

BLOOM ENERGY AND JABIL GENERATE A POWERFUL PARTNER/CUSTOMER RELATIONSHIP



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Susan Brennan,
EVP and COO, Bloom Energy

Case Study

Bloomenergy®

Company: Bloom Energy

Industry: Energy

Country: United States

Employees: 1200

Websites: www.bloomenergy.com

CHALLENGES

- Disrupting energy industry required a new solution built from the ground up
- Like-minded manufacturing partner needed to carry out game-changing mission
- Manufacturing flexibility and openness demanded to address evolving product and go-to-market obstacles

SOLUTION

- Jabil provided full suite of product design, supply chain and manufacturing services
- Bloom Energy Server deployment at Jabil Blue Sky offered valuable proof point
- Jabil track record for innovation helped drive NPI and volume production processes

BENEFITS

- Clean energy at Blue Sky showcases massive efficiencies and cost savings
- Jabil's advanced manufacturing solutions spur Bloom's global leadership
- Strong cultural alignment has been essential to helping Bloom bring its technology vision to life

“We’re really an extension of Bloom’s team. Jabil comes to the table each day, eager to engineer and innovate. We’re proud to be in this partnership because we’re disrupting the energy industry while transforming how power is delivered.”

Joanne Moretti
SVP & CMO, Jabil

Innovative Provider of Breakthrough Energy Technology Creates New Industry Segment

Bloom Energy is changing the way the world generates and consumes energy. With a unique distributed power generation system featuring fuel cell energy technology that has origins in NASA’s Mars program, the company is disrupting the energy industry by producing the next generation of clean, reliable and cost-effective power.

Bloom’s innovative Energy Servers are among the most efficient energy generators on earth, delivering dramatic savings in electricity costs while substantially lowering greenhouse gas emissions. In addition, the Bloom solution makes possible always-on, on-site power, reducing its customers’ reliance on traditional transmission lines.

According to Susan Brennan, EVP and COO for Bloom Energy, the company’s distributed solution, which utilizes a solid oxide fuel cell, means power can be placed anywhere it’s needed. “Bloom’s distributed model allows for the personalization of power, similar to how telephones went from being attached to the wall to being portable,” she explains. “We are best positioned to meet evolving power needs while also working with the current grid and new energy sources, including wind and solar.”

Daring to Disrupt: Transforming the Energy Industry

Bloom’s disruptive thinking about power generation and delivery is driven by an overarching mission to revolutionize an entire industry. “Our solution has many unique characteristics that enable us to provide energy in a much different way than it’s been done in the past,” says Brennan. “Not only can we lower energy costs, Bloom’s technology offers heightened levels of resiliency from cyberattacks and other types of disasters that can impact traditional energy providers.”

Bloom already counts 25 of the Fortune 100 among its customers, including tech titans, data center hosting companies, top banks, healthcare leaders and retail giants. “We work very closely with our customers to determine creative, meaningful solutions to a diverse set of energy problems,” Brennan adds. “It’s critical to monitor systems 24/7 and provide customers with data to help reduce energy costs while boosting efficiency.”

Moving forward with its disruptive solution produced bountiful opportunities for Bloom, along with some distinct challenges, as the ground-up nature of the solution meant the company was forced to build everything from the ground up. Initially, the team presented the founder’s concepts and initial ideas to potential partners in the manufacturing space. “There is no book here,” Brennan explains. “We aren’t able to buy a product, tear it down and analyze how somebody else has done it. The most important attribute a supplier could bring to Bloom was new ideas.”

In its search for like-minded partners, Bloom looked for manufacturers with a shared vision for innovation. “We are a 21st century manufacturing team in the sense that we know how to innovate, change and move quickly,” says Brennan. “Our partners need to keep pace with us over the long haul, which means being willing to take some risks. On any given day, we might know about 50% of what is expected, but the other 50% is excitement, innovation and constant change.”



Investing in Innovation: Jabil Becomes Both Customer and Partner

Bloom sought a manufacturing partner with cutting-edge technologies, proven processes and an underlying commitment to research and development. “The kind of company that wants to partner with us—and that we want to partner with—really needs to be a forward-thinking company. Not all partners are comfortable being in that place. Jabil is very comfortable being in a place where there’s a new industry being created.”

In Jabil, Bloom also found a partner with game-changing solutions and technologies capable of altering the manufacturing landscape. For example, Jabil’s capital equipment team provided Bloom with a wealth of complex metalworking, machining and welding capabilities for parts and subsystems.

“Jabil works hard to understand our unique needs and then recommends progressive manufacturing capabilities tailored to our business,” Brennan explains.

“Jabil’s supply chain and logistics network, specialized engineering capabilities, quality control and digital decision tools play an important role in Bloom’s growth as a global energy leader.”

Lawrence Zhang
Business Unit Manager
Jabil Silver Creek

“Jabil constantly brings ideas to us that can be transferred into tactical, practical solutions for our business.”

Additionally, Jabil embodies all the important supplier attributes in terms of being on-time, reliable and fastidious about product quality. “Jabil has clearly mastered the basics,” notes Brennan. “Add innovative to a list that includes professional, consistent and reliable and to me -- that’s the perfect partner.”

In particular, the Bloom team was impressed with the advanced manufacturing technologies on display at Jabil’s Blue Sky Innovation Center in San Jose, Calif. In addition to an ever-increasing cadre of digital solutions, encompassing additive manufacturing, automation and an IoT lab, Blue Sky features Jabil’s Intelligent Digital Supply Chain (IDSC) in a NASA-like control room to demonstrate how customers and Jabil plants connect, collect and validate vast amounts of supply chain data to drive better manufacturing outcomes.

“Jabil Blue Sky represents a manifestation of our digital transformation as a company,” explains Joanne Moretti, SVP & CMO, Jabil. “Not only do we showcase the same digital technologies and capabilities we use to help customers like Bloom, we’re demonstrating how the best new products and solutions work.”

Bloom at Blue Sky: Compelling Proof Point

In August 2016, Jabil installed a 250kW Bloom Energy Server at Blue Sky, which powers the entire center. The system produces clean energy around the clock, culminating in more than 2 million kWh annually. Compared to old-school power, Bloom already has helped Jabil reduce 300,000 pounds of CO₂ from the atmosphere.

“Acting responsibly is really part of our DNA,” Moretti continues. “The Bloom Energy Server enables us to help the environment and lower operating costs at Blue Sky. There’s also no need for additional water, which is important to us. Sustainability, cost savings and water efficiency all come together in the Bloom Energy Server.” Over the life of the system, Jabil can expect its Bloom Energy Server to remove 4.5 million pounds of CO₂ from the grid while saving Blue Sky approximately 32% on its electricity bills over 15 years. “The state of California provided an incentive, which enabled us to install our Bloom Energy Server without having to pay anything out of pocket,” Moretti adds. “We pay for the electricity we consume at a much lower rate than the traditional electricity model. Jabil is proud to partner with Bloom and demonstrate the sustainability and economic benefits of their technology breakthrough through its use in our own leading edge innovation center.”

The Bloom Energy Server deployment at Blue Sky offers compelling validation of the technology's many value propositions. Moreover, Bloom's presence at Blue Sky reinforces Jabil's ability to demonstrate cutting-edge technologies alongside advanced manufacturing capabilities, many of which are being used to help Bloom scale manufacturing. According to Lawrence Zhang, business unit manager at Jabil's Silver Creek mechanical integration facility, the ability to help refine part designs for improved manufacturability has been crucial to Bloom's commercialization progress.

"Jabil's supply chain and logistics network, specialized engineering capabilities, quality control and digital decision tools play an important role in Bloom's growth as a global energy leader," says Zhang. "The Bloom team is openminded and respects our engineering expertise; we're encouraged to offer as much design for manufacturing insight as possible before any part goes into volume production."

This collaborative effort led to faster resolutions of many engineering challenges, resulting in an expedited transition from Bloom's New Product Introduction (NPI) phase to volume production. Bloom's internal engineering, product quality and supply chain teams also rely on strong partnerships with Jabil counterparts to drive growth. "I haven't met anyone in our organization who

hasn't had a positive experience with Jabil," says Brennan. "The installation at Blue Sky is exciting for both companies. Jabil is benefiting from having more resilient, clean and economical power while Bloom has the opportunity to show a real-world example of our technology in action."

Scaling Production: Reducing Cost and Risk

A close cultural alignment between Bloom and Jabil also is proving instrumental in creating momentum for the manufacturing partnership. In addition to sharing similar philosophies on the importance of environmental sustainability, both companies are focused on accelerating time-to-market while continuously reducing cost and risk. "I joined Bloom's LEAN management training, which provided insight into continuous improvement and cost containment thoughts and practices," adds Zhang. "This helped us make efficiency improvements at Jabil's Jiading plant in Shanghai, which devotes 90% of its operational resources to supporting Bloom."

As a partner, Jabil offers much-appreciated flexibility as its global presence assures Bloom of assistance no matter where in the world its next opportunity may emerge. "We're a constantly evolving technology," says Brennan. "Most manufacturing teams are not known for being flexible. The best part about working with Jabil is the openness and willingness to be on the journey with us."

For example, Jabil constantly comes up with useful product insights and innovative manufacturing processes. "We're really an extension of Bloom's team," says Moretti. "Jabil comes to the table each day, eager to engineer and innovate. We're proud to be in this partnership because we're disrupting the energy industry while transforming and improving how power is delivered."

Together, Bloom and Jabil also are changing traditional manufacturing models by deploying a hybrid model that leverages the strengths of both organizations to scale production. The partners blend their respective experience from diverse industries as well as a deep bench of engineering expertise to address both technical and specific go-to-market challenges.

"We're very purposeful in how we enter new markets as it can impact how we manufacture, assemble, install and service our solution," concludes Brennan. "Jabil is very open to exploring solutions for problems that don't even exist today. They focus on the art of the possible with a watchful eye on the future."



About Jabil

Jabil is a digital product solutions company providing comprehensive electronics design, production and product management services to global electronics and technology companies. Offering complete product supply chain management from facilities in 27 countries, Jabil provides comprehensive, custom solutions to customers in a broad range of industries. Nypro, a Jabil company, specializes in medical devices, with a global footprint of ISO 13485 and FDA registered facilities, manufacturing many of the most recognized medical brands for major healthcare and wellness companies. Jabil common stock is traded on the NYSE under the symbol, "JBL". Further information is available on Jabil's website: jabil.com.