of processes," says Milton Steagall, CEO of Brasil BioFuels.



*"With Fortinet, our reach in security, access control, orchestration, standardization, network management, and visibility has enabled us to take another step forward to become a reference company in Industry 4.0 in the sectors where we operate."*

**Milton Steagall**  
CEO  
Brasil BioFuels

## Details

**Customer:** Brasil BioFuels (BBF)

**Industry:** Manufacturing

**Location:** Brazil

## Business Impact

- Centralized network infrastructure and unified administration with a single management platform
- Comprehensive, real-time visibility into the communication network of 34 operational sites

## Unified Security and Management of IT and OT Networks

In 2020, BBF began deploying FortiGate Next-Generation Firewall (NGFW) in Moju and Acará, cities in Pará, where the company has the most significant oil palm cultivation areas and two of its palm oil production plants. The goal was to achieve a unified, secure network infrastructure.

By segmenting the network and providing essential security functionalities such as content filtering and intrusion prevention system (IPS), FortiGate protects all data and users and ensures that 100% of the information collected at the thermal power plants is sent to the regulator. This includes telemetry data that measures the amount of energy generated by the plant. The secure data filtering of the operational technology (OT) environment also brought great stability, reducing the data packet loss rate due to non-tracking information from 27% to only 1.6%.

With Fortinet, BBF also solved the issue of segregating the IT network (corporate) and the OT network (operation) of the power generation and palm oil production industry. "We now have isolated servers and secure environments, with a corporate network separate from the operations network. The OT equipment cannot be accessed over the internet unless we enable this function," says Steagall.

Today, the power plant's entire OT environment is managed with Fortinet solutions. It is a critical operation that needs to be operational 24×7×365, especially since there is no other power source at these locations. If the process of a BBF plant stops, the entire municipality does not receive power.

The company also relied on FortiSwitch secure Ethernet switches to increase network connections while maintaining FortiGate security policies. This integration was possible through the Fortinet Security Fabric Platform, which intelligently connects all solutions. FortiAP access points were also deployed to provide stability for users connected to Wi-Fi networks while integrating all connectivity under one robust and secure platform.

Wi-Fi at all administrative and operational areas is provided via Fortinet. With these solutions, the company offers 100% network availability, an advance compared to when connectivity problems were frequent and constantly impacted the operation and business.

## Visibility and Resource Savings

The company also sought a solution to consolidate connectivity and network infrastructure management across its sites. BBF decided to use FortiManager as the orchestrator of all Fortinet solutions. "We needed to have complete infrastructure management. Fortinet allows us to have a unified environment that meets the needs of our operation. With FortiManager, all the firewalls in the IT and OT networks are managed and controlled to the same standard," says Steagall.

BBF also added FortiAnalyzer log management to its network infrastructure, a solution for analysis and reporting to prevent external attacks. By integrating this solution into the Fortinet Security Fabric platform, BBF now has detailed reports that help it uncover potential threats and make centralized, real-time decisions and manage all IT and OT data.

By having complete network visibility from a single point, the company has reduced the time it takes to identify issues by 90%, bringing together all network and security visibility into a single technology dashboard. With previous systems, IT staff did not know who was connected or what was being done on the network, which constantly put critical information and applications at risk.

## Business Impact (cont.)

- Network stability and increased productivity in hard-to-reach places
- Optimized security through advanced protection solutions

## Solutions

- FortiGate Next-Generation Firewall
- FortiSwitch
- FortiAP
- FortiManager
- FortiAnalyzer
- FortiClient

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With FortiManager, the BBF team can still see specific details like network status, who is connecting, or even the connection level of a device in real time. “The most important consideration that influenced our choice of Fortinet was that we could oversee the network infrastructure centrally,” says Steagall.

BBF has also ensured employees, through FortiClient, secure access to remote locations in both corporate and industrial environments. In addition, with the implementation of site-to-site VPN, the company could remotely monitor, in real time, the entire VPN network, including the most remote power generation plants.

Centralized network management has increased the BBF's team efficiency in troubleshooting. In the past, the IT team had to travel several hours to resolve problems at dispersed locations. Now, if a situation occurs, the IT team can quickly access any point in the network and immediately make the necessary adjustments, saving time and travel costs and increasing the team's productivity and well-being.

In addition, BBF can now implement access policies, software updates, and security rules for multiple devices from a single location. “With Fortinet, our reach in security, access control, orchestration, standardization, network management, and visibility has allowed us to take another step forward to become an Industry 4.0 reference company in the industries where we operate,” Steagall concludes.

BBF has expanded the scope of Fortinet solutions to all its facilities, including its headquarters office in São Paulo. Its next challenge is to standardize all environments with Fortinet, which will involve integrating the automation network with the IT network. Going forward, BBF will rely on more security capabilities, robustness, and consolidation from Fortinet to strengthen itself as an Industry 4.0 company.

BBF's investment plan in technology and network infrastructure also foresees the completion of the technological implementation in the new soybean extruder, inaugurated late last year by the company in Paragominas, Pará state. BBF also looks to organize the processes for applying the technology park in the unprecedented biorefinery under construction in the Manaus Free Trade Zone, scheduled to open in 2025. In addition, the company is also considering the technology infrastructure for the 13 thermoelectric plants under implementation in the North Region of Brazil.



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