Bloomenergy®

Transforming Energy for the Digital Age

2023 Sustainability Report

Message from Leadership

Dear Stakeholders,

I am pleased to present Bloom Energy's 2023 Sustainability Report. We come to you this year with renewed optimism that our collective ambition and efforts to transition the energy sector will enable us to overcome the challenges that lay before us. The energy sector has a monumental task before it, to rapidly decarbonize while also drastically scaling up electricity production. Distributed technologies, including our innovative solutions, will propel the next stage of energy sector growth and Bloom is ready to meet the challenge. Last year, we continued to build our world class company, meeting the significant commercial milestone of operating profitability, while continuing to advance our technology and grow our installed base.

The Challenge Before Us

This past year has shown us that aligning the energy sector with a 1.5 degree warming trajectory will not be easy. Despite our collective desire, the three core elements of the energy system are all trending in the wrong direction. Reliability is down, costs are up, and sustainability impacts are lagging. In both the U.S. and globally, we've seen policy mechanisms emerge that will drive substantial electric load growth (e.g., electric vehicle incentives, building electrification measures, and hydrogen incentives). As an example, the provisions in the Inflation Reduction Act (IRA) are expected to increase U.S. electricity demand by as much as 30% by 2030.

In certain sectors, the increase in demand is dramatic, with electric vehicle driven demand poised to jump nearly 375% by 2030. Alongside the growth in demand, we are seeing substantial increases in the delays associated with interconnecting new energy projects to the grid in order to serve new demand. In the U.S. it now takes an average of five years from the interconnection request to commercial operation of a new energy project.[1]

In order to alleviate the interconnection bottleneck and more quickly bring a sufficient amount of new clean generation resources online, we will need to add 75,000 miles of high voltage transmission lines to the system by 2035, enough to run from New York to Los Angeles and back 15 times.[2]

Further compounding the problem is the fact that we are driving existing baseload options off of the system while we struggle to integrate replacements. In some cases, we have seen delayed fossil retirements, including coal plants, due to a lack of alternatives. In California, the lack of clean baseload options leads to the import of high carbon power from out of state, annual emergency declarations and requests for businesses to reduce load and export power from their onsite diesel generators. To serve the state's growing energy demand with solar and wind alone, the required amount of storage, transmission, and capacity additions are projected to drive wholesale electricity rates up 65%.[3] In Germany, power costs are now four times what they were from 2018–2021, and significant drops in manufacturing productivity have resulted, challenging the entire European economy.[4]

The net impact of all of this is delay in near-term emission reductions—an outcome we can least afford. The principle of the time value of carbon directs us to drive greenhouse gas reductions as quickly as possible in order to avoid risks associated with tipping points that might throw the climate balance beyond mitigation. We must prioritize immediate emission reductions from the power sector while we work to address the challenges of our centralized electric system.
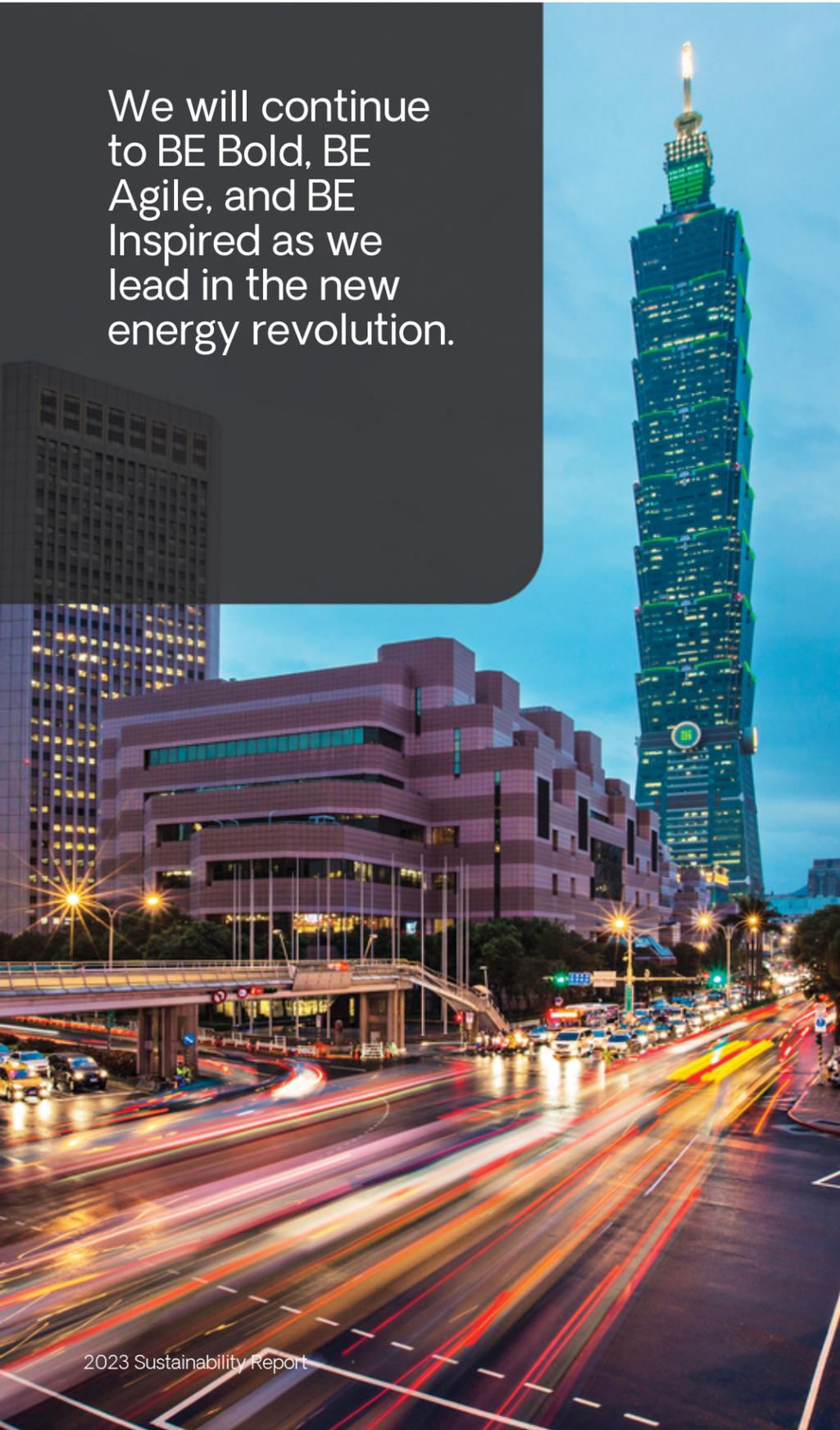
[1] https://emp.lbl.gov/news/grid-connection-requests-grow-40-2022-clean

[2] https://www.utilitydive.com/news/infrastructure-inflation-reduction-act-department-energy-funding/699705/

[3] https://www.edf.org/sites/default/files/documents/SB100%20clean%20firm%20power%20report%20plus%20SI.pdf

[4] https://www.reuters.com/business/energy/germany-needs-more-baseload-power-vital-industrial-reboot-maguire-2023-01-31/

We will continue to BE Bold, BE Agile, and BE Inspired as we lead in the new energy revolution.

A Distributed Future

The good news is there are solutions to this potent mix of challenges, and distributed energy solutions, like Bloom's Energy Servers, are part of the answer. In a world challenged by cost and complexity, Bloom's efficient, flexible, and resilient solutions available today offer some of the most pragmatic near-term generation options to reduce cost, increase resilience, reduce greenhouse gas emissions, improve air quality, and better conserve water and land. Policymakers have long discussed the promise of distributed technologies, but their time is here, as are the innovative operating models they enable. It's time to embrace systemic transformation across the energy landscape, and Bloom is ready and able to contribute.

Bloom Is Ready

These are very exciting times at Bloom. We just completed one of the most important years in our history, from which I am eager to share the highlights found within this report. And I expect 2024 will be filled with even more amazing accomplishments based on the profound progress and momentum we have been generating. Our core technology is proven, and we're building on our success. Last year saw the demonstration of the world's largest and most efficient solid oxide electrolyzer at our NASA Ames research center. We complemented that effort with a new, quickly deployable Energy Server offering, Series 10, and advanced our combined heat and power capability, which expands the carbon mitigation we provide to commercial and industrial processes alike. We expanded to new international markets in Europe and Asia and continue to advance new project models and find new applications for our technology.

We've evolved as an organization as well. We've added new leadership and increased diversity on our Board, and continue to invest in our talent. We celebrated 10 years of manufacturing growth and excellence at our assembly facility in Delaware, which started with one employee at a former automobile manufacturing facility. Today we have nearly 800 employees in Delaware that have joined the clean energy economy and have assembled and shipped more than 20,000 Energy Servers. This facility and our expanded Fremont, California, facility form the basis of our commitment to a domestic manufacturing future and a just transition for employees aligning their future with the promise of clean energy. We will continue to BE Bold, BE Agile, and BE Inspired as we continue our work, and lead in the new energy revolution.

Sincerely,

KR Sridhar, Ph.D.
Founder, Chairman, and Chief Executive Officer

About this Report

We are proud to present our fourth annual sustainability report, which covers the progress we have made in advancing our environmental, social, and governance (ESG) initiatives during the 2023 calendar year. Where appropriate, we also provide updates on initiatives underway in 2024.

This report uses accepted ESG frameworks and standards, including alignment with Sustainability Accounting Standards Board (SASB) standards and the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. Additionally, this report is informed by certain Global Reporting Initiative (GRI) standards and aligns to the United Nations Sustainable Development Goals (UN SDGs).

Data provided in this report covers our owned and operated facilities, including our manufacturing facility established as a joint venture with SK ecoplant, as well as our globally deployed fleet of fuel cell and electrolyzer products. We have worked to ensure that the data embedded throughout the report and provided in the appendices is as accurate as possible and have noted any numbers that have been externally verified.

For specific information about this report or our sustainability program overall, please contact us at sustainability@bloomenergy.com. All information included in this report is for the 12-month period ending December 31, 2023, unless otherwise stated.

Forward-looking Statements and Other Important Legal Information

This document and the materials or websites cross-referenced contain statements that are aspirational or reflective of our views about our future performance that constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are generally identified through the inclusion of words such as "aim," "anticipate," "aspire," "believe," "commit," "endeavor," "estimate," "expect," "goal," "intend," "may," "plan," "seek," "strive," "target," "projection," "will," and "work," or similar statements or variations of such terms and other similar expressions. The forward-looking statements in this document and the materials or websites cross-referenced concern the company's goals, progress, or expectations with respect to corporate responsibility, sustainability, employees, environmental matters, policy, and business risks and opportunities.

Forward-looking statements inherently involve risks and uncertainties that could cause actual results to differ materially from those predicted in such statements. These statements are based on numerous assumptions that we believe are reasonable but are open to a wide range of uncertainties and business risks. In addition, these statements may be based on standards for measuring progress that are still developing, controls and processes that continue to evolve, and assumptions that are subject to change in the future. Consequently, actual results may vary materially from what is contained in a forward-looking statement. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to our business in general, see our Annual Report on Form 10-K filed with the Securities and Exchange Commission (SEC) on February 22, 2024, and our subsequent periodic reports filed with the SEC.

Forward-looking statements are aspirational and not guarantees or promises that goals or targets will be met. The company undertakes no obligation to update any forward-looking or other statements, whether as a result of new information, future events, or otherwise, and notwithstanding any historical practice of doing so. The company may determine to adjust any goals and targets or establish new ones to reflect changes in our business. The information included in, and any issues identified as material for purposes of, this document may not be considered material for SEC reporting purposes. In the context of this report, the term "material" is distinct from, and should not be confused with, such term as defined for SEC reporting purposes. Website references and hyperlinks throughout this document are provided for convenience only, and the content on the referenced third-party websites is not incorporated by reference into this report, nor does it constitute a part of this report. The company assumes no liability for the content contained on the referenced third-party references.

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2023 ESG Highlights

Climate
992,481 tonnes
of avoided carbon emissions from our fuel cell projects

120,000 tonnes
of avoided carbon emissions from our certified gas program

Waste
3,559 tonnes
of material recycled through our repair and overhaul operations

99%
recycling or reuse of our product materials at end of life

Employees
66%
of our U.S. employees are ethnically diverse

10 years
of manufacturing excellence in Delaware celebrated

Governance
Physical Climate Risks
quantified through our first forward scenario exercise and integrated into our enterprise risk management program

Product
90%
combined efficiency available from our new CHP solution

-790.41
gCO$_2$e/MJ biogas project carbon intensity score validated, the lowest ever recorded by California regulators

Air Quality
$18.6 – $41.9 million
savings to local health-care systems throughout the U.S. by emissions avoided from our non-combustion technology

Water
39 billion gallons
of water withdrawal avoided from central station power plants nationally

Community
$337,000
raised through expansion of our Bloom Energy Stars and Strides Community Run/Walk

Supply Chain
96%
of suppliers responded to our conflict minerals supplier survey, up from 92% in 2022

4MW
Bloom electrolyzer demonstration deployed, the world's largest solid oxide installation

Highlights are mapped against the UN SDGs

About Us

Bloom Energy has taken technology developed for Mars and given it a meaningful purpose on Earth. Our roots lie in work performed for NASA by KR Sridhar, PhD, our founder, chairman, and chief executive officer, to convert Martian atmospheric carbon dioxide into oxygen for life support and propulsion. His team soon realized that this electrolyzer technology could have an even greater impact here on Earth. From this idea came both our revolutionary Bloom Energy Server® and Bloom Electrolyzer™.
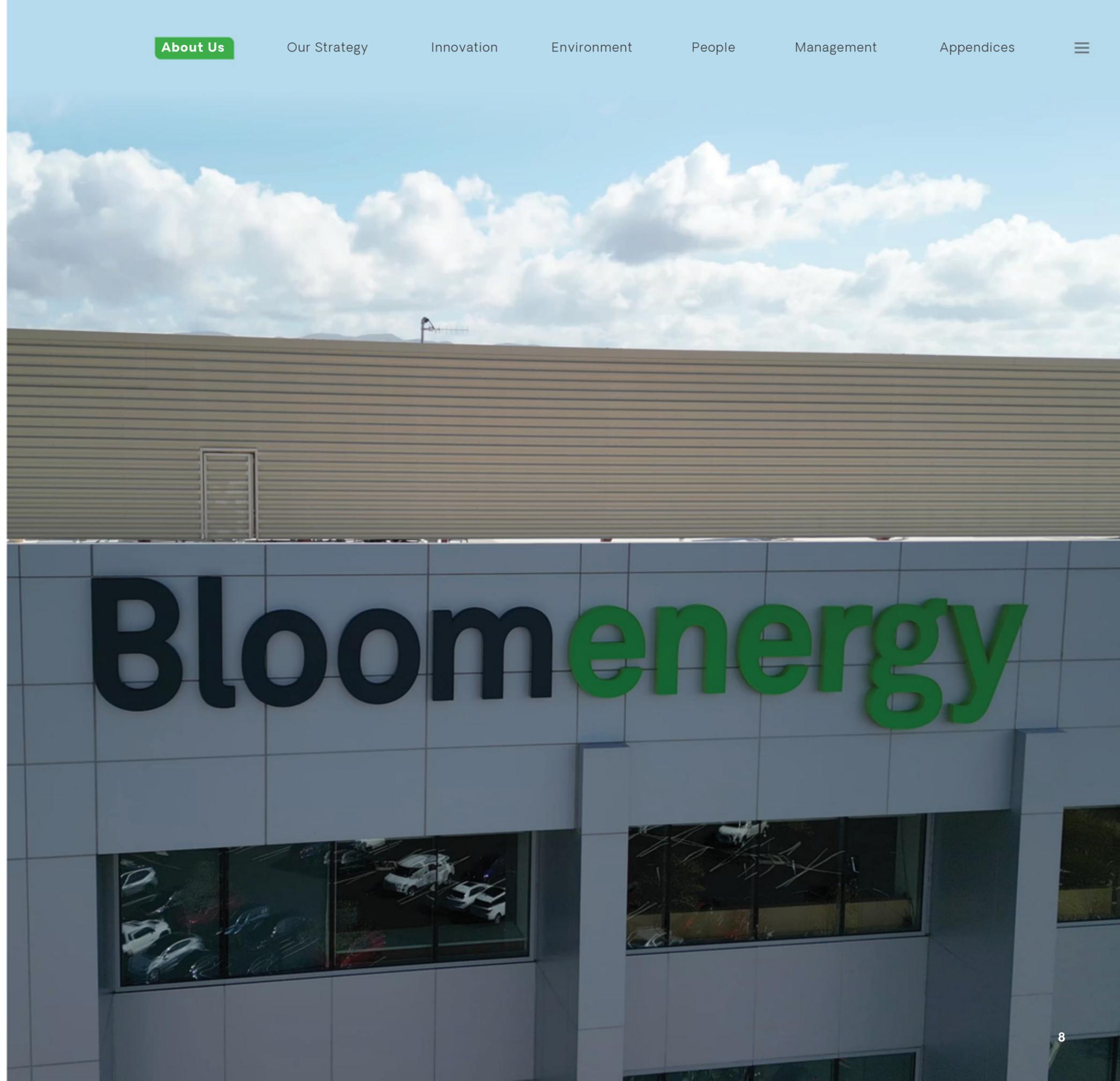
Bloom Energy at a Glance

$1.33B
2023 Revenue

32B
kWh Produced without Combustion

1.2+
GW Deployed

170+
Customers

990+
Installations

170+
Microgrids

2,377
Employees

United Kingdom

Spain   France

Newark, DE   Germany

Mumbai, India   Bangalore, India

San Jose, CA   Italy   South Korea

Malaysia   Taiwan

Japan

Australia

■ Headquarters   ● Office Location   ● Manufacturing/R&D   ● Business Development
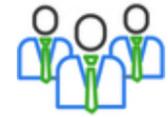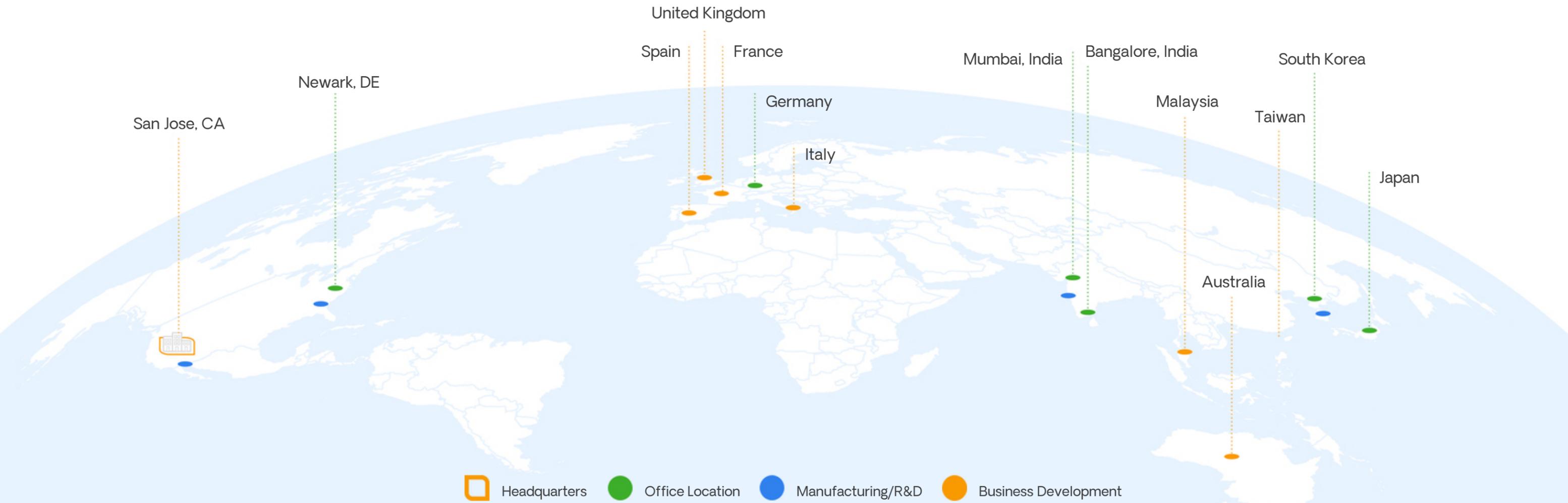
Mission and Values

Our Mission

To make clean, reliable energy affordable for everyone in the world.

Our Values

At Bloom Energy, our values define who we are and shape our corporate culture. Changing the future of energy is no small task, but our diverse group of thinkers, solvers, and dreamers are up to the challenge. Driven by a shared passion for our planet, our employees help design, produce, and distribute unique energy solutions that transform how we power our world.

To achieve our mission of energy abundance without compromises, we strive to:

BE Bold
We challenge the status quo using a considered, data-driven approach to exceed our customers' needs and solve their most complex problems.

BE Inspired
Our passion for our planet pushes us to deliver world-leading energy solutions. Our compassion and desire to do the right thing establishes trust and delivers excellence across the products we build and the customers we serve.

BE Agile
We learn quickly and embrace entrepreneurship to adapt nascent ideas into best-in-class products that enable scalable, low-cost energy transformation.

These shared values are what power our team to create a better, more sustainable future.

Our Value Proposition

An unwavering passion for creating a clean, healthy, and energy abundant world.

Bloom Energy empowers businesses and communities to responsibly take charge of their energy.

Empowering the Future

Our future-proof energy platform unlocks multiple pathways to zero-carbon.

RESILIENT
Uninterrupted power without compromise.

PREDICTABLE
Fixed power price and high power quality.

SUSTAINABLE
Flexible high efficiency non-combustion solutions.

DEPLOYABLE
Installed in a matter of months to reduce customers' time to power.

POWER GENERATION
Our power solutions, including our AlwaysON microgrids, carbon capture enabled systems, and those designed to run on biogas or hydrogen, drive deep decarbonization potential.

HYDROGEN PRODUCTION
We're leveraging our proven solid oxide platform to generate carbon-free hydrogen from low carbon and renewable electricity sources.

Solid Oxide Platform

Our Energy Server is an advanced distributed energy generation platform that creates cost-effective, clean, reliable, and resilient electricity from a variety of fuels, including natural gas, biogas, and hydrogen at high efficiency and without combustion. Bloom Energy Servers deliver non-combustion energy solutions for businesses seeking reliability, predictable pricing, and highly efficient power for their operations. Our fuel-flexible offering results in reduced emissions and improved air quality and requires minimal water usage.

The Bloom Electrolyzer supplants the conventional way of making hydrogen. In place of a dirty process that creates carbon emissions, our electrolyzer efficiently uses electricity to split water into hydrogen and oxygen. It can be paired with zero-carbon power sources, such as that produced by solar and wind power, as well as with the steam generated by nuclear power operations.

Our Solutions

Our modular and configurable solid oxide platform is capable of providing a variety of sustainable power solutions: from zero-carbon electricity to clean hydrogen. We continue to evolve and expand our offerings as we pursue our mission to make clean, reliable energy affordable for all.

Electrolyzers

Using the same solid oxide platform as our Energy Server, the Bloom Electrolyzer is designed to produce scalable and cost-effective hydrogen solutions more efficiently than proton exchange membrane and alkaline solutions. Our modular design makes the Bloom Electrolyzer ideal for use with both nuclear and renewable power feedstocks and can be sited flexibly to efficiently serve a variety of industrial, transport, and power sector offtakers. Because it operates at high temperatures, the Bloom Electrolyzer is designed to require less energy to break up water molecules and produces hydrogen more cost effectively.

Waste to Energy

Our Energy Servers provide an electrochemical pathway to convert methane in natural gas or biogas directly into electricity without combustion. We have pioneered the cleanup of biogas to use as fuel, without the need for its processing into pipeline-quality biomethane. On-site biogas use avoids the release, combustion, or flaring of harmful methane. When used as a fuel it has a similar emission profile as natural gas but a lower, and potentially even negative, lifecycle carbon intensity.

Hydrogen Fuel Cells

As production of hydrogen becomes ubiquitous, Bloom's Energy Server is hydrogen ready. The Energy Server can operate on a combination of blended hydrogen and natural gas or 100% hydrogen. Bloom's Energy Server products present a highly reliable zero-carbon or renewable power generation option for customers.

Microgrids

Bloom's primary power and AlwaysON microgrid offerings have grown to become an important solution to an increasingly unreliable centralized power grid. Our microgrids do not depend on transmission lines or the larger distribution system, eliminating the risk of being cut off from power due to natural disasters, and have proven resilient during hurricanes, earthquakes, fires, and more. These microgrids can be installed alongside batteries and solar panels to increase flexibility and reliability. Globally, more than 170 Bloom microgrids maintain an uninterruptible power supply for hospitals, supermarkets, data centers, high-tech manufacturers, university campuses, and more.

Carbon Capture Utilization & Storage (CCUS)

Our non-combustion process already generates a relatively pure stream of CO_2 devoid of nitrogen oxides, sulfur oxides, and other impurities that are difficult or expensive to separate. With the introduction of already existing exhaust processing technologies, we can isolate a highly purified stream of CO_2 that can be used or sequestered more economically than traditional forms of power generation. CCUS partially or fully mitigates emissions from natural gas depending on sequestration or utilization dynamics. If paired with biogas in bioenergy to carbon capture (BECCS) projects, carbon removals are achieved.

Combined Heat and Power

The Bloom Energy Server can be enhanced with mechanical exhaust adapters to allow for easy integration to combined heat and power (CHP) systems. The high temperature cathode exhaust from the Energy Server can be channeled, allowing the resulting exhaust heat to be available for further use. Once captured, this high temperature heat can be utilized in various applications and to further increase the overall combined thermal and electrical efficiency of the system.

Alignment with a Net-Zero Future

Our diverse solution set directly aligns with the innovation needed from the energy sector to align with a net-zero future. According to analysis by the International Energy Agency, Bloom's technology roadmap aligns with 430 gigatonnes of mitigation potential.

ABATEMENT STRATEGY	BLOOM CONTRIBUTION	IRA/IIJA SUPPORT	BUSINESS IMPACT
HYDROGEN	The Bloom Electrolyzer enables various types of hydrogen production, and our high efficiency solid-oxide fuel cells can utilize hydrogen as a fuel feedstock, enabling two pathways for Bloom to contribute to the growth of the hydrogen economy.	• Up to $3/kg hydrogen production tax credit • $8 billion in grant funding for hydrogen hub development • Manufacturing tax credit	• Helps reduce the cost of green hydrogen production and accelerates growth of our electrolyzer business • Aids in the expansion of Bloom's hydrogen manufacturing line
BIOENERGY/ BIOGAS	Our solutions help mitigate methane release and increase the viability of on-site, renewable power production particularly for agricultural and municipal waste sources.	• Expanded investment tax credit for biogas projects	• Reduces costs of Bloom's waste-to-energy offerings
RENEWABLES (SOLAR & WIND)	Bloom's electrolyzer produces green hydrogen from solar and wind and can utilize otherwise curtailed energy from renewable projects, helping increase the capacity factor and economic viability of renewable projects.	• Increases and extends the investment tax credit • Provisions for offshore wind development	• Lowers the cost of green hydrogen generation by reducing costs of renewable power
ELECTRIFICATION OF END-USE SECTORS	Our distributed fuel cells are grid connected, helping with resilience of electrified buildings, and our systems produce DC power natively, ideal for serving fast charging EV systems for vehicles and port infrastructure. Additionally, Bloom is electrifying marine vessels, replacing some of the dirtiest fuels in use today.	• Tax credits for controllers, switchgear, and batteries • Incentives for electric vehicles	• Lowers costs for and encourages broader microgrid adoption • Drives demand for efficient on-site power solutions
FUEL SHIFTS (COAL + OIL TO GAS)	Our solid oxide platform makes highly efficient use of natural gas. As we deploy an increasing number of front-of-the-meter solutions and expand to regions focused on a move toward gas, we can help displace coal generation as a cleaner baseload option.	• $30 billion in targeted grants for states and electric utilities to accelerate the transition to clean electricity	• Accelerates market development potential for utility scale projects in new markets moving away from coal assets
TECHNOLOGY PERFORMANCE/ EFFICIENCY	Our technology operates at a higher efficiency than other power generation or hydrogen production technologies. We have sent a market signal to upstream gas producers to enhance their performance through our offtake of certified gas attributes.	• Hydrogen PTC tied to a lifecycle carbon intensity requirement • Dollars to support methane reduction process and deploy monitoring equipment	• Makes more efficient electrolyzer technologies more competitive • Improves the lifecycle carbon intensity of natural gas solutions to the benefit of our core business
CCUS	Our ability to efficiently separate relatively pure streams of CO_2 is rare in power generation. Our flexibility provides the potential for distributed carbon utilization as well as large-scale sequestration capability.	• Lower capture threshold for smaller projects and increases the size of the tax credit	• Makes CCUS projects economically more feasible and creates the potential for distributed projects

Bloom**energy**

Our Strategy

In 2023, we continued advancing our strategic agenda, deepening the company's focus on its material issues, developing our capacity internally, and advancing our commercial strategy in response to a rapidly evolving set of energy sector considerations.

Our business and sustainability strategy are inextricably linked. As an energy company that is a key partner to customers who are working towards their own net-zero and decarbonization journeys, it is essential that our products, employees, and supply chain partners continuously work to reduce negative impacts and improve outcomes for the customers and communities we touch.

We continuously evolve our ESG strategy by identifying key trends in the energy space, understanding internal and external risks across the spectrum of our activities, and advancing the programs and policies best suited to manage those risks. We monitor new developments across the voluntary and regulatory landscape to ensure that our company is responsive to existing and emerging requirements, policy development, disclosures, and programmatic action.
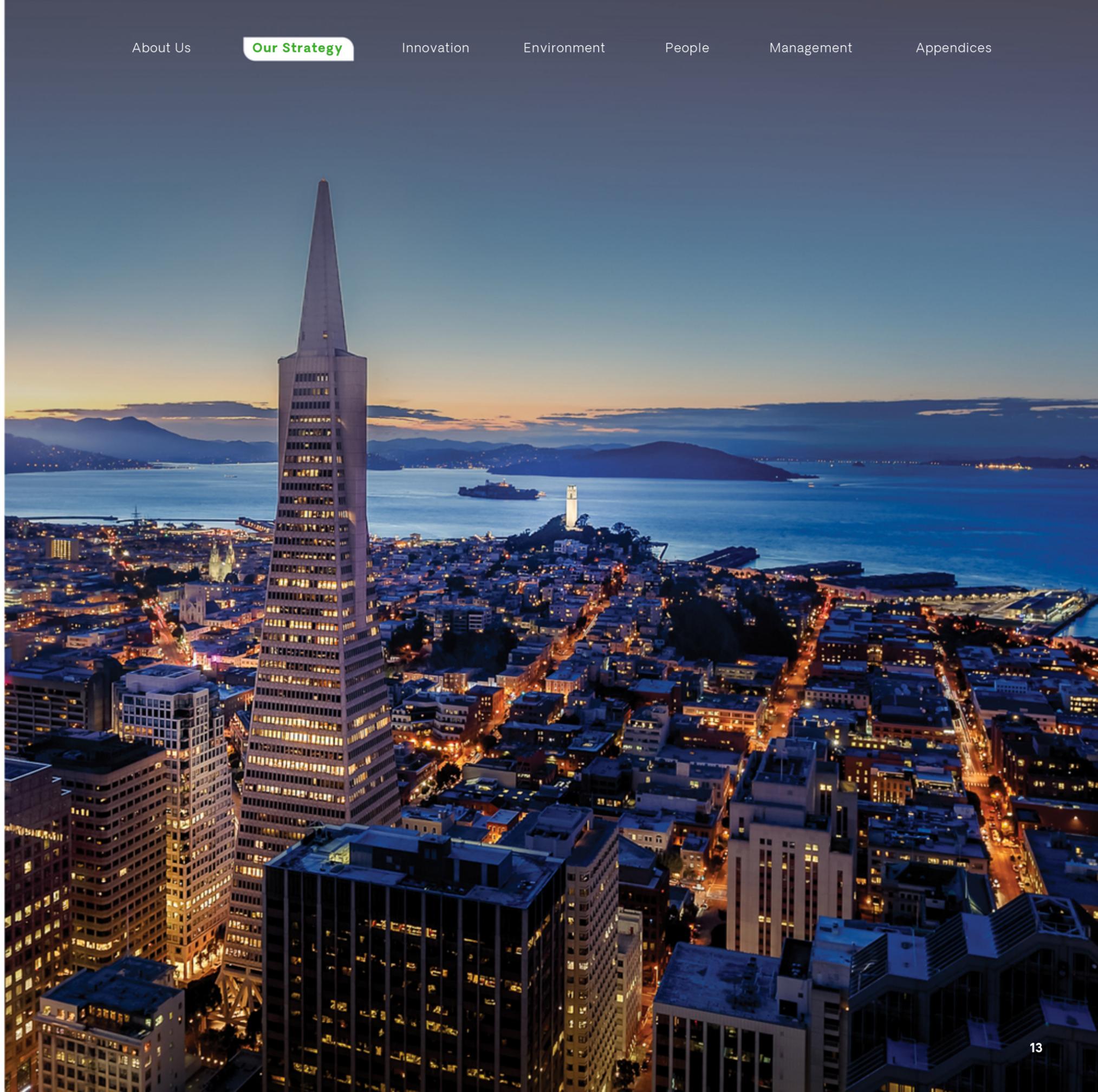
Materiality

In 2022, we conducted a revision of our materiality analysis in acknowledgment of the fact that the energy sector is rapidly evolving. We identified stakeholder groups that were most impactful to our business and strategy—Bloom leadership, customers, investors, policymakers, employees, and suppliers—and engaged internal representatives who could best represent the views of those stakeholders. This engagement occurred through interviews and survey-based questionnaires and aimed to help us understand the specific ESG topics that were most impactful and relevant to these audiences.

The newly added topics that ranked the highest included climate risk and resilience, technology and innovation, government relations and public policy, employee well-being, and human capital management.

TOPICS	COMPARED TO 2020 ANALYSIS
Environmental Topics	
1 Climate Action and Decarbonization	▲
2 Climate Risk and Resilience	
3 Emissions and Air Quality	–
4 Technology and Innovation	
5 Energy Management	
6 Product Circularity and Waste Management	▲
7 Sustainable Finance	▼
8 Water Stewardship	–
9 Environment Management System	
Social Topics	
1 Inclusion, Equity, and Diversity	▲
2 Employee Well-being	
3 Human Capital Management	
4 Community Impact	–
5 Responsible Supply Chain	–
6 Labor Relations	
Governance Topics	
1 Effective Corporate Governance	–
2 Government Relations and Public Policy	
3 Privacy and Data Security	
4 Enterprise Risk Management	

Materiality Methodology

### Materiality Matrix Development Process

1 **ESG Topics**
2020 Results & Peer Research Update Topics

2 **Stakeholder Identification**
Stakeholder Groups & Internal Representatives

3 **Stakeholder Engagement**
Stakeholder Survey & Leadership Survey

Materiality Matrix

- ● Environmental Topics
- ● Social Topics
- ● Governance Topics

Impact to Stakeholders (y-axis)
Impact to Bloom Energy (x-axis)
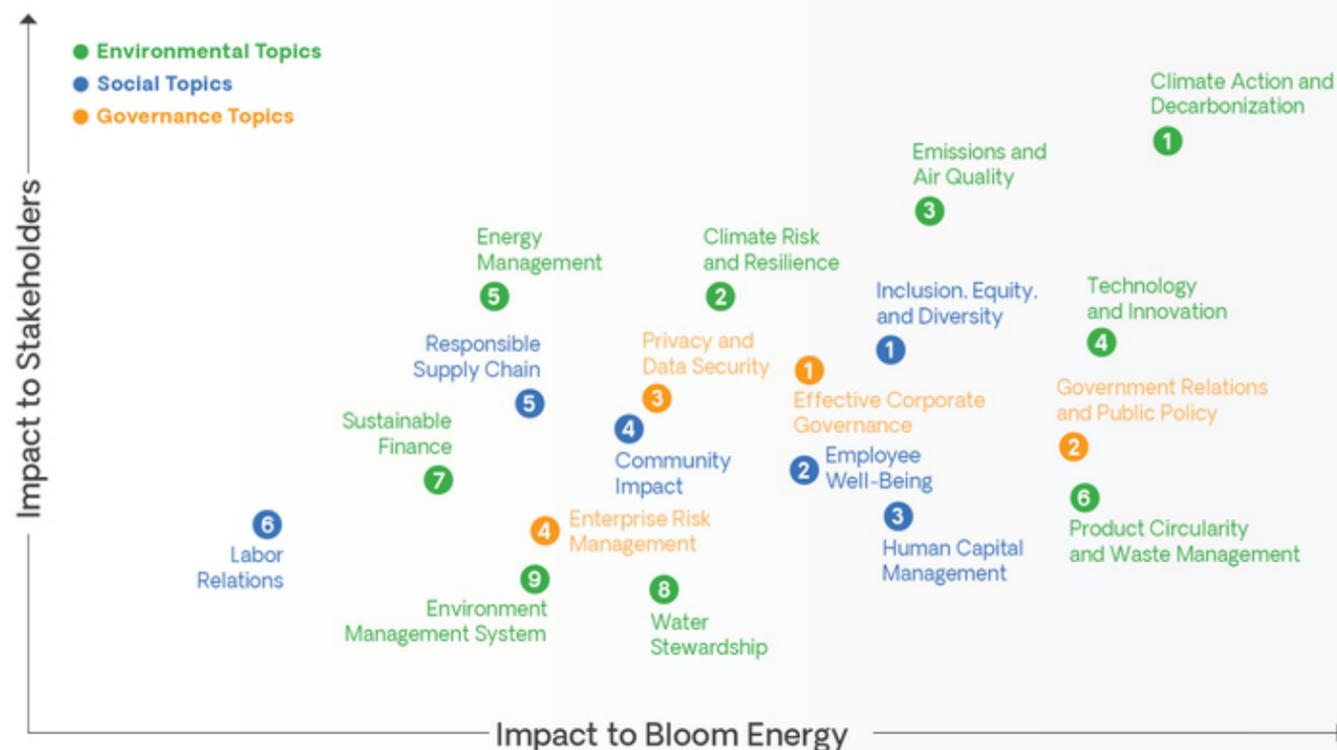
Green Notes 2023 Progress Report

In September 2020, we issued our first Green Convertible Senior Notes (the "Green Notes") with an initial $230 million issuance due in 2025. We have followed that up with another issuance of $632.5 million in May of 2023 due 2028. The **updated investment framework**, which can be found on our website, reinforces our commitment to decarbonization and energy sector transformation by directing proceeds toward renewable energy projects and microgrid componentry, along with research and development associated with our decarbonized product portfolio. Both Green Notes were aligned with the International Capital Market Association's Green Bond Principles (GBP), and a positive second party opinion was provided by Sustainalytics. We have an annual obligation to report on use of proceeds and enabled impact across the investment framework, and we are pleased to provide our progress report below, also reviewed by Sustainalytics.

Total Allocated Per Reporting Period

100%
The 2020 issuance is 100% allocated

5%
The 2023 issuance is 5% allocated
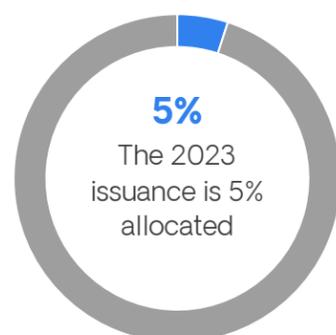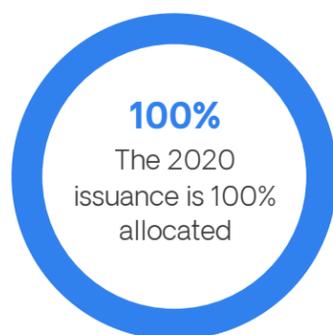
NOTE DETAILS

Issuer	Bloom Energy Corp.	Bloom Energy Corp.
Issue Date	8/11/2020	5/16/2023
Currency	USD	USD
Tenor	5 year	5 year
Issued Amount	$230 million	$632.5 million
CUSIP	093712107	093712 AJ6
Use of Proceeds		
Amount Distributed to Eligible Projects in Reporting Year (million USD)	$58.6	$29.8
Percentage of Notes Allocated to Date	100%	5%

USE OF PROCEEDS CATEGORY	PROJECTS FINANCED	CONSOLIDATED ENVIRONMENTAL IMPACTS REPORTED
RENEWABLE ENERGY	Biogas Applications	In 2023, Bloom's waste-to-energy fuel cell installations reduced a total of 196 tonnes of CO_2e. For several of these categories we are still in the R&D phase, and there are no operations in the field. Environmental impacts from operations will be quantified as projects come online.
	Hydrogen Energy Servers	
	Electrolyzers	
	CHP Applications	
	Carbon Capture Applications	
CLIMATE CHANGE ADAPTATION	Marine Applications	Bloom's microgrid systems facilitate customers' energy needs during grid outages. Events where a Bloom microgrid supplies power to a customer during a grid outage is called a "ride-through" event. In calendar year 2023, Bloom's microgrids have facilitated 704 ride-through events for customers, carrying a total of 128,943 MWh of energy demand over 529 hours of grid outages. From August 11, 2018, (Bloom's lookback date for the original issuance) to December 31, 2023, Bloom's microgrids facilitated 3,068 ride-through events for customers, carrying a total of 5,525,371 MWh of energy demand over 4,932 hours of grid outages.
	Fuel Blending Projects	
	Microgrid Componentry	
	Microgrid R&D	
POLLUTION PREVENTION AND CONTROL	End-of-Life Recycling Activity	Over 99% of products by weight that are sold are either recyclable or reusable. **Weight of end-of-life material recovered and avoided landfill by year:** • 1,135 tonnes in 2019 • 1,420 tonnes in 2020 • 1,738 tonnes in 2021 • 3,028 tonnes in 2022 • 3,559 tonnes in 2023
GREEN BUILDINGS	Headquarters Build-out	Bloom's headquarters are a LEED Gold certified building. In 2023, Bloom did not use proceeds from the Green Notes to fund any additional expansion of our headquarters building. By occupying a LEED certified building, the following measurable environmental effects have resulted: **Water:** • The building is reducing its indoor potable water use by at least 40% compared to a baseline building. • Irrigation and outdoor water uses are reducing potable water use by at least 50% compared to similar landscaped areas. **Energy:** • Core and Shell building is reducing its energy consumption by 28% compared to a similar baseline building. **Materials:** • The project was able to divert at least 75% of its construction and demolition waste from the landfill during the construction phase. • At least 20% of the building's material (by cost) were sourced from recycled content. • At least 20% of the building materials (by cost) were harvested and manufactured within 500 miles of the project site. **Indoor Environmental Quality:** • 90% or more of the floor areas have direct line of sight to the outdoors. • 75% or more of the floor plan has at least 25-foot candles of daylight during typical occupancy hours.

Climate-Related Risks and Opportunities

We take climate change risk seriously. While our products and technologies can help customers respond to current climate risks and mitigate future effects by reducing greenhouse gas ("GHG") emissions, we understand that our business is subject to those same risks. We expect climate considerations to drive fundamental shifts in the energy industry for years to come. In response to TCFD recommendations, we identify climate-related risks, opportunities, and management responses across four dimensions: market and technology shifts, reputation, policy and legal, and physical risks. We will continue to evaluate and formalize responses to risks as they arise through our evolving Enterprise Risk Management program.

0–3 years Near-term	3–10 years Medium-term	10–30 years Long-term

Market & Technology Shifts

Risks		Opportunities	
TIME HORIZON	**DESCRIPTION**	**TIME HORIZON**	**DESCRIPTION**
Near-term, Medium-term	Acceleration of renewable or carbon-free energy procurement goals may adversely impact customer demand for natural gas-based systems.	Near-term, Medium-term	Increased customer interest in delivery of reliable, resilient, renewable, and/or zero-carbon baseload power creates opportunities for our innovative product offerings and expands market opportunities to new utility scale applications. The focus on rapid decarbonization in the transportation sector expands market opportunities into transportation fuel, including electricity and hydrogen.

IMPACT ON BUSINESS STRATEGY & FINANCIAL PLANNING

Customer interest in renewable or carbon-free energy solutions may require us to offer a broader range of market-based or on-site fuel solutions and/or shorter deal terms. Alternatively, we may need to advance commercial offers to accommodate blends of renewable fuel, which will require additional R&D investment and the development of formalized contractual and commercial commitments.	We will need to develop in-house product development, engineering, and commercial expertise across a range of new applications. We will also need to develop new partnerships, including new utility partnerships, to help position and test new technology and business models.

2023 MANAGEMENT ACTIONS IN RESPONSE

We introduced our Series 10 commercial offering, which promises to deliver 10MW blocks of power to customers in 50 days for a five-year term to help customers struggling with time to power issues without having to make a long-term natural gas commitment. Additionally, we are actively engaged in the GHG Protocol revision process, advocating for the establishment of avoided emissions reporting in voluntary GHG inventories, which would formalize the process for avoided emissions reporting from Bloom projects. Finally, we began signing orders from customers that want carbon capture functionality enabled on the Energy Servers they will be deploying at their sites.	We operationalized the world's largest solid oxide electrolyzer in a 4MW demonstration at our NASA Ames Research Center within two months to show our operational readiness to deploy electrolyzers to support clean hydrogen projects.

Reputation

Risks

TIME HORIZON	DESCRIPTION
Near-term, Medium-term	As the energy transition intensifies, public discourse surrounding energy topics may become politically charged. Our unique deployment characteristics and value proposition may require us to engage across stakeholder groups in a nuanced and data-driven manner to avoid reputational damage.

Opportunities

TIME HORIZON	DESCRIPTION
Near-term, Medium-term	Bloom is positioned as a thought leader on both critical energy resilience and carbon mitigation efforts. Continued delivery of projects offering community impact and disaster response can provide a platform for stakeholder engagement with the potential for reputational enhancement. Bloom's position as a domestic clean energy manufacturing job creator also offers potential to differentiate the company.

IMPACT ON BUSINESS STRATEGY & FINANCIAL PLANNING

Anti-natural-gas sentiment or misalignment with renewable and low carbon procurement goals may adversely impact public policy and customer demand for our products. Engagement with a diverse set of stakeholders requires investments in communications, marketing, policy, and sustainability teams.	The company will need to continue to devote resources to market development outside of traditional corporate commercial and industrial clients and deepen investments in teams focused on community engagement.

2023 MANAGEMENT ACTIONS IN RESPONSE

The company added CJ Warner to its Board, bringing 40 years of experience in the energy sector navigating complex reputational challenges. She previously served as the CEO of Renewable Energy Group, a leading bio-diesel producer, and is a Board member of Chevron and Sempra.	The company celebrated 10 years at our manufacturing facility in Delaware, focusing on the impact of the clean energy manufacturing jobs we create in the region. We published our Delaware economic impact report, highlighting $300M in economic impact to the state through our presence.

Policy & Legal

Risks

TIME HORIZON	DESCRIPTION
Near-term, Medium-term, Long-term	In some jurisdictions, we may be denied requests for utility service connection or may be subject to additional operating conditions. This includes restrictions to natural gas system interconnection. We may be subject to a heightened risk of regulation and a potential loss of certain enabling incentives. Our projects may also become subject to carbon pricing.

Opportunities

TIME HORIZON	DESCRIPTION
Near-term, Medium-term, Long-term	New incentives for microgrids, biogas, hydrogen, and carbon capture utilization and storage (CCUS) projects, with enhancements for domestic manufacturers, have emerged through the Infrastructure Investment and Jobs Act as well as the Inflation Reduction Act.

IMPACT ON BUSINESS STRATEGY & FINANCIAL PLANNING

Loss of gas access or enabling incentives may limit our ability to offer services to certain customer segments in certain regions. The introduction of meaningful carbon pricing may erode savings that drive customer value from our natural gas-fueled energy servers.	These opportunities drive material incentive dollars applicable to Bloom projects with direct benefit to corporate financial performance.

2023 MANAGEMENT ACTIONS IN RESPONSE

We conducted our first forward carbon price risk exposure for our facilities and projects around the world, leveraging scenarios from The Network for Greening the Financial System (NGFS) forward scenario analysis.	Our policy, legal, and regulatory teams and consultants are focused heavily on direct policy engagement on local, state, and federal levels, as well as participation in key multi-stakeholder working groups such as the Fuel Cell and Hydrogen Energy Association and the Hydrogen Council.

Physical Risks

Risks	
TIME HORIZON	**DESCRIPTION**
Medium-term, Long-term	We rely on a limited number of third-party suppliers for some of the raw materials and components for our products. Therefore, our supply chain could be disrupted by severe weather events. Our offices and manufacturing facilities could also be impacted by climate-driven severe weather. Similarly, Bloom equipment in operation could be impacted by physical climate risks.

Opportunities	
TIME HORIZON	**DESCRIPTION**
Near-term, Medium-term, Long-term	If climate-driven severe weather continues to intensify, it will strain grid operations and incentivize resilient and distributed power solutions like our microgrids.

IMPACT ON BUSINESS STRATEGY & FINANCIAL PLANNING

If our operations, supply chain, or equipment in operation is disrupted by climate-driven severe weather, we may face material financial impacts.

We will need to continue to invest in our microgrid offerings and increase the variety of resiliency options made available to customers.

2023 MANAGEMENT ACTIONS IN RESPONSE

We have created an internal cross-functional team designed to mitigate business continuity risk and minimize compliance exposure. We have also taken steps over the last several years to diversify our supplier base.

We deploy in a small-scale and distributed fashion, reducing risk of any one severe weather event impacting our installations broadly.

Additionally, we conducted our first physical climate risk assessment and scenario exercise across a sample of our facilities, projects, and supply chain.

Already identified as a leader in microgrid deployments with over 170 projects installed to date, we are further investing in our microgrid capabilities, including through proceeds from our GREEN NOTES, and exploring utility partnership models for increased local resilience.

We have also developed skid-mounted, quick-deploy microgrid solutions that are removable to provide more flexibility to corporate tenants.

Scenario Planning

We have conducted our first forward scenario analysis focused on quantifying inherent physical climate risks and our exposure to carbon pricing risk across a sample of our facilities, projects, and supply chain. We understand that climate-related risks and opportunities impact our commercial strategy and financial planning and endeavor to enhance our understanding of those risks in line with TCFD recommendations. We used the Shared Socioeconomic Pathways (SSP) scenarios released along with the IPCC's sixth assessment report published in 2021 to inform the analysis. The scenarios were developed to consider how factors such as population, economic growth, education, urbanization, and technology development may change over time. Our results demonstrate the magnitude of potential impact across each scenario and time horizon, providing insight into the extent of risks posed at the different locations as well as the change from historic data.

Methodology

Four physical climate hazards were assessed:

HAZARD:	INDICATOR:
Extreme weather events	Extreme rainfall and riverine flooding
Wildfire	Fire weather index score
Hurricane	Historic maximum wind speed
Sea level rise	Inundation depth from coastal flooding with storm surge

13

Bloom locations included covering Bloom manufacturing facilities, project sites, and supply chain partners

Bloom Energy Climate Risk Exposure

Time Horizons

2005

2030

2050

Climate scenarios

SSP1

Taking the Green Road (low challenges to mitigation and adaptation): Aligned with the RCP 2.6 scenario, which predicts a 1.5 degree Celsius increase in average temperature by 2100

SSP2

Middle of the Road (medium challenges to mitigation and adaptation): Aligned with the RCP 4.5 scenario, which predicts a 2–3 degree Celsius increase in average temperature by 2100

SSP5

Taking the Long Road (high challenges to mitigation and low challenges to adaptation): Aligned with the RCP 8.5 scenario, which predicts a more than 4 degree Celsius increase in average temperature by 2100

In looking at the results of this physical risk scenario analysis, we focus on the SSP5 scenario, which indicates a 'worst case' scenario for physical climate impacts to help inform planning and resilience. To assess the level of risk exposure, we established five categories based on the magnitude of potential impact from each hazard: Very Low, Low, Moderate, High, and Very High.

UNITED KINGDOM
GERMANY
FRANCE
SPAIN
ITALY
SAN JOSE, CA
NEWARK, DE
MUMBAI, INDIA
JAPAN
AUSTRALIA

Inherent Physical Risk Exposure

Extreme Weather	
Medium term (2030)	**MODERATE**
Long term (2050)	**VERY HIGH**
Assessment	

For extreme weather events, the majority of sites experience High to Very High exposure to extreme precipitation in 2030 and 2050. The suppliers located in Thailand, India, China, and South Korea that were included in this analysis face the highest risk exposure along with one of Bloom's office and warehouse locations in India. Riverine flooding exposure is Very Low or Low across the sites analyzed with the exception of Bloom's India site and a data center location in New Jersey. Riverine flood exposure is relatively unchanged from 2030–2050.

Wildfire	
Medium term (2030)	**LOW**
Long term (2050)	**LOW – MODERATE**
Assessment	

Across the portfolio of sites evaluated, the majority have Very Low or Low wildfire risk exposure with the exception of locations in Northern California and India. For these locations, there is a notable increase in risk exposure in 2030 from baseline conditions from Low or Moderate risk exposure to Very High. In 2050, we see an increase from Low risk exposure to Moderate risk exposure in Bangalore, India, and Central California.

Hurricane	
Assessment	

Hurricane and cyclone risk exposure is based on historic maximum wind speeds at each location. Forward-looking data for hurricane exposure was not evaluated in this analysis. Based on historic exposure, most sites have Very Low to Moderate risk exposure. Sites in Mumbai, India, and China have Very High historic maximum wind speed, which may indicate higher exposure to cyclones in the future.

Sea Level Rise	
Medium term (2030)	**LOW**
Long term (2050)	**LOW**
Assessment	

Overall exposure to sea level rise across the portfolio evaluated is Low as most locations are not coastal. Two sites in Northern California may experience increasing risk exposure with one location increasing from Low risk exposure to Moderate risk from 2030 to 2050 and the second location increasing from High risk exposure to Very High risk exposure from baseline to 2030 and remaining Very High up to 2050.

Commercial Impact of Extreme Weather

In order to understand which of our sites might require the most attention from a mitigation standpoint, we ran a financial impact assessment on extreme weather events, which was found to be the most relevant of potential climate risks in our sample. This assessment evaluated the potential financial impact on asset value associated with unmitigated extreme weather events at any of our sample locations. The facility with the highest asset value at risk and greatest chance of climate driven extreme weather over time is our Delaware manufacturing facility.

ASSET VALUE × **MAXIMUM DAMAGE** × **RAINFALL EVENT INTENSITY** = **FINANCIAL IMPACT**

Extreme precipitation & financial impact 2030

■ Extreme precipitation 2030 SSP1-2.6   ■ Extreme precipitation 2030 SSP2-4.5
■ Extreme precipitation 2030 SSP5-8.5   — Financial exposure 2030 SSP2-4.5

Extreme precipitation & financial impact 2050

■ Extreme precipitation 2050 SSP1-2.6   ■ Extreme precipitation 2050 SSP2-4.6
■ Extreme precipitation 2050 SSP5-8.52   — Financial exposure 2050 SSP2-4.5
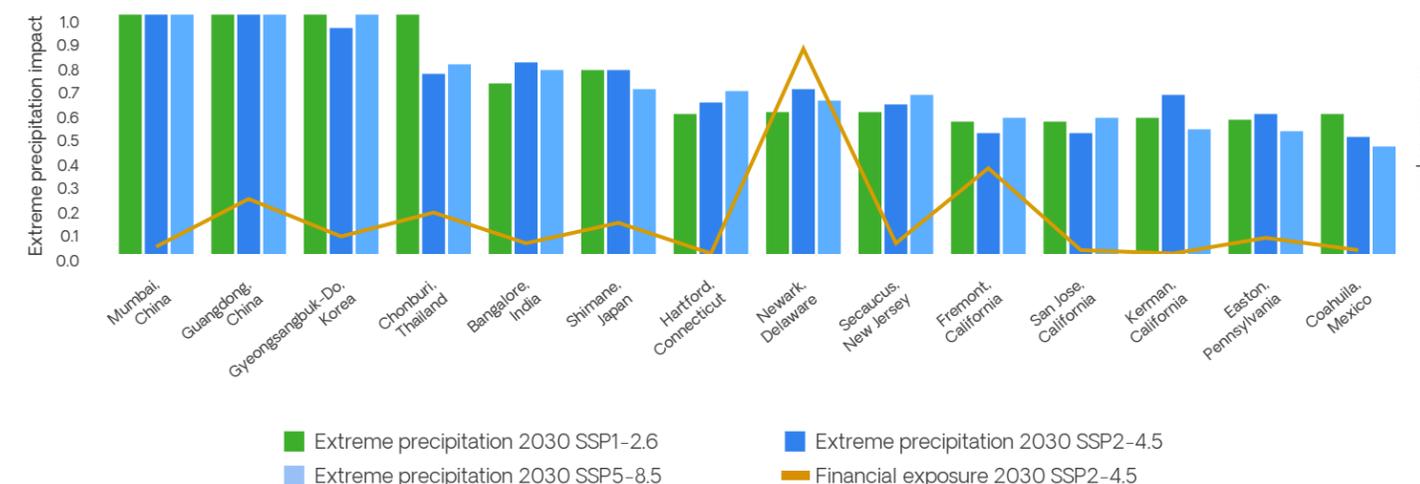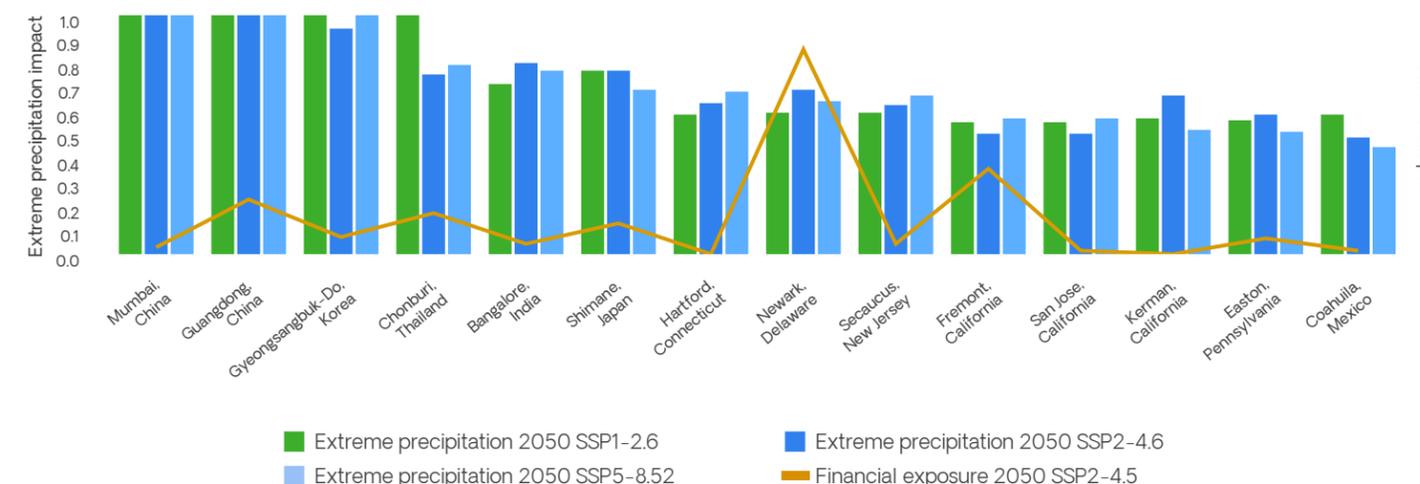
Enterprise Risk Management

Bloom has an Enterprise Risk Management (ERM) program that promotes effective risk management practices within the organization. To achieve any goal, objective, or outcome, including environmental and diversity initiatives, as well as compliance with ESG reporting standards, we encounter various risks. To address this issue, Bloom has incorporated climate-related risks and opportunities throughout the ERM program, which is essential to our business strategy.

We believe that climate risks are drivers of existing risk categories and types. Through a risk lens, we conducted a thorough review of climate-related risks relevant to our industry and geographical locations. This review included both physical risks, such as extreme weather events, and transitional risks, such as policy or market shifts. We have taken this review into account and incorporated a climate component in relevant risk descriptions in our risk register. We are committed to continuous improvement and will regularly review and update our approach to climate-related risk management based on new data, scientific findings, and changes in regulations.

At Bloom, ensuring business continuity and disaster recovery is of utmost importance. Our offices, manufacturing facilities, suppliers, and equipment may be vulnerable to climate-driven severe weather events. Any significant

disruption in our operations could adversely affect the production of our products, potentially resulting in harm to our business and operations.

We have established a team to mitigate potential business continuity and disaster recovery risks. This cross-functional team is responsible for reviewing, assessing, and managing the risks involved. Our mitigation plan includes conducting business impact analyses and comprehensive planning, and rigorously evaluating our strategies. To ensure a wide network of support, we are establishing business continuity coordinators across the organization. Additionally, we've engaged a third-party vendor to provide risk monitoring and emergency notification services. The risk monitoring component is crucial in providing us with real-time information on extreme weather events that may impact our employees, facilities, and operations. Ultimately, this information is key to protecting our organization and employees from potential threats,

Bloom seeks to continuously improve our program and processes to identify, assess, and respond to risks and opportunities across the organization, including ESG-related risks.

Elements of Our ERM Program

Board Oversight

Bloom's Board of Directors has primary responsibility for risk management, with the Audit Committee having responsibility for the ERM framework and risk assessment process. The Audit Committee supervises the policies and processes established by the ERM Committee to assess, monitor, manage, and control the company's material financial and other risk exposures, including operational, climate, and strategic risks. The Audit Committee reviews the company's key risks and receives updates on specific risk topics throughout the year.

Enterprise Risk Management Committee

The ERM Committee has been established by the Audit Committee of the Board of Directors to assist in overseeing the company's ERM program. The Committee is comprised of members of Bloom's executive management and senior leadership team. The ERM Committee plays a crucial role in setting the tone and developing a culture of risk management, promoting open discussions regarding risk, and integrating risk management into the company's goals and compensation structure.

Ongoing Assessment of Risk

Bloom regularly reviews and assesses risks to ensure the company is prepared for any potential impact. This involves identifying any new or emerging risks, analyzing their potential impact, and evaluating the best course of action. Both internal and external factors are considered, including industry trends and changes in the business environment. By continuously monitoring and periodically reassessing, Bloom remains proactive in adapting to evolving risks and maintaining effective risk management practices.

Targets

The company understands that sustainability targets are critical to guiding the business away from potential risks and toward opportunities. We continue to work to bring a comprehensive suite of corporate goals forward and have been focused on developing a credible, data-driven framework for our unique business, greenhouse gas inventory approach, and deployment model. Further, we are aware that SEC rules and state laws on climate risk and GHG reporting have recently been adopted. We intend to align any forthcoming ESG program goals with prevailing guidance. Until such time as we may announce targets, we present impact projections in the interest of transparency, and they should not be construed as representing company targets or goals.

Policy Support for the Energy Transition

Earlier in this report, we detailed the impact of our product portfolio against a net-zero trajectory for the energy sector and included specific incentives from the Infrastructure Investment & Jobs Act (IIJA), and the Inflation Reduction Act (IRA). Both laws contain significant policy and economic support for clean energy projects and map directly to the transformation needs of the energy sector and Bloom's commercial strategy.

The IRA is one of the most meaningful climate bills ever passed in the U.S. and has the potential to significantly curb the country's GHG emissions. The legislation addresses a host of issues, but its $369 billion earmarked for clean energy and climate change represents an unprecedented level of federal support for the energy transition. The policies enshrined in the law are expected to reduce U.S. GHG emissions 40% by 2030 compared to 2005 levels.[5] The Act incentivizes multiple sources of clean energy, including energy storage, nuclear power, clean energy vehicles, hydrogen and carbon capture utilization, and storage (CCUS) and provides Investment Tax Credits (ITCs) and Production Tax Credits (PTCs) for clean energy generation.

The IRA also focuses on the social impacts of the energy transition. It awards higher incentives to projects implemented by workers paid increased wages, based in existing energy communities, or using threshold amounts of domestic content. Further, the Act gives taxpayers the option of direct pay and/or transferability of tax credits through cash sales. These options reduce the need to enter complex tax equity financing arrangements.

The IRA's impact on the production of clean hydrogen is perhaps the most important new area of policy support. Where taxpayers comply with prevailing wages and apprenticeship requirements, they are eligible for a tax credit of up to $3/kg of hydrogen. These tax incentives will likely make the U.S. one of the cheapest regions in the world for clean hydrogen production. Previous ITC and PTC vehicles have played an important role in the growth of renewables across the U.S. It is expected that these new incentives will help the U.S. better align with its Paris commitments and provides meaningful policy support to Bloom's commercial strategy.

5   https://www.weforum.org/agenda/2022/08/why-the-u-s-inflation-reduction-act-is-an-important-step-in-the-transition-to-clean-energy/

SPOTLIGHT ON

Hydrogen Hubs

Bloom is an active participant in the Department of Energy's Regional Hydrogen Hub program made possible through $8 billion in grant funding through the IIJA. The high efficiency of our electrolyzer enables projects to deliver the most hydrogen for a given amount of energy. This maximizes the impact of the funding made available through the hub program. Through our customer, financing, and installation partners, we have been an active participant in 14 hubs across all regions of the country and are associated with four of the seven hubs awarded $7 billion in funding by the DOE in October 2023. This vital funding will support efforts to power public transportation, heavy duty trucks, port operations, and other important undertakings that support the commercializing of a clean hydrogen market across the country. The Hydrogen Hubs, including California's, were conceived by the Biden-Harris administration to accelerate and support the country's commercial market for affordable and clean, renewable hydrogen, an immensely valuable energy product that facilitates a myriad of carbon emissions reduction strategies around the world.

Innovation

Bloom Energy has been at the forefront of energy innovation for more than two decades, providing alternatives to centralized energy. We developed the first large-scale, commercially viable solid oxide-based power generation platform that allows organizations, essential services, critical infrastructure, and communities to responsibly take charge of their energy future. In addition, the same solid oxide platform can be harnessed to produce and utilize hydrogen, recognized as the renewable fuel of the future. Our teams are hard at work advancing our technology, as well as operating and commercial models.

Driving Innovation at Bloom

As we work towards diversified solutions that address the needs of multiple industries, we are also working to spur further innovation that improves product efficiencies, reduces costs, and identifies new opportunities across the business. We recognize that good ideas can come from anywhere, and we aim to foster an environment where our employees feel comfortable championing those ideas.

Technological Innovation

Since its founding twenty-plus years ago, Bloom Energy has been on the forefront of technological innovation in the fuel cell space. Our world class teams work to constantly evolve our technology and manufacturing processes as evidenced by our expanding patent library. Through December 2023, Bloom had 325 issued and active United States Patents and 145 patents internationally, demonstrating the commitment we have to lowering costs and improving the output, efficiency, reliability, and sustainability of our products.

Manufacturing Innovation

In 2023, we scaled up production at our multi-gigawatt factory in Fremont, California, while streamlining and consolidating operations from our Sunnyvale, California, facility to our Fremont facility. The consolidation and ramp in production capacity during 2023 enabled us to produce our Energy Server platforms more efficiently. The plans provide for an additional ramp up in production with incremental investments in plant level technology that will enable efficiency and scale. One example is the installation of a new continuous furnace that centralizes a key piece of the fuel cell manufacturing process, drives energy efficiency improvements, and allows for increased production. We invested in our Newark, Delaware, factory during 2023 to increase production capacity, including a high volume electrolyzer manufacturing line for commercial deployment in North America and Europe with installed production capacity at two gigawatts per year. Moreover, our joint venture with SK ecoplant is now capable of full assembly.

Commercial Innovation

In 2023, we launched our Series 10 Product offer, challenging the way business buys power. Under the novel product offering, Bloom will ship its on-site power solution in as few as 50 days from order to meet rapidly growing power needs, with zero upfront costs and a short five-year contract. The Series 10 offers the most flexibility available in the market today at no upfront cost, which allows customers focused on their decarbonization journeys to get the onsite power and resilience they need today without locking into long-term energy procurement models as the energy transition unfolds.

10 Megawatts	**50** Day Shipment	**5** Year Term

Advancing Our Technology

The Bloom Electrolyzer

In May of 2023, Bloom began generating hydrogen from the world's largest solid oxide electrolyzer installation at NASA's Ames Research Center, the historic Moffett Field research facility in Mountain View, California. This high-temperature, high-efficiency unit produces 20%–25% more hydrogen per megawatt (MW) than commercially demonstrated lower temperature electrolyzers such as proton electrolyte membrane (PEM) or alkaline. This electrolyzer demonstration showcases the maturity, efficiency, and commercial readiness of Bloom's solid oxide technology for large-scale, clean hydrogen production. The 4 MW Bloom Electrolyzer™, delivering the equivalent of over 2.4 metric tonnes per day of hydrogen output, was built, installed, and operationalized in a span of two months to demonstrate the speed and ease of deployment.

This demonstration is a major milestone for reaching net-zero goals. Hydrogen will be essential for storing intermittent and curtailed energy and for decarbonizing industrial energy use. Commercially viable electrolyzers are the key to unlocking the energy storage puzzle, and solid oxide electrolyzers offer inherently superior technology and economic advantages. The current demonstration expands on Bloom's recent project on a 100 kW system located at the Department of Energy's Idaho National Laboratory (INL), which achieved record-breaking electrolyzer efficiency. In the ongoing project, 4,500 hours of full load operations have been completed with a Bloom Electrolyzer™ producing hydrogen more efficiently than any other process—over 25% more efficiently than low-temperature electrolysis.

As a part of the demonstration, we tested emerging market-based models for low carbon attribute transfers to the project in order to simulate guidance for grid connected electrolysis projects potentially required by the Treasury department to access the 45V hydrogen production tax credit. Our work investigated both temporally and emissions-matched assessments of a spot REC transaction. We will continue to leverage our leading position in the environmental markets to ensure the integrity and readiness of our projects as we advance our technology in the field.

Combined Heat and Power

The Bloom Energy Server is configurable as a Combined Heat and Power (CHP) system, increasing total system efficiency and improving customer economics. With a platform based on solid oxide technology, operating at temperatures above 800℃, the Bloom Energy Server can produce clean energy at one of the highest efficiencies in the market today. The high temperature cathode exhaust from the Energy Server can be channeled, allowing the resulting exhaust heat to be available for further use. Once captured, this high temperature heat can be utilized in various applications and to further increase the overall efficiency of the system. By adding heat capture, the total system efficiency can reach a lifetime average efficiency of >90%.

2023 saw significant advancements in Bloom's heat capture technology with developments to address high pressure drop applications, opening markets that have a need for process steam or cooling. Bloom has partnered with CEFLA in Italy and has installed the first CHP system to generate hot water using heat from the exhaust.

The Bloom Energy Server with heat capture technology reaches a lifetime average efficiency of:

>90%

Waste to Energy

Raw biogas contains primarily methane, which is the same hydrocarbon that makes up natural gas and when upgraded to pipeline quality is often referred to as renewable natural gas or biomethane. The same Energy Server that currently operates on natural gas can also be used in biogas applications with just a simple treatment process for the biogas to remove contaminants. Bloom Energy is currently operating Energy Server systems in agricultural settings. They are not only powering the farm, they are providing power to the grid in order to power electrical vehicle (EV) charging stations for automobiles while improving the local air quality. Our teams continue to advance ways to treat raw biogas so we can efficiently deploy at more onsite biogas facilities.

In 2023, we commissioned two additional projects at dairy farms in California operating on biogas produced from the anaerobic digestion of dairy cow manure. Additionally, our first dairy biogas project, which went online in 2021, got its lifecycle carbon intensity score certified by the California Air Resources Board (CARB). At -790.41 gCO₂e/MJ, it is the lowest CI score ever recorded in the low carbon fuel standard program operated by CARB. This means the project is the most climate beneficial to date, and provides additional air quality benefits to the local community.
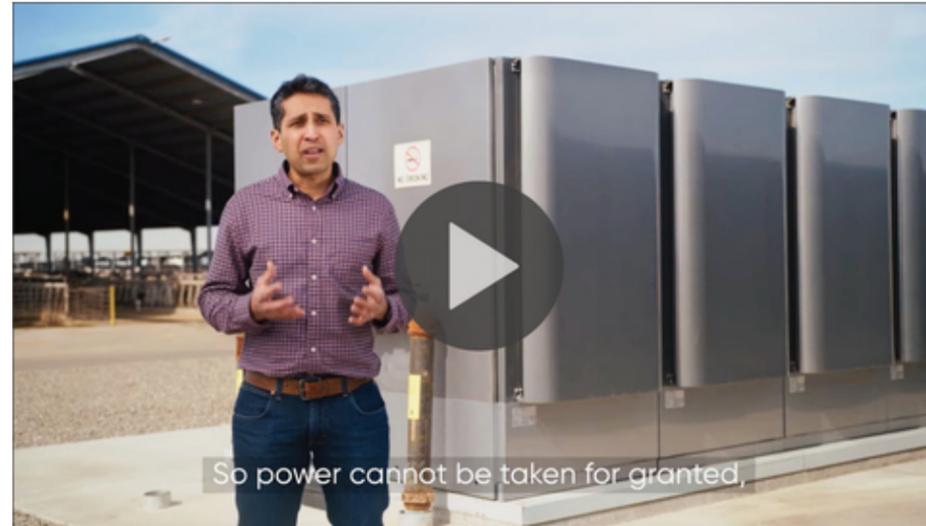
Click here to watch the video.

"Humanizing Energy" is a series of short films that spotlight the organizations and communities embracing the move to more renewable sources of energy, like those at Bar 20 Dairy Farms in Kerman, CA. The Bar 20 film follows owner Steve Shehadey and his daughter Bonney as they discuss the challenges and opportunities of running a multi-generational dairy business. The Bloom Energy project, winner of the American Biogas Council's Project of the Year, uses renewable biogas from the farm's cows to provide all the electricity needed to run operations. Stories like this help bring people back into the center of the climate conversation and highlight how diverse communities are responding to the challenge.

Carbon Capture Utilization & Storage

During normal Energy Server operation, our anode and cathode exhausts are mixed together before venting to the atmosphere. Because the anode exhaust gas is segregated from the cathode exhaust within the fuel cells, Bloom can easily collect the anode exhaust, which contains nearly all the carbon dioxide generated during power production. The anode exhaust consists primarily of carbon dioxide and water. Water can be easily removed using processes such as drying or condensing, resulting in a stream that has ~65% CO₂ purity with the rest being primarily H₂. The H₂ can be recycled as fuel to the fuel cell. The high purity of the CO₂ compared to traditional forms of power generation means that CO₂ capture can be done much more cost effectively and at smaller scale using existing commercially proven processes and equipment. In 2023, we drove additional commercial activity by signing orders from customers that want carbon capture functionality enabled on the Energy Servers they will be deploying at their sites.

The Climate Imperative

The remaining carbon budget, the net amount of CO_2 that can still be emitted without hitting a particular global warming threshold, is becoming strikingly smaller each passing year. There is some uncertainty in the budget, and it varies based on the associated warming trajectory, but the reality is sobering. The latest analysis in the *Journal Nature* suggests that for a 50% chance of keeping warming at 1.5 °C, the budget is approximately 250 GtCO₂ as of January 2023, equal to around six years of current CO_2 emissions.[6] This new figure is half the size of the estimated budget in 2020 and reinforces the uncertainty in warming trajectories.

Last year in our 2022 Sustainability Report, we devoted time to address the importance of the concept of the __Time Value of Carbon__, which places a premium on near-term climate action considering this uncertainty and risk associated with the pace and extent of climate action. Bloom has long been an advocate of pragmatic, near-term emission reduction opportunities, which is why we provide avoided emissions modeling in our annual sustainability report. This latest analysis tells us there has never been a more important time to act quickly, decisively, and at scale to achieve emissions reductions wherever possible, but particularly in the energy sector, which contributes three quarters of global carbon emissions.[7]

The world is rightfully focused on a long-term shift to renewable solutions, but there are very significant barriers to the transformation of the system that are misaligned with the realities of our remaining carbon budget. We are struggling to interconnect new projects, build the high voltage interstate transmission capacity needed to move renewable power to load centers, and integrate firm baseload power solutions generally. Our policy preferences seem to suggest that we have until 2045 or 2050 to make the necessary changes. The reality is that we now have until 2030...maybe.

In order to extend our time horizon and ration our remaining carbon budget to buy the energy sector and the world time for systemic evolution, we need to find emission reductions, and we need to find them now.

One thing is clear, looking at the energy technologies needed to address the sector's contribution, we can't meet our goals without carbon capture utilization and storage. Analysis by the International Energy Agency (IEA) indicates that power plants fueled by coal and gas continue to dominate the global electricity sector, accounting for almost two thirds of power generation, a share that has held constant since 2000, even with increases in renewable deployments. In absolute terms, power generated from fossil fuels has increased by 70% since 2000, reflecting a steady increase in global demand for power. Despite the pressing need for emissions reductions and a steady increase in renewable generation, emissions from the power sector remain largely flat globally. Meeting long-term climate goals without CCUS at scale requires the virtual elimination of coal-fired power generation and, eventually, that of gas-fired generation as well, with significant early retirements, which is an unlikely outcome.[8]

Meeting energy sector decarbonization targets requires the flexibility to integrate large volumes of renewables with clean firm generation sources, historically provided through gas-fired generation. CCUS allows for these types of plants to continue providing grid benefits at an attractive cost profile that can enable projects and associated carbon reductions today, relative to more expensive 24/7 carbon-free energy pathways. One of those primary alternatives is solar or wind plus storage projects that offer the promise of flexible capacity but come with challenges, including cost. A Stanford University study of a system in California in 2030 using natural gas based CCUS technologies saved $750 million in total electricity system costs compared to a system that relied heavily on renewables and battery storage for clean firm power.[9]

CCUS offers some of the largest potential to address hard-to-abate emissions now, while we work to bring renewable power and fuel systems forward. Importantly, Bloom is focused on advancing biogas and clean hydrogen ecosystems, but we're sensitive to the imperative to reduce emissions today. IEA analysis suggests that CCUS retrofits to industrial

"California cannot afford to limit its flexibility by eliminating technology options or pursuing unfocused or suboptimal policies that may hinder, rather than accelerate, decarbonization."

[6] https://www.nature.com/articles/s41558-023-01848-5#:~:text=The%20remaining%20carbon%20budget%20(RCB)%20is%20the%20net%20amount%20of,anthropogenic%20climate%20forcers1%2C2.

[7] https://www.iea.org/data-and-statistics/data-tools/greenhouse-gas-emissions-from-energy-data-explorer

[8] https://www.iea.org/reports/the-role-of-ccus-in-low-carbon-power-systems/why-carbon-capture-technologies-are-important

[9] https://sccs.stanford.edu/sites/g/files/sbiybj17761/files/media/file/EFI-Stanford-CA-CCS-FULL-rev2-12.11.20_0.pdf

and power facilities can eliminate 8Gt of CO_2e by 2050, equal to a quarter of today's annual energy sector emissions, too big of a reduction in the carbon budget to ignore. Critically, CCUS projects can address industrial emissions in sectors with limited abatement options. Additionally, projects can be installed on a distributed basis at data centers and other large energy consumers where we expect to see explosive growth in energy demand. Global data centers, AI, and crypto installations consumed an estimated 460 terawatt-hours (TWh) in 2022, about 2% of total global electricity demand. That's expected to top 1,000TWh in 2026, roughly equivalent to the electricity consumption of Japan.[10] Not only are we able to serve these loads with localized, resilient, low carbon power, our CHP solutions can further reduce conventional gas consumption by providing heat that can be used for both heating and cooling.

Bloom's distributed technology, capable of supporting CCUS projects with onsite generation, can help enable direct air capture projects, renewable fuel development, and novel industrial carbon utilization cases like cement and concrete manufacturing. And given the near term focus on costs for some of these novel project types, Bloom's leading efficiency offers a compelling economic profile to drive project costs down. Our distributed CCUS capability not only has the ability to deliver onsite power efficiently, it also avoids additional transmission and distribution cost and complexity.

One of our largest challenges in transforming the energy landscape is developing new transmission and distribution infrastructure for both power and gas systems. Costs for electricity transmission can top $1,500 a mile, which is up to eight times higher than hydrogen pipelines, eleven times higher than natural gas pipelines, and twenty to fifty times higher than for liquid fuels.[11] Both high costs and permitting challenges contribute to our inability to integrate low carbon generation sources more quickly. Due to our lack of adequate transmission infrastructure, we now have over 10,000 projects (90% of which are zero carbon) representing 1,350 GW of generation capacity and 680 GW of storage in interconnection queues in the U.S. The average time projects spend in queues before being built has also increased. The typical project built in 2022 took five years from the interconnection request to commercial operation compared to three years in 2015 and two years in 2008.[12] These trends do not bode well for our ability to aggressively lengthen our decarbonization runway given our carbon budget.

The good news is that we are seeing more support for CCUS projects globally, with over 500 projects in various stages of development across the CCUS value chain.[13] Additionally, researchers continue to advance cost and carbon impact analysis highlighting its importance in decarbonization scenarios globally. Closer to home, we can be doing more. Stanford researchers have created an action plan for policymakers that concludes that "California's leadership and citizenry are focused on the core objective—a net-zero greenhouse gas (GHG) emissions economy—using the full range of options to help meet this difficult but critical goal."

California cannot afford to limit its flexibility by eliminating technology options or pursuing unfocused or suboptimal policies that may hinder, rather than accelerate, decarbonization. The analysis additionally concludes that the targeted use of CCUS could be one of the largest single contributors to California's decarbonization by 2030, and contribute to deep decarbonization by mid-century as well. We wholeheartedly agree with the core recommendation that "despite a strong foundation of climate policy support, sizeable technical potential to rapidly decarbonize, and natural resources that could enable the state to become a leader in CCUS, it has no CCUS projects that are operational. If CCUS is to play a meaningful role in meeting the state's 2030 emission reduction targets and 2045 carbon neutrality ambitions, California policymakers should consider additional and immediate actions to promote targeted deployment of CCUS today."

The roadmap for California and beyond exists. The climate imperative is real and imminent. The demand is clear. The economics are compelling. The technologies are ready. What remains is the will to align our policy objectives. The energy system is complex and needs coordinated policy approaches that contemplate the entire system. Let's not get bogged down fighting local battles, or letting ideologies and philosophical approaches win the day.

Bloom will continue to be a technology leader, pushing business model and technology boundaries as we have always done, and we call on the policy community to consider the pace of its innovation. Only with a coordinated sense of urgency with emissions reductions as our north star will we meet the challenge before us. Will you join us on this journey?

Electric Transmission Lines are the most costly energy conveyance mechanism
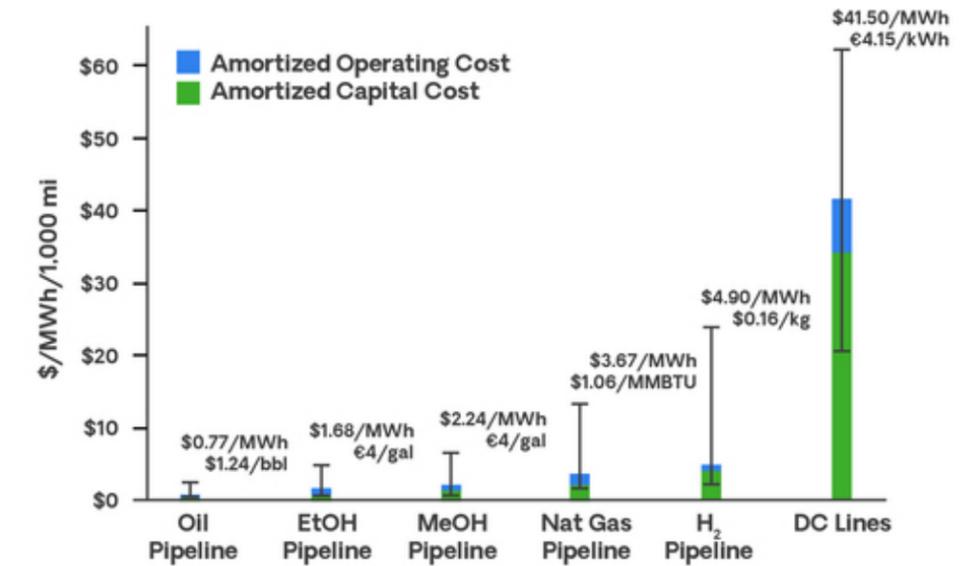
California Is at a Crossroads for CCUS to Contribute to Greenhouse Gas Reduction by Midcentury
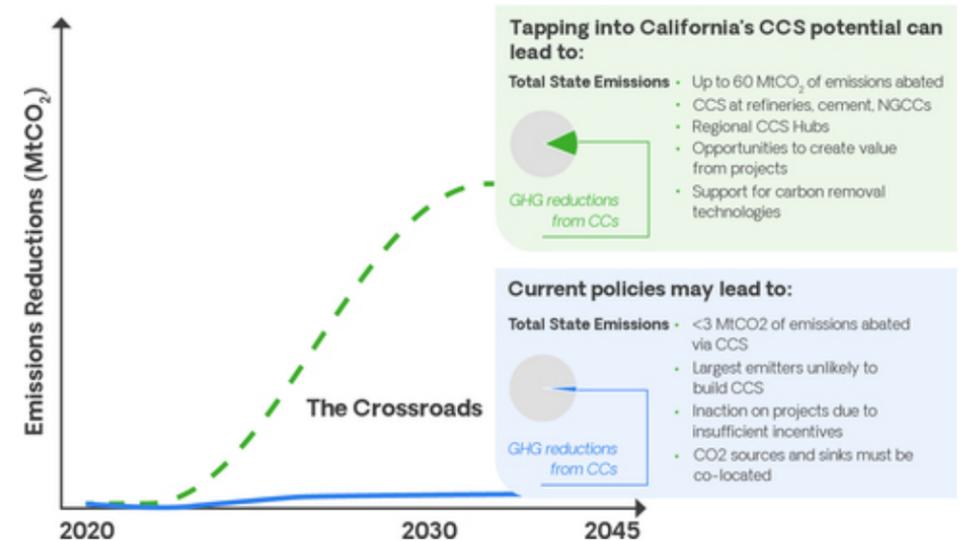
California is at a Crossroads for CCUS in the current policy environment. There will likely be few projects with very limited emission reductions potential. With affirmative policy support, CCUS could play a major role in enabling the state to meet its climate goals by midcentury. *Source: Energy Futures Initiative and Stanford University, 2020.*

[10] https://iea.blob.core.windows.net/assets/ddd078a8-422b-44a9-a668-52355f24133b/Electricity2024-Analysisandforecastto2026.pdf

[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8661478/

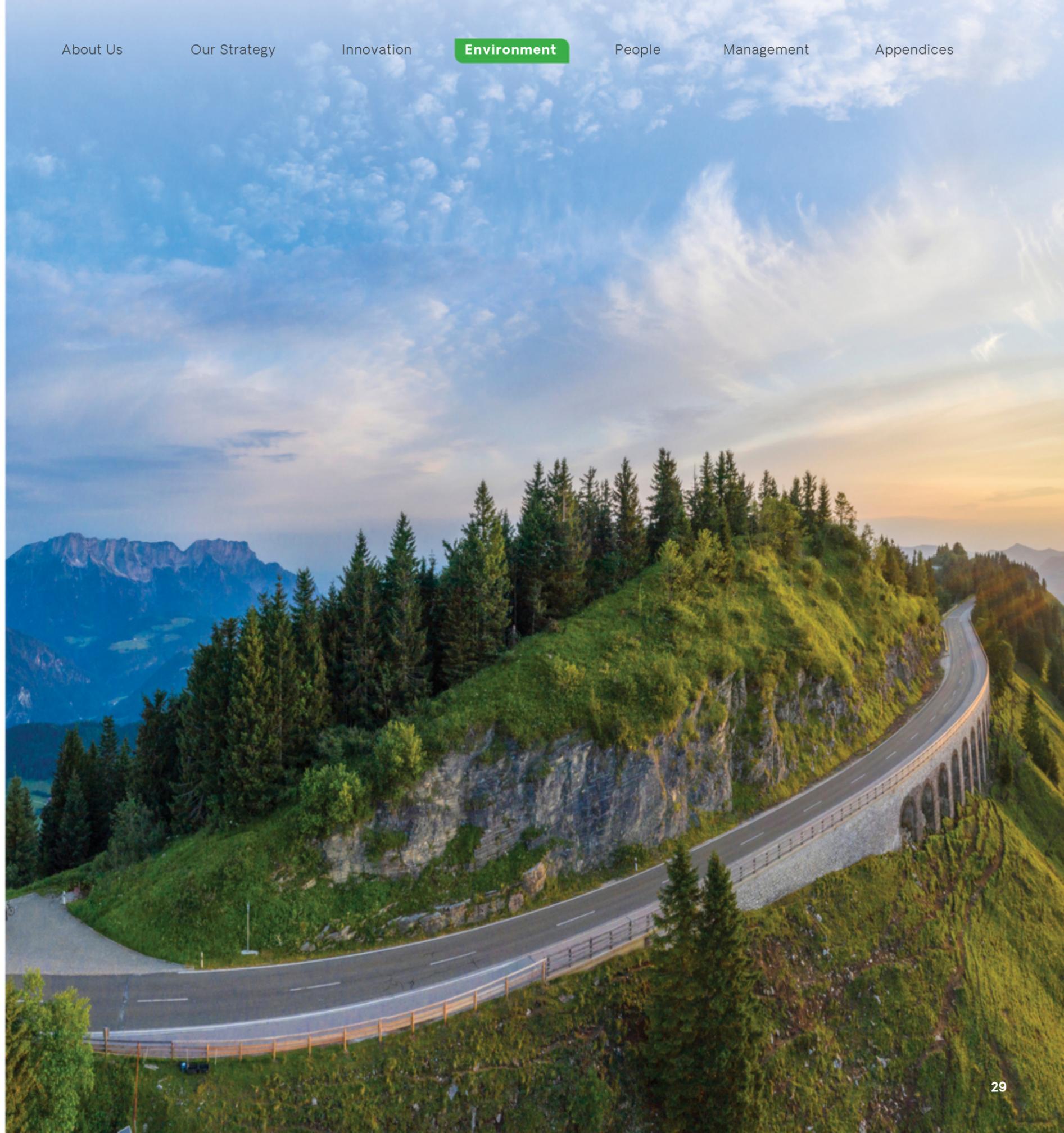[12] https://emp.lbl.gov/news/grid-connection-requests-grow-40-2022-clean

[13] https://www.iea.org/energy-system/carbon-capture-utilisation-and-storage#tracking

Environment

Bloom Energy offers solutions that significantly lower local criteria pollutants and reduce global greenhouse gas emissions. Our products displace less efficient energy forms, including combustion-based power producers and on-site stationary internal combustion engines. We design our products to consume minimal water and operate at a high-power density, which optimizes land use.
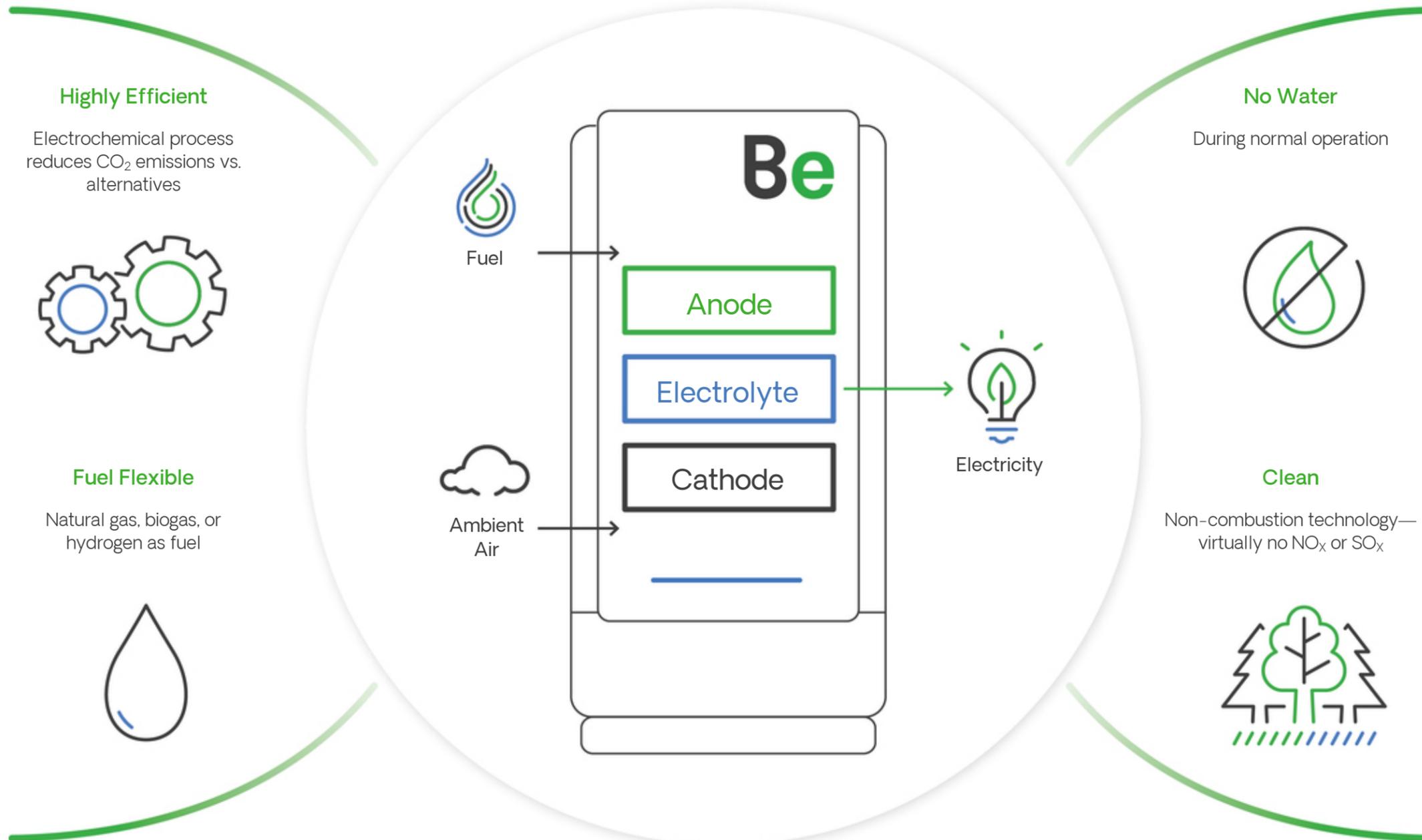
Designed with Sustainability in Mind

No Combustion:
Unlike traditional power generation technologies, Bloom does not require combustion, eliminating harmful criteria pollutants

Highly Efficient

Electrochemical process reduces CO_2 emissions vs. alternatives

Fuel Flexible

Natural gas, biogas, or hydrogen as fuel

Fuel

Anode

Electrolyte

Cathode

Ambient Air

Electricity

No Water

During normal operation

Clean

Non-combustion technology—virtually no NO_X or SO_X

Our commitment to the environment not only impacts the communities where our products operate, but also the communities in which we manufacture our products. Bloom's manufacturing facilities are committed to resource efficiency, responsible design, material management, and recycling.

GHG Emissions

In 2023, Bloom performed and verified its GHG inventory across Scopes 1 and 2. Bloom uses the operational control approach to set our organizational boundary for inventory reporting. Our GHG inventory calculation approach is based on national and international standards from the GHG Protocol Corporate Standard, GHG Protocol Scope 2 and 3 Guidance, and the EPA Center for Corporate Climate Leadership Greenhouse Gas Inventory Guidance. All of our product emissions fall into the Scope 1 category due to the fact that we maintain exclusive operational control of all our fuel cell installations in operation. The remainder of our Scope 1 emissions are from our manufacturing operations, service fleet, and other miscellaneous activity.

Our GHG inventory went through a verification process in which our emissions accounting was formally verified by the consulting firm Ramboll. The verification statement can be found in the appendix. Our total GHG emissions are disclosed in carbon dioxide equivalents (CO_2e).

2023 Global Scope 1 Emissions:

2,207,448

Metric Tonnes CO_2e

Includes emissions from all Bloom Energy Servers in operation globally 99+% and from the company's vehicles, facility operations, and test equipment <1%

2023 Global Scope 2 Emissions:

5,954

Metric Tonnes CO_2e

Market-Based Indirect Emissions from Purchased Energy

8,914

Metric Tonnes CO_2e

Location-Based Indirect Emissions from Purchased Energy

Includes Scope 2 energy consumption from Bloom facilities in California, Delaware, South Korea, and India. Assumptions are made for shared facilities where necessary.

Avoided Emissions

Each Energy Server deployment displaces power supply to our customers from an alternative source, typically centralized power grids. As a result, establishing the full climate impact of our operations requires comparing our emissions to the emissions from displaced grid alternatives. Since Bloom Energy Servers are an efficient distributed energy resource, when a new Bloom Energy Server is brought online, it reduces the amount of power required from energy sources that generate "on the margin," meaning those units that are operating to meet the last unit of energy demand. Since our Energy Servers' carbon intensity is typically lower than the displaced (generally fossil-powered) alternatives, the net impact is measurable emissions reductions.

Ramboll also conducted a review of Bloom's marginal emissions displacement methodology and confirmed that Bloom's approach was developed in accordance with WRI's Guidelines for Quantifying GHG Reductions from Grid Connected Electricity Projects.

2023 Net Emissions from Bloom Projects:

−992,481

Metric Tonnes CO_2e

REGION	PERCENTAGE REDUCTION VS. GRID
USA	18%
Korea	46%
India	56%
Japan	34%
Taiwan	18%
Italy	10%
Global Weighted Average	29%

SPOTLIGHT ON

US Marginal Emission Rates

Bloom's year over year domestic carbon impact relative to displaced grid power has remained steady in this year's avoided emissions analysis despite decreases in average emissions rates due to more renewable deployment. If we look at trends in the most recent EPA eGRID non-baseload values, which are a proxy for marginal emission rates, they have increased or stayed the same in over 70% of the subregions in the United States. Bloom continues to reduce carbon emissions in every subregion in the United States.

We expect to continue to observe this trend in various marginal emissions datasets in large part due to the lack of clean firm power options available to grid operators. Nuclear retirements, underperforming hydro assets, climate driven extreme weather, and intermittent renewables have led to more natural gas utilization, which are often the most flexible and expensive assets available and drive marginal generation.

Certified Gas

Bloom is not only focused on technology innovation, but also market evolution. We have a history of early participation in the environmental markets and that continues with our work to address the environmental, social, and governance profile of conventional fuel. While we bring forward the renewable fuels and clean energy power generation of the future, we intend to use our market position, access to leading customers, and partnerships to drive ongoing evolution of the gas sector.

Reducing methane emissions from oil and gas operations is among the most viable and significant actions we can take in the near-term to help address climate change. Methane is a powerful greenhouse gas and leakage from the oil and gas industry contribute roughly 82 million metric tonnes of methane to global emissions each year. While progress has been made over recent decades to curb methane emissions, 75% of these emissions from oil and gas production can technically be eliminated today, many at no cost.

Achieving methane reductions stemming from the oil and gas sector is the carbon equivalent of replacing 60% of the world's coal-fired power plants with zero-emissions generation.

In 2023, in acknowledgement of the importance of natural gas supply chain responsibility, we continued helping to accelerate the development of a certified natural gas market and advance supply chain responsibility in the sector. We have acquired and retired MiQ + Equitable Origin certificates from the Pennsylvania shale operations of EQT, the largest gas producer in the U.S., on behalf of our domestic customers. We hope our pioneering activity in the space will serve as a model for our customers and other energy sector companies.

Retired certificates allow for more precise reporting of our Scope 3 emissions in upstream category 3 and drives meaningful avoided emissions detailed below.

Scope 3 Avoided Emissions from Certified Gas:

120,000

Metric Tonnes CO$_2$e

Informed by the MiQ certified leak rate of 0.05% for the upstream oil and gas production environment compared to national average leak rates provided by the MiQ-Highwood Index.

The Methane Challenge

Methane is at least **84 times** more potent than carbon dioxide (CO$_2$) on a 20-year time scale

CARBON DIOXIDE

84x
METHANE

75 percent of methane emissions from oil and gas production can be eliminated today

Equivalent to replacing **60 percent** of the world's coal-fired power plants with zero-emissions generation

In 2023 Bloom secured certificates from EQT for its domestic customers, reducing methane impact in the upstream production process

MiQ
Methane Standard

EQUITABLE ORIGIN
EO$_{100}$™ Standard for Responsible Energy Development

What does it mean to source gas responsibly?

Natural gas, whose production has been evaluated across a range of criteria, including:

Environmental Impact

Social Impact

Corporate Governance
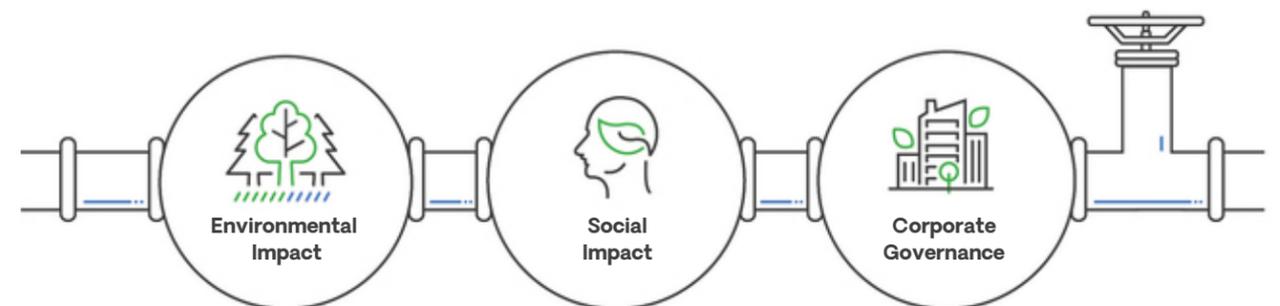
Energy Management

We are focused on energy efficiency in our production and administrative processes, and as we expand our facility footprint, we have designed Bloom equipment into our operations. Where supplementary power is needed, we endeavor to opt in to community choice aggregation programs. Our headquarters building uses Green Start power provided by Silicon Valley Community Energy, and our new Fremont Manufacturing Center has its power delivered through East Bay Community Energy's Bright Choice offering.

2023 Total Energy Consumed (GJ):

118,140 GJ

Includes Scope 2 energy consumption from Bloom facilities in California, Delaware, South Korea, and India. Assumptions are made for shared facilities where necessary.

Product Efficiency

Our product efficiency is tracked closely through our Remote Monitoring and Control Centers (RMCC) in San Jose, California, and Mumbai, India. The RMCC tracks and monitors various operating parameters down to the individual fuel cell stack level. Based on data provided by the RMCC, we repair Energy Servers not performing in accordance with customer warranties and standards.

As our fuel cells age, efficiency decreases, and replacements are made to keep the Energy Server operating appropriately. We understand that product efficiency directly affects GHG emissions. Therefore, we report on average efficiency and stack life of our installed base to highlight our focus on the issue.

Initial lifetime statistics are subject to minor variations as we gather additional data from fuel cells still operating until the entire product vintage is operated beyond the median life. We continuously monitor the performance and health of our fleet. We have ongoing continuous reliability improvement projects in place that implement countermeasures to improve reliability and the life of our fleet. Based on the current performance trajectory, we predict 2023 fleet medium time to refurbishment as 5.5 years.

Weighted Average System Lifetime Efficiency as of EoY 2023

55.86%

Energy Intensity

In order to assess the eco-efficiency of our products, we evaluated the amount of energy required to manufacture our fuel cells in 2023 against the amount of energy produced by them. Manufacturing our fuel cells in 2023 consumed 0.22% of the production capacity of the fuel cells that were brought online last year. This means that our fuel cells produce 455 times the amount of energy that it takes to build them.

Our manufacturing processes use only a fraction of the energy our products are subsequently able to generate, representing an important added societal value from our manufacturing operations. Although it is not a comprehensive life-cycle accounting of the eco-efficiency of our products, it is a metric we use to measure our impact.

Eco-Efficiency of Bloom Energy Server:

Our systems produce

455 X

the amount of power used to manufacture them

Air Quality

Our fuel cells convert fuel into electricity without combustion. When a fuel cell is used for power, it typically displaces a less efficient power source (generally a combustion generator). When compared to these marginal sources, our fuel cells reduce nitrogen and sulfur dioxide by over 99% and other criteria pollutants (volatile organic compounds, carbon monoxide, and particulate matter) significantly.

Avoided Air Pollution Impact

The emission reductions that occurred in the United States in 2023 from the operation of our fuel cells amount to a decrease in approximately 194 days of work lost due to illness, 66 cases of respiratory symptoms, as well as $18.6M–$41.9M in decreased healthcare costs. The health and environmental impacts of combustion-related pollutants are a major focus of the Environmental Protection Agency (EPA) and air quality districts nationwide. Combustion-related emissions tend to disproportionately impact disadvantaged communities due to the increased likelihood of proximity to industrial facilities, including power plants or businesses utilizing large diesel backup systems. Our solution, which can provide up to a 99% reduction of these harmful air pollutants, continues to improve the air quality in these communities. It also provides a model for near-zero criteria pollutant energy generation for policymakers, regulators, and the environmental justice community, which can translate to emission reductions and health benefits today.

Bloom's Energy Servers utilizing natural gas were first certified as meeting stringent California Air Resources Board (CARB) Distributed Generation (DG) standards in 2016. The DG certification program establishes the emission standards that electrical generation technologies must meet to be exempted from local air district permitting requirements. CARB must re-certify the technology covered by the program, including our Energy Servers, every five years. Since our initial certification, Bloom has consistently improved our technology. During the most recent recertification process in 2021, our Energy Servers were certified based on data demonstrating our lowest criteria pollutant emission rates ever. In addition, in 2022 we received Distributed Generation Certification for our product using digester and landfill gas.

NO_x:

2023 Emissions of NO_x from Products (lbs)	9,276
2023 Domestic NO_x Reductions vs. Grid Alternatives (lbs)	**2,450,898**
% Reduction vs. Grid	**99.8%**

SO_2:

2023 Emissions of SO_2 from Products (lbs)	32
2023 SO_2 Reductions vs. Grid Alternatives (lbs)	**704,416**
% Reduction vs. Grid	**100%**

Based on comparison to 2022 EPA eGRID non-baseload emissions rates inclusive of line losses as a proxy for marginal emissions

Water Management

Bloom's 2023 Water Savings:

	BLOOM (GAL/MWH)	UNITED STATES AVERAGE RATES[1] (GAL/MWH)	2023 FLEETWIDE WATER REDUCTIONS (MGAL)[1,2]
Water Consumption	1.02	830	4,815
Water Withdrawal	0	102,000	725,714

[1] Using regional factors from WRI Guidance for Calculating Water Use Embedded in Purchased Electricity for United States average water consumption and withdrawal (https://www.wri.org/research/guidance-calculating-water-use-embedded-purchased-electricity)

[2] Bloom's water reductions were calculated using actual fleetwide energy production in 2023

Bloom reduces water use by

99+%

Water Impacts of Our Energy Server Fleet

Our Energy Servers consume minimal amounts of water when compared to other centralized power generation sources, and only consume water during start-up and/or if a restart is required. In 2023 alone, our fuel cells avoided more than 4.8 billion gallons of water consumption and over 726 billion gallons of water withdrawal by grid electricity sources. Based on data from the Energy Information Administration (EIA), total water withdrawal by U.S. thermoelectric power plants is almost 47.7 trillion gallons annually. The water intensity of U.S. thermoelectric power plants is approximately 11,595 gallons/MWh. This results in approximately 146 Olympic-sized swimming pools of water saved annually for a 1 MW Bloom fuel cell in the United States.

Water Impacts in Our Operations

While the water use at our facilities is minimal (primarily for sanitation and hygiene purposes), we do use a small amount of water as part of our energy server production process. We work with local regulatory bodies to align to required standards for any effluent discharge that might need to occur. This effluent is monitored and tested prior to release. Additionally, we train our employees to follow the Injury and Incident Reporting Protocol, a part of our Injury and Illness Prevention Program, to ensure that strict root cause analysis, remediation, and coordination with local authorities is conducted for any issues that might arise.

25% OF THE GLOBAL POPULATION FACES EXTREMELY HIGH WATER STRESS EACH YEAR

Baseline Water Stress

| Extremely High (>80%) | High (40–80%) | Medium – High (20–40%) | Low – Medium (10–20%) | Low (<10%) | Arid and low water use |
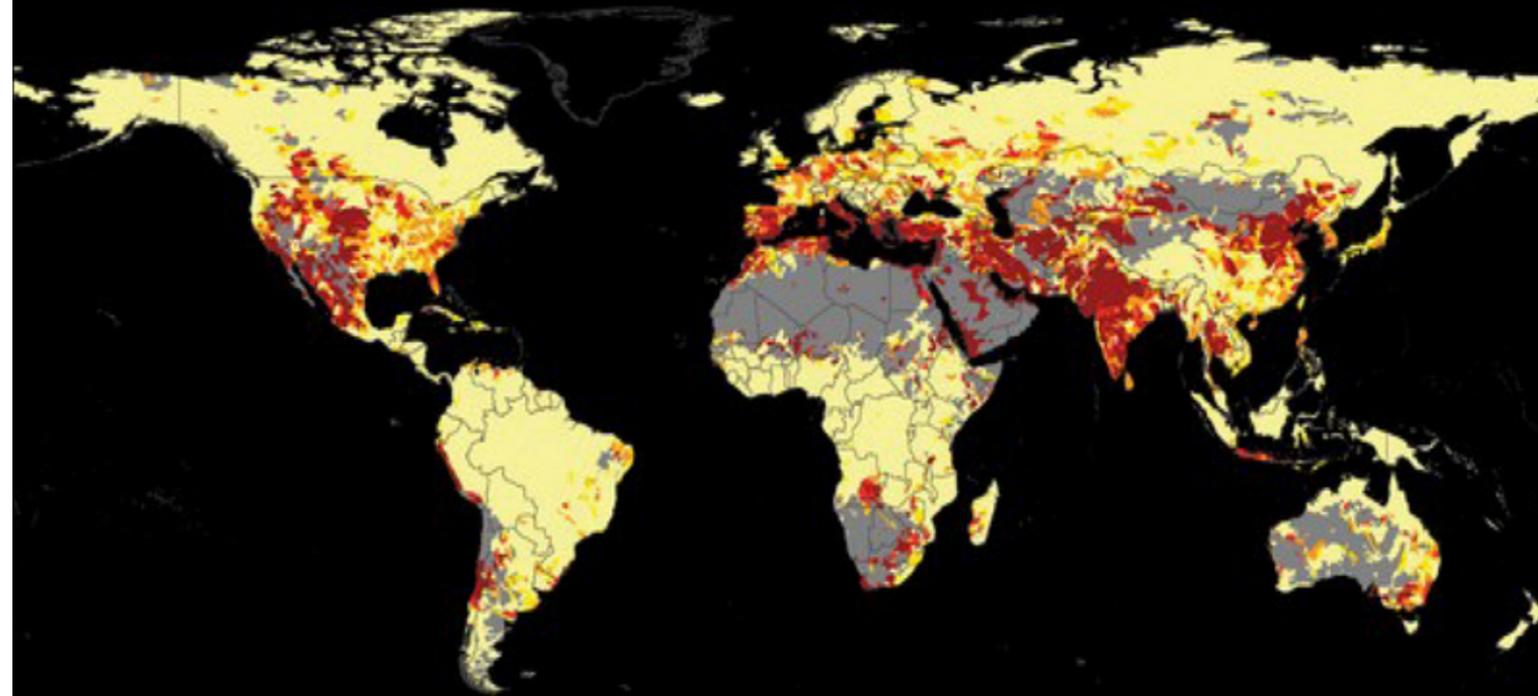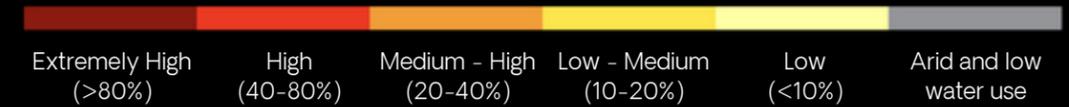
Source: wri.org/aqueduct.
23.06.02

AQUEDUCT   WORLD RESOURCES INSTITUTE

Hazardous Materials and Waste Management Program

Waste Management Program

Bloom Energy endeavors to reduce waste and introduce efficiency wherever possible throughout our operations and in our facilities. Efforts to manage pallets, cardboard, and foam at our Delaware manufacturing facility have led to a Landfill Free Enterprise certification, and we will continue to work to reduce waste and introduce circularity through our product design and sourcing efforts.

Bloom's Waste Management Program is also designed to avoid the generation and disposal of hazardous waste to the extent feasible. The primary means to doing that is management of our desulfurization material and canisters, our largest potential waste stream. This program includes a Hazardous Materials Business Plan (HMBP) document for customers that explains the desulfurization canister removal and material recycling process. EH&S trains Field Service personnel annually on the HMBP document and its contents. Bloom also works to identify opportunities for waste reduction at its manufacturing facilities. Specifically, in 2023, Bloom implemented efforts to reduce its ink waste stream. This effort will not only reduce this waste stream but will also reduce product and disposal costs.

Hazardous Materials Management Program

Bloom Energy's manufacturing facilities contain a variety of chemicals utilized during the fuel cell manufacturing process. Chemical Safety Data Sheets (SDS's) are stored in Bloom's online chemical inventory, which is accessible to all employees. The New Chemical Review process is utilized to ensure our Environmental, Health, and Safety (EH&S) group reviews all new chemicals before they come into a manufacturing facility. In 2023, key employees were given refresher training on the New Chemical Review process. Through Environmental Management System (EMS) Compliance Evaluations, Bloom also identified several opportunities for improvement where chemical management is concerned. In response, the EMS Implementation Team developed guidance documents intended to increase communication and staff awareness.

Desulfurization Recycling Process

Bloom continues to manage our spent desulfurization material as Excluded Recyclable Material. Bloom ensures that our company's desulfurization material generated in the United States is recycled and not transported or disposed of as hazardous waste. It is shipped to our recycling partner, ShoreMet, in Indiana. ShoreMet chemically dissolves the copper metal within that material, which then can be used to manufacture copper compounds, including copper amine carbonate, copper oxide, basics copper carbonate, and copper chloride dehydrate. The recycle and reuse process further promotes end-of-life circularity and ensures that desulfurization material does not become hazardous waste as per the Resource Conservation and Recovery Act.

Product End-of-Life Management & Circularity

Bloom Energy Servers contain an impressive 99% of materials by weight that are recyclable or reusable. The total metric tonnes of end-of-life material increased from 3,028 to 3,559 metric tonnes from 2022 to 2023 due to increased volumes of fuel cell upgrades. After new units generate power for a period, and our Remote Monitoring and Control Center determines there is a need for repair or overhaul, the units return to our manufacturing facility. Our Repair and Overhaul Operations team, located in Newark, Delaware, performs the tasks required to deconstruct the units and build them back up to be redeployed into service. The materials that cannot be reused are sent to recycle streams, where they are repurposed in other industries. As a result, out of an approximately 25,000-pound Bloom Energy Server, the weight of components that go to the landfill without a recycling or refurbishment stream comprises approximately 250 pounds, or less than approximately 1% of the total server weight. Typical components that go directly to landfill without refurbishment or recycling are sealants, adhesives, gaskets, filters, tape, and non-recyclable plastics.

2023 Percentage by Weight of Products Sold That Are Recyclable or Reusable

99%

Estimated Total Weight of End-of-Life Material Recovered in 2023

3,559

metric tonnes

Product Safety

Bloom Energy aspires to the highest and strictest standards of product safety. These standards cover user, operator, and product safety across the design, manufacturing, installation, and operations of our fuel cells and electrolyzers.

As we grow our sales internationally, we work to gain safety certifications across the various countries of operation. Where relevant, we also certify to relevant building and electrical codes to ensure the safety of our equipment in relation to the properties surrounding the installation.

This allows us to continuously improve on our high standards for safety and ensures that each new evolution of our product is built and sourced with these specifications in mind. In the United States, we work with UL to inspect and certify our product and manufacturing sites quarterly. In Europe, we ensure that our fuel cell products and installation processes meet the required standards for Registration, Evaluation and Authorization of Chemicals (REACH) compliance, the Electromagnetic Compatibility (EMC) Directives, and the Pressure Directive (PED) and can be imported with the CE mark. Similarly, for Korea, we ensure that we follow compliance requirements as outlined by the Korean Occupational Safety and Health Agency (KOSHA) and Korea Electrical Safety Corporation (KESCO).
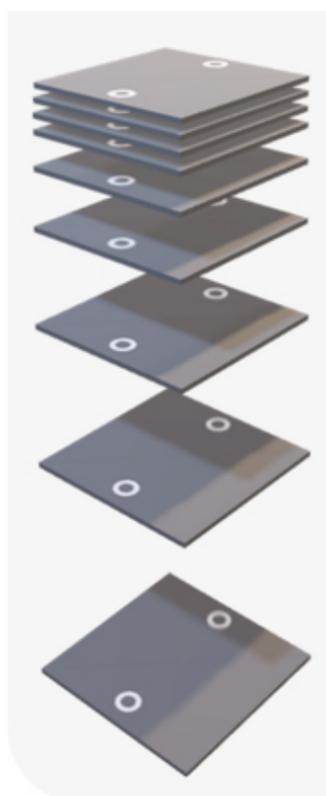
HIGHLIGHT:

Interconnects

The aggressive pursuit of cost-down and profitability drives the goal that all components are re-used before they are recycled. Not only does this bring down costs, it is preferred over recycling as there are energy and transportation involved in recycling metals. Of the many components the team has developed re-use procedures for, the interconnect plays the most pivotal role in driving cost savings. The interconnect is a metal plate upon which the fuel cell sits, with the function to ensure fuel (anode) and air (cathode) flow across the fuel cell on opposite sides. These layers are stacked within our fuel cell units and are the highest quantity of any part within our system.

At end of life, these parts are separated, cleaned, inspected, and then re-used into our Repair & Overhaul units. Bloom has driven the re-use of these plates from zero percent to now over 75% in less than two years, offering a significant cost reduction without sacrificing life or electricity output. The efforts of the team on this project have improved the economics of the Service business, while saving energy and emissions that are part of any metals recycling stream. This combination delivers value to both our shareholders and our environment.

People

We strive to maintain an inclusive, diverse, and safe workplace, with opportunities for our employees to grow and develop in their careers. We hire and develop talent with a passion toward achieving our mission supported by strong compensation, benefits, and health and wellness programs. Our mission is to make clean, reliable energy affordable for everyone in the world because we know that it allows our communities to be safe, prosperous, healthy, and resilient. Community impact is what motivates us every day to provide the highest quality products, solutions, and employee experience possible.

Living Our Purpose

Now, more than ever before, people are looking for purposeful and fulfilling work. At Bloom, we recognize the importance of communicating our mission clearly, living our core values, and connecting our employees to our purpose. This means addressing climate change and its impacts, and changing the future of energy by leading the world's energy transition and transforming the way we power the world, which underscores the important role our employees have in advancing our mission, making the world a better place, and doing the right thing for the greater good of our society and our stakeholders.

Click here to watch the video.

Taking Care of Our Employees

Our achievements are possible thanks to our global workforce of skilled and diverse workers. We are dedicated to creating a workplace, everywhere in the world, where our employees feel valued and engaged in meaningful work. Just as our people support and advance our mission, we aim to foster a culture of innovation, respect, collaboration, and transparency that enables our employees to thrive and grow their connection to Bloom's purpose. To attract and build a strong, diverse talent pipeline, we partner with local communities, universities, and industry groups. We strive to maintain a safe, inclusive, and engaging workplace, with opportunities for our employees to grow in their careers, supported by strong compensation, benefits, and health and wellness programs.

At Bloom, it is of utmost importance that we communicate our mission clearly, living our core values, and connecting our employees to our purpose: to make clean, reliable energy affordable for everyone in the world. Building solutions to address decarbonization and energy security requires us to have an employee base that is committed to working in an innovative and collaborative manner and requires management to create a safe, welcoming environment with clear communication of priorities and company direction.

Talent Acquisition and Development

To attract, retain, and diversify our exceptionally talented workforce, we continue to evolve our hiring strategies, track our progress, and hold ourselves accountable to advancing global diversity. These efforts are led by our Human Resources department and overseen by the Board of Directors. An important part of our talent acquisition strategy centers on recruiting candidates from underrepresented groups through targeted advertising, and localized events.

We have enhanced our talent program through the introduction of a comprehensive Talent Management System designed to link performance and contribution to business results, enabling each employee to make a direct connection between their contributions and the success of Bloom. This comprehensive program includes goal setting, monthly check-ins, feedback solicitation, self-assessments and annual contribution assessment conversations. Our Talent Management System provides employees with the resources required to achieve their goals and engage in meaningful feedback discussions with their managers, leading to development, exposure to new experiences, and real-time learnings.

We have also invested in strengthening management capabilities. In 2023, we continued our Effective Interviewing course for hiring managers and interviewers, and provided a series of global employee learning sessions to support our employees' ability to effectively engage with their managers.

At Bloom, we invest in our employees' progress. This past year we launched Bloom Energy University, an enterprise learning system designed to empower our people, increase their career advancement, and ensure that they're engaged and equipped to help Bloom build a cleaner, more energy-abundant world. In 2023, we have taken 299 employees through a management development program and 215 individual contributors through a series of online trainings. We also held regular Be Inspired sessions to help with business literacy and technology learnings.

Promoting Inclusion and Diversity

Since our founding, we have been committed to advancing inclusion and diversity across our organization. We endeavor to foster a work environment that values each person and contribution while promoting diversity of thought, positive engagement, and productivity. We recognize that having a multifaceted team—with a wide array of knowledge, skills, life and professional experience, and viewpoints—fuels our innovation and growth. One of our greatest strengths is the diversity of our employees, and we believe diverse leaders serve as role models for our inclusive workforce.

We continuously evolve our hiring strategies, track our progress, and hold ourselves accountable to advancing global diversity. We seek to hire employees from a broad pool of talent with diverse backgrounds, perspectives, and abilities, and we believe diverse leaders serve as role models for our inclusive workforce. Our Effective Interviewing course for hiring managers and interviewers covers unconscious bias.

Our continued engagement with organizations that partner with diverse communities have been essential to our efforts to increase women, veteran, and minority representation in our workforce. At the end of 2023, ethnic minorities represented 66% of the Bloom U.S. population and 43% of the leadership population (Directors and above). Bloom Energy Women Leaders (BEWL) is an employee group aiming to create and encourage a Bloom culture where women leaders thrive. BEWL is open to all employees and is comprised of members from all levels of leadership. Women at Bloom represent 25% of the population, and BEWL is one example of the efforts the company is engaging in to increase the percentage of women in leadership positions (15.4%). Strong cross-gender participation in BEWL activities are an indicator of the potential success of the program and focus on the initiative from stakeholders across the organization.

We partner with several veteran search firms to identify talent leaving the military. At the end of 2023, 7% of our workforce has a military background and rises to 33% in the Service organization. In Delaware, we have worked with the Dover Air Force base and the Delaware National Guard for hiring events. Bloom was awarded the Warrior Friendly Business award for 2023 by the Delaware National Guard. Our continued engagement with organizations that work with diverse communities has been vital to our efforts to increase women and minority representation in our workforce. Our "Careers at Bloom Silicon Valley" campaign targets recruiting diverse talent from underserved communities for hourly manufacturing roles. To promote inclusivity, we advertise our jobs in multiple languages and participate in community job fairs giving equal access to opportunities.

Diversity Metrics

FEMALE EMPLOYEES	2023
All Employees	25%
Directors and above	15%

ETHNICALLY DIVERSE	2023
All Employees (U.S. only)	66%
Directors and above	43%

Compensation and Benefits

Our talent strategy is integral to our business success, and we design competitive and innovative compensation and benefits programs to help meet the needs of our employees. In addition to salaries, these programs (which vary by country/region) include annual bonuses, stock awards, an employee stock purchase plan, a 401(k) plan, healthcare and insurance benefits, health savings and flexible spending accounts, paid time off, parental leave, flexible work schedules, an extensive mental health program, and a fitness center. Our supplemental U.S. benefits programs are designed to support as many employees as possible at all levels of the organization. Our financial wellness program has a focus on our manufacturing employees, and our mental health support program is eligible to all employees, whether enrolled in our medical plans or not. One hundred percent of our employees (men and women) are eligible for parental leave. In 2023, we also introduced tuition reimbursement and family-forming benefits. In addition to our broad-based equity award programs, we have used targeted equity grants to facilitate retention of critical talent with specialized skills and experience.

We strive to maintain our focus on gender pay equity. At all levels and functions, the difference in pay between men and women is 8%. However, when looking at the average salary in pay levels at the end of 2023, women were paid 2% above the midpoint of their pay level while men were paid 3% above the midpoint of their pay level.

Colin Powell—Bloom Energy Innovation Fellowship

In line with our mission, in 2023 we also launched the inaugural Colin Powell—Bloom Energy Innovation Fellowship . We partnered with City College of New York Colin Powell School for Civic and Global Leadership to identify a dozen summer interns. These are students from underrepresented minorities, with the majority of them being the first in their family to attend college. We also have partnerships with a number of historically Black colleges and universities, including Delaware State University and Howard University.

Employee Engagement

To address our 2022 employee engagement survey finding of a need for enhanced opportunities for engagement with leaders, we introduced our very successful "BE Inspired" series, providing additional opportunities for our employees to learn about our products and strategy from our leadership team. We are committed to continuously checking in with our employees through surveys and events to encourage open dialogue, understand employee concerns, and ensure that we maintain a positive and supportive environment for all who work at Bloom. We are dedicated to developing and fostering an inclusive community at our workplaces.

In addition, sites across the world have a cadence of company or employee sponsored events to celebrate cultural milestones. The BE Green Team is a voluntary internal group of Bloom employees across many departments and office locations. Its mission is to engage Bloom Energy employees in sustainability-driven and community-oriented initiatives as well as to further promote operations and business practices grounded in sustainable principles. Our Green Team chapters conducted multiple events in 2023, including a clean-up of the Don Edwards San Francisco Bay National Wildlife refuge next to our Fremont manufacturing facility, a sapling plantation drive at our Bangalore offices, and a beach cleanup event in Mumbai.

With

77%

overall participation across our employee base, we determined that

86%

of our employees strongly believed in the company mission, with an overall

76%

stating that they were proud to work for our company.

Employee Health, Safety, and Training

In 2023, the EH&S team worked closely with our internal stakeholders and customers to develop and implement a strategic plan addressing both short- and long-term program improvement opportunities. The foundation of the strategic plan is built on four primary pillars—Compliance, Culture, Risk, and Competency.

Compliance

During 2023, efforts were made to update compliance standards; to develop complementary training programs; to provide training to employees, visitors, and contractors; and to periodically conduct self-assessments against regulatory standards and company policies. During 2024, further improvements are planned as we begin the process of developing and implementing an ISO-informed Safety Management System.

Culture

We feel strongly that the key to our success in driving a zero-incident culture is our people. To that end, we introduced a set of Cardinal Safety Rules and have trained front-line supervision and safety committees on the methods of hazard recognition; we've introduced a Safety Observation reporting tool for employees to use in reporting unsafe conditions or acts (anonymously, should they desire), which is complemented by Tool Box Talks designed to provide simple, easy to interpret information about risk; we've also introduced a Safety Observation metric for ongoing operations reviews. Possibly most importantly, we've increased the use of positive reinforcement and recognition where associate contributions add to our objectives, and we've reintroduced the coaching and disciplinary action approach where actions or behaviors are not in accordance with our cultural expectations.

Risk

The primary driver behind most workplace incidents is recognition and management of risk. During 2023, we expended significant time and resources revitalizing existing programs, including the Job Hazard Analysis (JHA), the Supervisor Hazard Recognition, and internal/external assessments (insurance). To ensure that every effort is made to mitigate risk, each leader on the operations team now tracks and reports monthly on the three biggest risks in their respective area of responsibility. The operations leadership team then ensures that identified risks are addressed and driven to closure.

Competency

During the early part of 2023, in the U.S., we realigned existing EH&S resources to ensure better integration with the operations teams they support and assigned EH&S staff discrete responsibilities for EH&S-related programs and tools (assessments, training, reporting/tools, etc.). While still reporting to EH&S leadership, those staff members are now also dotted-line reporting to the operations leadership teams they support. This brings EH&S more fully into operations teams as a sitting team member; increases the frequency of EH&S-related topical reviews, and creates an organizational structure where EH&S is now an integral part of each operations team.

Early in 2023, the EH&S team also spent a great deal of time digging deeper into safety incident data collected over the past three years. In evaluating the data, the event types and potential causes were highlighted. Weakness in data collection, root cause analysis, and follow up were also addressed to ensure improved data quality going forward. In evaluating the data, it was clear that soft tissue related injuries/illnesses still had the largest impact on our employee population and that injuries most frequently occurred within the first 12 months of employment. To address the risk, Bloom employed the services of a summer intern to help develop and introduce a simple ergonomics tool that can be used by any operator in our organization easily and quickly. The tool provides guidance on what technicians can do to make a difference themselves, and details how to initiate a request for an engineering review. The new hire training program was also enhanced to raise awareness of ergonomic hazards, and the training provided to new hires in areas of higher ergonomic risk was enhanced to ensure that new employees going to work in an area where ergonomic risks are present are provided extra training and certification prior to being released to work independently.

While 2023 presented a number of challenges from a safety perspective, it also marks a new point in our journey to zero-incidents. While we saw a COVID decline, we quickly pivoted to managing air quality risk from wildfires hundreds of miles away, reinforcing the need to improve and adapt our capabilities to manage emerging external risks. Despite all of the internal and external factors impacting people and safety, Bloom saw a significant turn in injury rates during the final third of the year. Our focused continuous improvement efforts and ability to adapt in the face of evolving external risk translated to a 10% decline in Bloom's Year-over-Year Total Reportable Incident Rate (TRIR). Key additional training campaigns in 2023 included NFPA 70E, Line of Fire, Fork Lift and Spotter, Electric Pallet Jack and Tugger, and Control of Hazardous Energies (Lock Out/Tag Out).

Building Resilient Communities

Bloom Energy's goal as a trusted and valued corporate neighbor extends far beyond the manufacturing and marketing of its proven solid oxide technology platform to improving lives and sustaining the communities we touch. Bloom works to accomplish this by inspiring collaborative, forward-thinking approaches to addressing community and social challenges. Whether this is through raising funds for local agencies, leveraging our engineering talent in innovative ways, or planting trees and vegetable gardens, our philanthropic activities seek to create meaningful and immediate impact.

Stars and Strides

The Stars and Strides community event has been a cornerstone of Bloom's community engagement in San Jose and Delaware and has allowed us to build relationships with community stakeholders. In 2023, Bloom Energy dedicated its physical strength, its intellectual capacity, and its emotional support to uplifting the community through the Stars and Strides event. In 2023, Bloom invested $100,000 to support the race and fundraising efforts of Valley Health Foundation, which operates three county hospitals and nineteen health clinics across the South Bay Area. In the third year of Bloom's sponsorship, the 3rd Annual Stars and Strides Charity Run 2023 in San Jose raised $337,000 for Valley Medical Foundation, bringing the three-year total raised to $917,000.

In Delaware, the 2nd Annual Stars and Strides Delaware Community Walk/Run 2023, Bloom helped raise over $20,000 for the Delaware National Guard Youth Foundation, Stop Soldier Suicide, and Food Bank of Delaware—charities devoted to military and veterans' issues in Delaware.

Raising Awareness in Low-Income Communities

Energize Delaware is a strategic partnership with the Delaware Sustainability Energy Utility—a nonprofit 501(c) (3) organization created by the State of Delaware to bring technology to underserved communities as a part of the state's efforts to raise awareness and access to clean and renewable energy. In 2023, Bloom continued its partnership with Energize Delaware and to date has invested $50,000 over a 2-year period and intends to invest another $25,000 in 2024 for a total of $75,000. The investment will help:

1. Provide cost-saving energy for low- and moderate-income communities

2. Align energy efficient homes with healthy and safe homes

3. Improve energy efficiency for small businesses, community-based organizations, and local nonprofits in communities of need

4. Create access to clean, renewable energy for low- and moderate-income communities

5. Build pathways for education and training of a diverse clean energy and energy efficiency workforce for underserved communities

Creating Pathways to Clean Tech Careers

Bloom employees understand that jobs involving science, technology, engineering, and math (STEM) are among the fastest growing careers. Bloom Energy proudly supports STEM and Advanced Manufacturing programs that seek to excite, engage, and empower students in grades K-12, with a specific focus on under-represented minorities and girls, to pursue STEM careers.

Bloom is excited about its investment of employee time and $10,000 to the Delaware Foundation on Science and Math Education (DSFME). In 2023, our employees volunteered more than 120 hours, by serving on the board, leading work on various task forces, and participating in events and activities. This investment significantly expanded DFSME's ability to create an Energy, Watershed, Environment, and Climate Change (EWECC) task force, raise teacher and business awareness of the role STEM education plays in these crucial areas, and draw students into activities that challenge them to think about how they impact the environment and how they might contribute to a sustainable future.

In addition, during the summer of 2023, Bloom Energy employees volunteered at the Forum for the Advancement of Minority Engineers (FAME) to raise awareness about clean energy technology, potential career opportunities, the importance of human capital, and the pathways to careers at companies like Bloom. FAME's mission is to prepare and motivate students in grades K-12, with a specific focus on under-represented minorities and girls, to enter college and complete a degree in engineering or other stem related fields of study or seek opportunities in advance manufacturing.

Further, Bloom has established close relationships with the state's only community college, Delaware Technical Community College, and has established a Bloom Energy Endowment Fund, an annual scholarship that provides opportunities at the college within the areas of manufacturing and engineering. Additionally, Bloom Energy has established an memorandum of understanding with the University of Delaware to focus on research and engagement across the university.

The Fight for Equity and Justice

Bloom Energy, in partnership with United Way of Delaware, believes equity is everyone's responsibility. At the heart of United Way of Delaware's efforts for equity and justice is the Delaware Racial Justice Collaborative (DRJC). Bloom played a vital role as a member of DRJC and invested to support and empower the next generation of leaders through Delaware's first Black Student Summit. The goal of the collaborative is to end systemic racism in Delaware. The DRJC funded project fights for racial equity and social justice reform, by advocating against policies that limit our black, brown, and minority communities and promoting the advancement of minorities, and provides education, resources, and support to people of color all over Delaware.

By partnering with Do More 24 Delaware (DM24), Bloom's community efforts were linked to one of the most prominent fundraising events in the state and were able to fund incentive awards that motivate nonprofits to develop creative ways to connect with donors. United Way raised over $2.6 million in one day, and Bloom's $10,000 investment supported the Pursuit of Equity Incentive that was awarded to twenty (20) nonprofits.

Ten Years in Delaware

This year Bloom celebrated the 10th anniversary of its Newark Manufacturing and Assembly Center. We've grown from one employee in 2012 to more than 750 at the start of 2023. Our employees successfully delivered our 15,000th Energy Server™, the solid oxide fuel cell equipment that has been the centerpiece of our commitment to making clean, reliable electricity affordable to all.

We spent 2023 talking about the work being done in Delaware and the colleagues who make it happen. We also articulated our economic impact on the state. We invested $40.5 million to build a plant devoted to growing the world's clean energy economy, and launched our first assembly line in October 2013. We've made additional improvements to the site since then, and now run two shifts to make fuel cells and electrolyzers. Bloom's ongoing operations have created a total economic impact of $97 million to the Delaware economy, supporting employment and nearly $4 million in annual tax revenue.

The percentage of our workers who are state residents—81%—is higher than the state average. These are well-paying jobs, with strong potential for career growth. Indeed, several of our first employees now lead aspects of our Delaware production. We invest $6,000 per worker in new employee training, and $2,500 per worker annually in ongoing professional development. Companies in the U.S. and around the world have taken note of what we build in Delaware. For all our expansion, however, Bloom has remained deeply rooted in the state and local community. We have developed close relationships with the University of Delaware, which is just across the street, as well as Delaware State University and Delaware Technical Community College, supporting their educational efforts and providing employment opportunities. One of our senior managers sits on the board of directors of the Delaware Foundation on Science and Math Education. Since 2021 alone, Bloom has contributed more than $390,000 to economic development efforts, supporting veterans and bringing energy to underserved communities. Bloom Energy will continue to support Delaware's economy and provide career growth for its workers.

Supporting a Just Transition

Bloom Energy's Environmental Justice Framework

Internal Education   Outreach   Policy   Partnership

Bloom firmly believes that authentic relationships, trust, communication, and allyship are core to any Environmental Justice strategy and a "Just Transition."

Environmental Justice and a "Just Transition" are core to Bloom's mission "to make clean, reliable energy affordable for everyone in the world."

The health and environmental impacts of combustion-related pollutants are a major focus of the Environmental Protection Agency (EPA) and air quality districts nationwide. These impacts tend to disproportionately impact disadvantaged communities due to the increased likelihood of proximity to industrial facilities, including power plants or businesses utilizing large diesel backup systems. Where deployed in such communities, our near-zero and zero solutions displace these combustion sources, translating to significant reductions in harmful criteria air pollutants and improved air quality. As such, our products and their penetration of the market are core to our Environmental Justice strategy.

Bloom also has a framework for engaging on Environmental Justice, which includes: (1) Internal Education, (2) Outreach, (3) Policy, and (4) Partnerships. Internal education is led by our Policy Team. Outreach includes interacting with and educating stakeholders. Bloom's policy work includes engaging with Environmental Justice stakeholders and community groups for the benefit of policy that would benefit Bloom (e.g., Infrastructure Investment and Jobs Act, Inflation Reduction Act), but also for the benefit of policy that would impact broader communities and markets.

Finally, Bloom is working to develop partnerships in the various communities in which it operates, or hopes to operate; relationships it hopes will benefit the broader objectives of all parties, including influencing ideal outcomes for workers, community members, businesses, and local governments that have been impacted negatively by the combustion of fossil fuels.

Collaboration and Community Engagement in Action

The Mid-Atlantic Clean Hydrogen Hub (or MACH2™) supports the production, processing, delivery, storage, and end use of clean hydrogen throughout Southeastern PA, Southern NJ, and Delaware, leveraging union labor. It will help fuel a national clean hydrogen network that will contribute substantially to decarbonizing multiple sectors of the economy while achieving environmental justice objectives that will especially benefit disadvantaged communities.
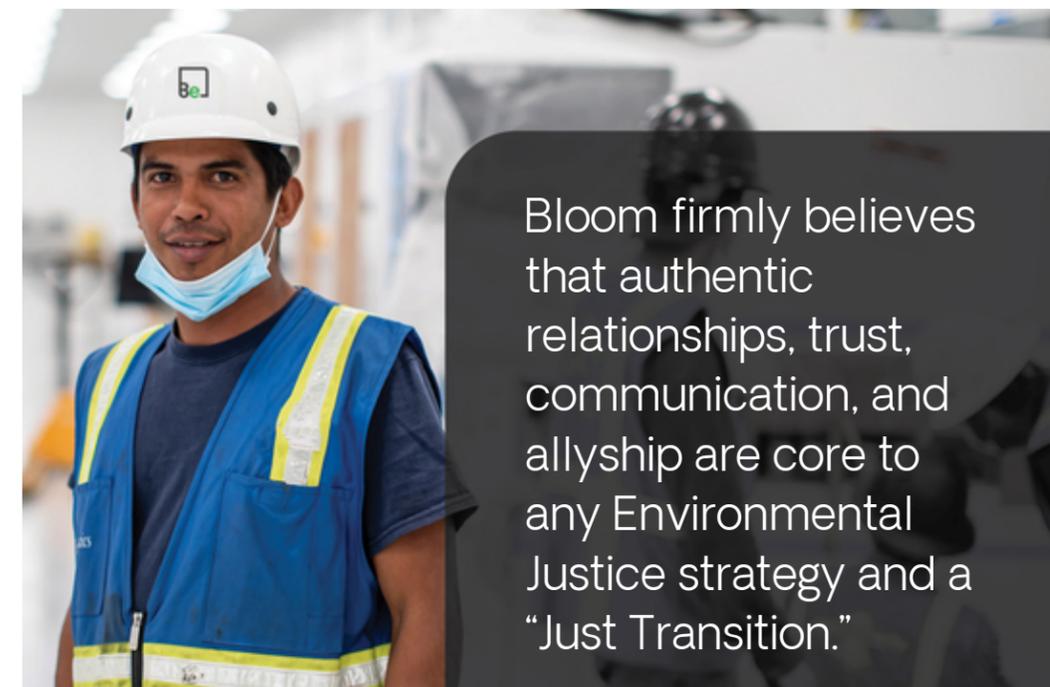
MACH2 Goals:

1. Generate clean and predominantly zero-emission green and pink hydrogen to fuel the local energy economy while mitigating emissions.

2. Reuse and revitalize significant existing pipeline infrastructure in a formerly industrialized and still densely populated region.

3. Create and retain more than 20,000 well-paying jobs, including union jobs, and generate a new talent pipeline in the clean energy sector.

4. Provide economic opportunity and health improvements that will directly benefit disadvantaged communities in line with President Biden's Justice40 Initiative.

Bloom Energy has been an anchor partner to ensure effective alignment with community needs and emerging environmental justice concerns that affect daily lives. In December 2023, Bloom was part of the alliance's effort to leverage the clean energy transition to create opportunities in disadvantaged communities through outreach and workforce development initiatives engaging diverse populations.

Management

We continue the evolution of our board oversight and management processes to more fully and formally incorporate ESG data and analysis into our strategy development, risk management, and operations. Our sustainability governance structure involves numerous participants engaging in information sharing and ESG decision-making, capitalizing on the depth and breadth of expertise throughout the company.

ESG Management and Oversight

Board of Directors
- Approves company strategy, including ESG components
- Provides strategic guidance on ESG matters relevant to the company's business

Information and recommendations ↑

Nominating, Governance & Public Policy Committee
- Oversees and makes recommendations to the board on governance and sustainability matters
- Oversees all ESG matters
- Provides guidance on significant social and political trends, legislative proposals and regulatory developments, and energy and environmental policy

Audit Committee
- Oversees the policies and processes established by management to assess, monitor, manage, and control the company's material risks

Compensation and Organizational Development Committee
- Oversees all issues pertaining to human capital management, organizational development goals, and programs including leadership development, talent assessments, and diversity and inclusion initiatives and objectives
- Responsible for executive compensation and any pay metrics tied to ESG performance

Information and recommendations ↑

CEO
- Information on ESG programs, goals, and metrics, and the identification, assessment, monitoring, and management of ESG risks
- Information on processes for ESG risk identification, assessment, monitoring, and management
- Approves ESG goals and positioning
- Pushes mandates internally
- Information on status of compliance programs
- Reporting on culture, working environment, talent composition, social, or other issues impacting the workforce

↑

ESG Committee

EVP & CFO	EVP & Chief Commercial Officer	SVP & CTO	EVP & Chief People Officer	EVP & General Counsel	EVP & COO	Sr. Managing Director Intl BD	SVP Government Affairs and Public Policy	SVP Engineering	SVP Global Services

- Responsible for setting ESG priorities and objectives

Senior Director, Sustainability
- Owns voluntary execution
- Leads public disclosure activities

Senior Director, Legal, Compliance and Ethics
- Owns enterprise risk management
- Leads development of our enterprise risk management system

Vice President, Environment and Regulatory Law
- Owns compliance execution
- Leads development and implementation of internal management systems

Cross-Functional ESG Working Group
- Department leaders deputized by ESG Committee to execute programs
- Responsible to inform and produce relevant positioning, programs, policies, procedures, goals, or reporting as directed

Board Oversight of ESG

The Board, both as a whole and through its independent committees, oversees our strategy, ESG efforts, and risk management processes. All Board committees have active oversight of one or more key ESG components.

The Nominating, Governance & Public Policy Committee (the "Nominating Committee") has oversight of ESG matters in general in recognition of their relevance to our business. The Audit Committee, with its oversight of risk management processes and financial matters, and the Compensation and Organizational Development Committee (the "Compensation Committee"), which oversees human capital matters (including inclusion and diversity), shares relevant information and analysis with the Nominating Committee. The full Board takes the work of these committees into account in considering and providing guidance on our strategy and objectives for the the short, medium, and long-term, including on climate and other sustainability-related strategy and objectives. Management regularly provides the Nominating Committee with background on emerging trends, evolving external reporting frameworks, and the importance of ESG to the business.

The ESG Committee, which consists of cross-functional leaders from across the company, is responsible for setting ESG priorities and objectives, approving strategic initiatives, and assigning responsibility for the management of emerging issues to leaders across the organization. The Committee meets regularly and is responsible for sharing updates with the CEO and the Board.

Environmental Management System

Bloom Energy continued to implement its ISO-informed Environmental Management System (EMS) in 2023. Five new Objectives and Action Plans were developed based on risk ranking of aspects and/or company priorities. In addition to creating and completing Objectives and Action Plans, Bloom also completed an EMS Audit and Compliance Evaluations at several manufacturing facilities. No "major" findings were identified during the EMS Audit or Compliance Evaluations. The year wrapped up with the annual Management Review.

Based on recommendations that came out of the 2022 Management Review process, Bloom expanded the scope of its EMS to include operations in India and Korea, as well as all customer installations across the U.S. and internationally. Two 2023 Objectives and Action Plans were related to this scope expansion effort. Another Objective and Action Plan included working with the Sustainability team to develop a formal procedure for collecting ESG metrics. As part of this Objective and Action Plan, all metric owners were identified and trained on the newly developed procedure. This is a process improvement that will ensure a smoother and more robust data collection process in future years.

Highlights for the year included identifying waste reduction opportunities and increasing EMS program awareness. During the EMS Audit, a need for further communication and awareness of the EMS program at the assembly technician level was identified. Members of the Implementation Team quickly developed content and materials for communication on the EMS program and the Environmental Policy. These materials were delivered through existing channels like daily ToolBox Talks.

Next year, Bloom will develop new Environmental Objectives and Action Plans. The new Objectives will be based on a reassessment of activities, priorities, and risk. Lastly, the EMS team will execute additional EMS Audits and internal Compliance Evaluations at select facilities. Our Cross-Functional Environmental Steering Committee will continue to provide guidance and support along the way.

500

new hires and other employees took EMS Awareness training in 2023, not including the large number of manufacturing staff who also reviewed the ToolBox Talk EMS Program and Environmental Policy overview.

Environmental Management System Process

Responsible Sourcing and Supply Chain Management

Our supply chain is structured so that we work with high-quality suppliers that support various industries, including automotive, semiconductor, and other traditional manufacturing organizations. Manufacturing a fuel cell system requires varied supplier relationships to source rare earth elements, precious metals, scarce alloys, and industrial commodities. In addition, we have a supplier diversification strategy that supports business continuity and are working to optimize logistics routes between sourcing partners and manufacturing locations.

We have also established an internal cross-functional Sourcing Council dedicated to developing supplier responsibility standards and institutionalizing supplier screening. In order to manage risks inherent in a global supply chain practice, we require all suppliers to adhere to the standards set out in our Global Business Partner Standards Policy, which includes specific guidance on supplier-related anti-corruption practices, human rights, labor laws, environmental measures, and more.

Business partners are required to comply with the Global Business Partner Standards and all applicable laws in the countries in which they operate. In addition, we perform risk-based due diligence on new business partners and ongoing monitoring of a subset of existing business partners.

In addition, Bloom Energy:

- Regularly screens all business partners against the Office of Foreign Assets Control (OFAC) watch lists;

- Requires certain business partners to provide information annually in conjunction with our conflict minerals and human rights compliance programs; and

- Has implemented the forced labor screening dashboard to evaluate, monitor, and track certain business partners' supply chain locations, policies, and practices to ensure that they are complying with forced labor requirements.

Bloom Energy reviews the results of screening and responses provided by business partners and takes corrective action when necessary. Corrective action may include additional monitoring, training, or termination of the relationship.

Conflict Minerals Monitoring

Due to the nature of the raw materials we use in production, we are particularly focused on preventing irresponsible smelting or refining activity of 3TG materials (tantalum, tin, tungsten, and gold) in our supply chain.

In 2023, we filed our fourth conflict minerals supplier report (Form SD) with the Securities and Exchange Commission (SEC) covering reporting in the year 2022. The conflict mineral supplier response survey rate was 96%. We are evaluating our suppliers' responses and will escalate action with respect to any suppliers found with high risks.

Conflict Mineral Supplier Response Survey Rate

2021
88%

2022
92%

2023
96%

Business Ethics and Compliance

At Bloom Energy, we endeavor to create a culture of ethical decision-making. Acting ethically builds loyalty, trust, and respect with our employees, business partners, customers, and the communities we serve. Each of the countries where we do business has its own laws, regulations, and customs. We strive to always comply with the law, wherever we live or work.

Global Code of Business Conduct and Ethics

Our Global Code of Business Conduct and Ethics ("Code of Conduct") applies to Bloom Energy Corporation and its subsidiaries and their employees, corporate officers, and directors, as well as contractors assigned to work at the company. The Code of Conduct is available in three languages and addresses a range of ethics and compliance issues Bloom faces around the world. It summarizes key compliance policies and helps put Bloom's ethical principles into practice. The Audit Committee, on behalf of the board, oversees compliance with the Code of Conduct, including the consideration of actual and potential conflicts of interest, compliance with anti-bribery and corruption requirements and best practices, the review and approval of related party transactions, and the review and approval of procedures for handling complaints regarding accounting or auditing matters.

Leadership

Leaders have additional responsibilities at Bloom Energy. Their everyday actions are key factors in fostering an ethical culture where employees act in compliance with the principles set forth in our Code of Conduct. They are responsible for regularly communicating the importance of ethically sound business practices, creating an open-door environment in which honest communication is encouraged, and promptly reporting any concerns received from members of their teams.

Whistleblower Protection

We provide an external channel for employees, contractors, and business partners to ask questions and report concerns or potential violations of the law, our Code of Conduct, or our policies. Our Ethics Helpline is hosted by an independent third party and allows reporters to remain anonymous, where permitted by local law. We continued our "Speak Up" campaign to raise employee awareness and increase reporting. Bloom saw an increase in reported matters year-over-year from 21 in 2022 to 26 in 2023.

We do not allow retaliation against anyone who, in good faith, discloses any actual or suspected violations of the law, our Code of Conduct or policies, or participates in an investigation. The Audit Committee receives a regular report from executive management that summarizes the number and types of issues submitted to us through our Ethics Helpline and management's responses.

Employee Training

We are committed to properly educating our employees on ethical matters. Training may take the form of computer-based or live training, policy acknowledgement or certification, and email communications.

Together, our Human Resources and Compliance and Ethics teams work to provide our employees with appropriate training on compliance-related issues upon hire and periodically thereafter. All new employees are required to complete training on our Code of Conduct and workplace harassment within their first 30 days. Non-manufacturing employees are also required to complete training on insider trading, anti-corruption, conflicts of interest, accurate books and records, and security awareness within their first 60 days of hire.

In 2022, our employees completed refresher training on our Code of Conduct, which focused on confidentiality, potential conflicts of interest, gifts and entertainment, and reporting and retaliation. The training also included a certification. Our non-manufacturing employees also participated in anti-bribery and corruption and security awareness training.

Regulatory Compliance

We are committed to complying with our Code of Conduct and obeying all applicable laws where we do business. We compete on the quality of our products and strictly prohibit all forms of bribery and corruption, in any form, whether government or commercial bribery.

Business Partners

We choose business partners who share our mission, and we intend to only work with those who agree that our shared success is based on acting ethically and lawfully. Following the law is not enough. Our business partners are asked to adhere to our Global Business Partner Standards, which include:

- Conducting business with high ethical standards;
- Complying with applicable law;
- Supporting the human rights of workers and treating employees with dignity;
- Maintaining safe and healthy working conditions for workers; and
- Reducing the environmental impact of business and incorporating sustainable practices into operations.

We continue to assess and improve our compliance and ethics program. In 2022, we implemented new technology solutions to support our economic and trade sanctions program and third-party risk management process. We also developed two new policies and updated our annual compliance and ethics training courses.

Compliance Governance

The Audit Committee, supported by the Chief Legal Officer and Corporate Secretary, oversees our global ethics and compliance program.

Internal Audit

Internal Audit develops an annual audit plan, which focuses on the strategic, operations, compliance, and financial risks of the organization. The audit plan is approved by the Audit Committee. We perform internal audit reviews on a risk basis to review compliance with business and regulatory requirements, such as Sarbanes-Oxley. The results of each audit are reported to senior management and the Audit Committee.

Appendices

Green Notes Management Framework

	GBP Eligible Project Category	Eligibility Criteria and Example Projects	Environmental Benefit	SDG Alignment
Use of Proceeds **EXCLUDED FROM PROCEEDS** **Natural Gas** Specifically excluded from the Use of Proceeds are research and development (R&D), manufacturing, and fuel cell stack replacement activities related to Energy Servers operating entirely on natural gas, to the extent not otherwise provided for across the framework and CCUS projects that utilize captured CO_2 for enhanced oil recovery.	Renewable Energy	Expenditures related to the manufacturing, construction, development, acquisition, maintenance, and operation of Bloom's renewable and low/zero-carbon projects including biogas, hydrogen, carbon capture utilization and storage (CCUS), marine and combined heat and power applications.	Energy Servers running on renewable biogas or hydrogen emit no greenhouse gases with continued air quality, water, resilience, and land use benefits. CCUS an BECCS projects may be carbon neutral or even negative with biogas feedstock. Marine and CHP projects provide important industrial decarbonization even running on conventional fuel. Electrolyzing hydrogen from water using excess renewable generation creates a valuable form of renewable energy storage, which further enables wind and solar capacity and integration. Green hydrogen can also be used as renewable fuel in transport applications, displacing fossil alternatives, and can help reduce emissions in other hard-to-decarbonize sectors like buildings.	7 AFFORDABLE AND CLEAN ENERGY
	Energy Efficiency	Expenditures related to energy efficiency projects based on our best effort to ensure at least a 30% efficiency improvement, including expenditures related to the replacement of fuel cell stacks for Energy Servers running on biogas, hydrogen or blends of conventional fuel and those transitioning into full hydrogen compatibility.	Stack replacement improves efficiency for existing customers as fuel cells degrade over time, and lets them upgrade to full hydrogen compatibility.	7 AFFORDABLE AND CLEAN ENERGY
	Climate Change Adaptation	Expenditures related to manufacturing, construction, research, development, maintenance, and operation of microgrid specific componentry.	Enables energy independence for critical community and business infrastructure threatened by climate-related grid instability. Bloom microgrids can also replace diesel backup generation, reducing GHG and air pollution.	13 CLIMATE ACTION
	Sustainable Water and Wastewater Management	Expenditures related to water efficiency projects and wastewater management including efficiency in water management of electrolyzer and fuel cell systems.	Bloom's electrolyzer technology enables efficient water use during the process of electrolysis.	6 CLEAN WATER AND SANITATION
	Pollution Prevention and Control	Expenditures related to reduction of air emissions, greenhouse gas control, soil remediation, waste prevention reduction, and recycling, and energy/emission-efficient waste to energy projects such as product end-of-life recycling.	Enables reuse and recycling of 99% of Energy Server components.	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
	Green Buildings	Expenditures related to new construction, upgrades, and buildout of properties that have received or are expected to receive LEED Gold or Platinum, BREEAM Excellent or above and Energy Star certifications with ratings of 85 or above.	Reduces impact from corporate building and manufacturing footprint.	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
	Clean and Mass Transportation	Expenditures related to electric vehicle (EV) or hydrogen charging infrastructure, including the manufacture and development of Energy Servers with EV charging capability and EV charging componentry.	Energy Servers natively produce DC power and can be configured to serve as resilient and low-carbon charging infrastructure for fleets and vehicles. Electrolyzers can generate renewable hydrogen fuel for use in zero-carbon land, ship, and air-based transportation applications.	11 SUSTAINABLE CITIES AND COMMUNITIES
Evaluation	We have multiple budgeting and project evaluation processes established which we have extended to support our green notes approval process. We have a capital review committee that reviews large expenditures as well as quarterly, annual, and multi-year budgeting cycles that serve as an approval platform for access to proceeds generated by our Green Notes. Final approval will be made jointly by our Treasurer and our Chief Financial Officer.			
Fund Tracking	We have established an internal tracking system to monitor and account for the proceeds. Pending allocation of an amount equal to the net proceeds to eligible projects, proceeds will be invested in cash, cash equivalents, or liquid securities in accordance with our investment policy. As proceeds are allocated to the Green Notes, the amount of proceeds invested in cash or liquid securities will be reduced accordingly. In the case of divestment or if a project no longer meets the eligibility criteria, the funds will be reallocated to other eligible projects. Payment of principal and interest will be made from our general account and not be linked to the performance of the eligible projects.			
Reporting	Annually, until all the proceeds have been allocated, we will publish a Green Notes Report within this Sustainability Report that will include (i) the amount of net proceeds allocated to each Eligible Project Category, (ii) expected impact metrics that may include carbon dioxide equivalent (CO_2e) emissions avoided, criteria pollutant emissions avoided, and water savings, where feasible, (iii) a selection of brief project descriptions, and (iv) the outstanding amount of net proceeds yet to be allocated to projects at the end of the reporting period.			

Green Bond Annual Review

Panel 1 (page 4)

| | iii. Energy Star |
| Clean and Mass Transportation | Expenditures related to electric vehicle or hydrogen charging infrastructure including:
i. Manufacture of Energy Servers with EV charging capability
ii. Manufacture of EV charging componentry
iii. Manufacture and deployment of electrolyzers to generate renewable hydrogen fuel for transport applications |

Table 3: Key Performance Indicators in the 2023 Framework

Use of Proceeds	Key Performance Indicators
Renewable Energy	i. Biogas, hydrogen, and bioenergy to carbon capture ("BECCS") capacity ii. CO_2 or other GHG emissions avoided/reduced from biogas, hydrogen, and bioenergy to carbon capture ("BECCS") applications
Energy Efficiency	i. Energy savings (MWh) ii. CO_2 or other GHG emissions avoided/reduced iii. Weighted average system lifetime efficiency
Climate Change Adaptation	i. CO_2 or other GHG emissions avoided/reduced
Sustainable Water & Wastewater Management	i. Volume of water consumption avoided or reduced ii. Volume of treated or recycled water
Pollution Prevention and Control	i. CO_2 or other GHG emissions avoided/reduced ii. Waste prevented, minimized, or recycled
Green Buildings	i. Total number of buildings certified ii. Total square feet certified iii. Percentage of overall company square feet certified
Clean and Mass Transportation	i. Commuter carbon Emissions (including metric tons of CO_2e) avoided or reduced ii. Number of Energy Servers with EV charging capability iii. Number of EV charging componentry

Issuer's Responsibility

Bloom Energy is responsible for providing accurate information and documentation relating to the details of the funded projects, including descriptions of projects, amounts allocated and project impact.

Independence and Quality Control

Sustainalytics, a leading provider of ESG research and ratings, conducted the verification of the use of proceeds from the Green Notes. The work undertaken as part of this engagement included collection of documentation from Bloom Energy and review of said documentation to assess conformance with the respective frameworks.

Sustainalytics relied on the information and the facts presented by Bloom Energy. Sustainalytics is not responsible nor shall it be held liable for any inaccuracies in the opinions, findings or conclusions herein due to incorrect or incomplete data provided by Bloom Energy.

Sustainalytics made all efforts to ensure the highest quality and rigor during its assessment process and enlisted its Sustainability Bonds Review Committee to provide oversight of the review.

Panel 2 (page 5)

Conclusion

Based on the limited assurance procedures conducted,[10] nothing has come to Sustainalytics' attention that causes us to believe that, in all material respects, the reviewed projects do not conform with the use of proceeds criteria and reporting commitments in the respective frameworks. Bloom Energy has disclosed to Sustainalytics that the proceeds from the 2020 Green Notes were fully allocated as of December 2023. Additionally, 5% of the proceeds from the 2023 Green Notes were allocated as of December 2023, and the remaining 95% of the proceeds are expected to be allocated by May 2028.

Detailed Findings

Table 4: Detailed Findings

Framework Requirements	Procedure Performed	Factual Findings	Error or Exceptions Identified
Use of Proceeds Criteria	Verification of the Nominated Projects to determine alignment with the use of proceeds criteria outlined in the respective frameworks.	All projects reviewed complied with the respective use of proceeds criteria.	None
Reporting Criteria	Verification of the Nominated Projects to determine if impact was reported in line with the KPIs outlined in the respective frameworks.	All projects reviewed reported on at least one KPI per use of proceeds category.	None[11]

Panel 3 (page 6)

Appendix

Between August 2020 and June 2023, Bloom Energy issued the 2020 Green Notes and the 2023 Green Notes, raising USD 230 million and USD 632.5 million, respectively. The proceeds were allocated to finance or refinance the following projects.

Table 5: Allocation of proceeds from the 2020 Green Notes under the 2020 Framework

Use of Proceeds Category	Projects Financed[12]	Amount Allocated (USD million)[13]
Renewable Energy[14]	Biogas Applications	17.88
	Hydrogen Energy Servers	8.70
	Electrolyzes	59.40
Climate Change Adaptation	Microgrid Componentry[15]	24.26
	Microgrid R&D	14.99
Pollution Prevention and Control	End of Life Recycling Activity	85.71
Green Buildings	Bloom Energy's headquarters – LEED Gold certified	19.06[16]
Total Amount Allocated (USD million)		**230**

Table 6: Allocation of proceeds from the 2023 Green Notes under the 2023 Framework

Use of Proceeds Category	Projects Financed[17]	Amount Allocated (USD million)
Renewable Energy	CHP Applications	22.85
	Marine Applications	1.84
	Carbon Capture Applications	1.24
Green Buildings	Bloom Energy's headquarters – LEED Gold certified	3.88
Total Amount Allocated (USD million)		**29.81**
Unallocated Amount (USD million)		**602.69**

Table 7: Reported Impact for the Green Notes[18]

Use of Proceeds Category	Environmental Impact Reported
Renewable Energy	In 2023, Bloom Energy's waste-to-energy fuel cell installations reduced a total of 196 tCO₂e.
Climate Change Adaptation	In Calendar year 2023, Bloom Energy's microgrids have facilitated 704 ride-through events for customers, carrying a total of 128,943 MWh of energy demand over 529 hours of grid outages.[19]

From August 11, 2018 (Bloom Energy's look-back date) to 31 December 2023, Bloom Energy's microgrids facilitated 3,068 ride-through events for customers, carrying a total of 5,525,371 MWh of energy demand over 4,932 hours of grid outages. |
| Pollution Prevention and Control | Over 99% of products by weight that are sold are either recyclable or reusable. Weight of end-of-life material recovered and avoided landfill by year:
  i.   1,135 tonnes in 2019
  ii. 1,420 tonnes in 2020
  iii. 1,738 tonnes in 2021
  iv. 3,028 tonnes in 2022
  v.   3,559 tonnes in 2023 |
| Green Buildings | Water:
  i.   The building is reducing its indoor potable water use by at least 40% compared to baseline building.
  ii. Irrigation and outdoor water uses reduce potable water use by at least 50% compared to similar landscaped areas.
Energy:
  i.   The Core and Shell building reduces its energy consumption by 28% compared to similar baseline buildings.
Materials:
  i.   The project was able to divert at least 75% of its construction and demolition waste from the landfill during the construction phase.
  ii. At least 20% of the building's materials (by cost) were sourced from recycled content.
  iii. At least 20% of the building materials (by cost) were harvested and manufactured within 500 miles of the project site.
Indoor Environmental Quality:
  i.   At least 90% of the floor areas have direct line of sight to the outdoors.
  ii. At least 75% of the floor plan has at least 25 foot-candles of daylight during typical occupancy hours. |

[18] Bloom Energy has communicated to Sustainalytics that the impact figures for the Renewable Energy expenditures (re)financed by the 2023 Green Notes are unavailable at this stage.
[19] Bloom Energy's microgrid systems facilitate customers' energy needs during grid outages. Events where a Bloom microgrid supplies power to a customer during a grid outage is called a "ride-through" event.

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Disclaimer

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About Sustainalytics, a Morningstar Company

Sustainalytics, a Morningstar Company, is a leading ESG research, ratings and data firm that supports investors around the world with the development and implementation of responsible investment strategies. For more than 30 years, the firm has been at the forefront of developing high-quality, innovative solutions to meet the evolving needs of global investors. Today, Sustainalytics works with hundreds of the world's leading asset managers and pension funds who incorporate ESG and corporate governance information and assessments into their investment processes. Sustainalytics also works with hundreds of companies and their financial intermediaries to help them consider sustainability in policies, practices and capital projects. With 17 offices globally, Sustainalytics has more than 1500 staff members, including more than 500 analysts with varied multidisciplinary expertise across more than 40 industry groups.

For more information, visit www.sustainalytics.com
Or contact us contact@sustainalytics.com

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GRI Index

Disclosure	Location
GRI 2: General Disclosures 2021	
2-1 Organizational details	**Name of the organization:** Bloom Energy Corporation (**NYSE: BE**) **Ownership and legal form:** A Delaware Corporation **Location of headquarters:** 4353 North First Street, San Jose, CA 95134 **Location of operations**: About Us — Bloom Energy Corporate Visual, pages 8-12 **2023 Form 10-K:** Item 1. Business—Corporate Facilities, page 18; Item 2. Properties, page 44; Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—International Channel Partners, pages 59-60
2-2 Entities included in the organization's sustainability reporting	About Us—Bloom Energy Corporate Visual, pages 8-12
2-3 Reporting period, frequency and contact point	**Reporting period:** Twelve-month period ending December 31, 2023 **Reporting cycle:** Annual basis **Publication date:** April 1, 2023 **Contact point for questions regarding the report:** sustainability@bloomenergy.com
2-4 Restatements of information	Not applicable - no restatements from prior reporting period.
2-5 External assurance	Our Strategy—Green Notes 2023 Progress Report, page 15; Environment—GHG Emissions, page 31
2-6 Activities, value chain and other business relationships	Innovation, pages 23-28 About Us, pages 8-12 Management—Responsible Sourcing and Supply Chain Management, page 49 **2023 Form 10-K:** Item 1. Business—Overview, pages 5-6; Products and Services, pages 8-11; Supply Chain, pages 12-13; Manufacturing Facilities, page 12; Services, page 13; Purchase and Financing Options, pages 13-14; Sales, Marketing and Partnerships, page 14; Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Purchase and Financing Options, pages 54-59; International Channel Partners, pages 59-60 2024 Proxy Statement: **Business Summary—Company Overview,** pages 3-5; **2023 Business Highlights,** page 7
2-7 Employees	**2023 Form 10-K:** Item 1. Business—Human Capital, pages 17-18 2024 Proxy Statement: **Sustainability at Bloom—2023 Sustainability Highlights—Promoting Inclusion and Diversity,** page 11
2-8 Workers who are not employees	In the U.S., as of 12/31/2022, we have 1948 contractors, mostly in the manufacturing facilities. **2023 Form 10-K:** page 17
2-9 Governance structure and composition	Management—ESG Management and Oversight, page 48 2024 Proxy Statement: **Sustainability at Bloom—Promoting Inclusion and Diversity,** page 11; **Governance Highlights—Our Board at a Glance,** page 12; **Engaged Oversight—Board Composition,** page 13; **Corporate Governance—Board Composition—Board Membership Criteria—Director Skills and Experience,** pages 17-19; **Board Diversity,** page 21; **Board Refreshment,** page 21; **Director Tenure,** page 20; **Our Board,** pages 23-29; **Corporate Governance Practices—Director Independence,** page 20; **Board Leadership Structure — Our Board Committees,** pages 21-22 **Corporate Governance Guidelines**—14. Number and Composition of Board Committees, pages 6-7; 29. Sustainability and Political Contributions, page 11
2-10 Nomination and selection of the highest governance body	2024 Proxy Statement: **Corporate Governance—Board Composition—Board Membership Criteria,** page 16; **Director Skills and Experience,** pages 17-19; **How We Select Directors,** page 21; **Stockholder Proposals and Nominations— Stockholder Nominations and Other Proposals,** page 96 **Corporate Governance Guidelines**—2. Independence of the Board page 2; 8. Selection of Directors, pages 3-4; 9. Board Membership Criteria, pages 4-5
2-11 Chair of the highest governance body	2024 Proxy Statement: **Board Leadership Structure,** pages 33-34 **Corporate Governance Guidelines**—7. Chairperson of the Board; Lead Independent Director, page 3

Disclosure	Location
2-12 Role of the highest governance body in overseeing the management of impacts	Management—ESG Management and Oversight, page 47 2024 Proxy Statement: **Corporate Governance—Board Leadership Structure—Our Board Committees,** pages 38-40; **Board's Role and Responsibilities—Sustainability Management and Oversight,** page 43
2-13 Delegation of responsibility for managing impacts	Management—ESG Management and Oversight, page 47 2024 Proxy Statement: **Sustainability Management and Oversight,** page 43; **Corporate Governance— Board Leadership Structure—Our Board Committees,** pages 38-40; **Board's Role and Responsibilities— Enterprise Risk Management Program,** page 43
2-14 Role of the highest governance body in sustainability reporting	Management—ESG Management and Oversight, Board Oversight of ESG, page 47
2-15 Conflicts of interest	**Corporate Governance Guidelines**—11. Code of Conduct, Conflicts of Interest, Related Party Transactions, and Complaints, pages 5-6 2024 Proxy Statement: **Corporate Governance—Related-Party Transactions,** pages 46-48
2-16 Communication of critical concerns	2024 Proxy Statement: **Corporate Governance—Board Processes and Policies—Stockholder Communications with Our Board of Directors,** page 46 **Corporate Governance Guidelines**—28. Stockholder Communications with the Board, pages 10-11
2-17 Collective knowledge of the highest governance body	2024 Proxy Statement: **Corporate Governance—Board Processes and Policies—Director Orientation,** page 45; **Director Education,** page 45 **Corporate Governance Guidelines**—22. Director Orientation and Continuing Education, pages 8-9
2-18 Evaluation of the performance of the highest governance body	2024 Proxy Statement: **Corporate Governance—Board Leadership Structure—Board and Committee Evaluations,** page 36 **Corporate Governance Guidelines**—23. Evaluation of Board Performance, page 9 Frequency of the evaluations: Annually
2-19 Remuneration policies	2024 Proxy Statement: **Corporate Governance—Director compensation,** pages 48-50; **Executive Compensation,** pages 54-70; **Compensation Committee Report—Potential Payments on Termination or Change in Control,** pages 70-80
2-20 Process to determine remuneration	2024 Proxy Statement: **Corporate Governance—Director Compensation,** pages 48-50; **Executive Compensation—Compensation Philosophy and Objectives,** page 59; **Executive Summary—Stockholder Engagement and Consideration of 2023 Say-on-Pay Vote,** page 55; **Compensation Decision-Making Process—Role of the Compensation Committee,** page 60, **Role of the Consultant,** page 61 **Corporate Governance Guidelines**—18. Director Compensation, page 8; 24. Chief Executive Officer and Executive Officer Performance Review, page 9
2-21 Annual total compensation ratio	2024 Proxy Statement: **Executive Compensation—Pay Ratio Disclosure,** page 78
2-22 Statement on sustainable development strategy	Message from Leadership, pages 2-3
2-23 Policy commitments	Management—Responsible Sourcing and Supply Chain Management, page 49; Business Ethics and Compliance, page 50 2024 Proxy Statement: **Corporate Governance—Board Processes and Policies—Business Conduct and Ethics,** page 46 **Global Code of Business Conduct and Ethics** **Global Business Partner Standards** **Responsible Sourcing Policy** **California Supply Chain Disclosure Statement** **Environmental Policy** **Conflict Minerals Report** **Hazardous Materials Communication Program** **Environmental Management System Manual**

Disclosure	Location
2-24 Embedding policy commitments	Management—Responsible Sourcing and Supply Chain Management, page 49; Business Ethics and Compliance—Employee Training, page 50; Business Partners, page 50
	2024 Proxy Statement: **Corporate Governance—Board Processes and Policies—Business Conduct and Ethics,** page 46
	Global Code of Business Conduct and Ethics
	Global Business Partner Standards
	Corporate Governance Guidelines—11. Code of Conduct, Conflicts of Interest, Related Party Transactions, and Complaints, pages 5-6
	Hazardous Materials Communication Program
	Environmental Management System Manual
2-25 Processes to remediate negative impacts	Management—Business Ethics and Compliance—Whistleblower Protection, page 51
2-26 Mechanisms for seeking advice and raising concerns	Management—Business Ethics and Compliance—Whistleblower Protection, page 51
	Global Code of Business Conduct and Ethics
	Global Business Partner Standards
2-27 Compliance with laws and regulations	**2023 Form 10-K**: Item 1A. Risk Factors—Risks Related to Legal Matters and Regulation, pages 31-33; Item 8. Financial Statements and Supplementary Data—13. Commitments and Contingencies—Contingencies, pages 130-131 of PDF
2-28 Membership associations	National associations include Business Council for Sustainable Energy, Fuel Cell and Hydrogen Energy Association, American Council on Renewable Energy, Hydrogen Council, Coalition for Renewable Natural Gas, and the American Biogas Council
2-29 Approach to stakeholder engagement	Our Strategy—Materiality, page 14; People—Supporting a Just Transition, page 45
	List of stakeholder groups: Bloom leadership, customers, investors, policymakers, employees, and suppliers
GRI 3: Material Topics 2021	
3-1 Process to determine material topics	Our Strategy - Materiality, page 14
3-2 List of material topics	Our Strategy—Materiality, page 14
3-3 Management of material topics	Environment, pages 29-37; Hazardous Materials and Waste Management, page 36; People, pages 38-45; Employee Health, Safety, and Training, page 42; Management—Environmental Management System, page 48; Business Ethics and Compliance—Employee Training, page 50
	2023 Form 10-K: Item 1. Business—Sustainability, pages 14-15; Human Capital, pages 17-18
	2024 Proxy Statement: **Sustainability at Bloom,** pages 8-11
	Global Code of Business Conduct and Ethics
	Global Business Partner Standards
	Responsible Sourcing Policy
	California Supply Chain Disclosure Statement
	Environmental Policy
	Conflict Minerals Report
	Hazardous Materials Communication Program
	Environmental Management System Manual
GRI 201: Economic Performance 2016	
201-1 Direct economic value generated and distributed	**2023 Form 10-K,** page 62: $1.33B
	2023 Form 10-K, page 65

Disclosure	Location
201-2 Financial implications and other risks and opportunities due to climate change	Our Strategy—Climate Related Risks and Opportunities, pages 16-18
	2023 Form 10-K: Item 1. Business—U.S. & Global Climate Issues, page 15; 1A. Risk Factors—Risks Related to Our Products and Manufacturing, pages 25-29; Risks Related to Legal Matters and Regulations, pages 31-33; Risks Related to Our Operations, pages 38-40
201-3 Defined benefit plan obligations and other retirement plans	**2023 Form 10-K**: Item 8. Financial Statements and Supplementary Data—9. Stock-Based Compensation and Employee Benefit Plans, pages 114-119
201-4 Financial assistance received from government	Our Strategy—Scenario Planning, pages 19-20; Innovation—Advancing Our Technology, pages 25-26
	2023 Form 10-K: Item 8. Financial Statements and Supplementary Data—2. Summary of Significant Accounting Policies—Investment Tax Credits, page 92
GRI 202: Market Presence 2016	
202-1 Ratios of standard entry level wage by gender compared to local minimum wage	U.S. employees are paid on wages subject to the minimum wages regulations. Our entry level rate is higher than minimum wage in all locations where we have operations and does not differ by gender.
202-2 Proportion of senior management hired from the local community	This data is not tracked – we hire locally but also provide relocation for hires from other regions
GRI 203: Indirect Economic Impacts 2016	
203-1 Infrastructure investments and services supported	Innovation—Driving Innovation at Bloom—Manufacturing Innovation, page 24; People—Building Resilient Communities, page 43-44
	2023 Form 10-K: Item 8. Financial Statements and Supplementary Data—13. Commitments and Contingencies—Contingencies, pages 129 - 132
203-2 Significant indirect economic impacts	Innovation—Driving Innovation at Bloom—Manufacturing Innovation, page 24; People—Building Resilient Communities, page 43-44
	2023 Form 10-K: Item 8. Financial Statements and Supplementary Data—13. Commitments and Contingencies—Contingencies, pages 129 - 132
GRI 205: Anti-corruption 2016	
205-1 Operations assessed for risks related to corruption	**2023 Form 10-K**: Item 1A. Risk Factors—Risks Related to Our Operations—Expanding operations pages 38-40
205-2 Communication and training about anti-corruption policies and procedures	Bloom provides regular education to relevant employees on anti-corruption policies and procedures, using a variety of communication methods such as electronic communication, live training, and computer-based training. In the calendar year 2023, 99% of employees completed the company's anti-corruption training. They also communicate the anti-corruption policies and requirements to business partners through their Global Business Partner Standards and contract language, which is mutually agreed upon.
205-3 Confirmed incidents of corruption and actions taken	In accordance with our Global Code of Business Conduct and Ethics, we investigate all reports of potential bribery and corruption promptly, fairly and in accordance with our legal obligations. There were no confirmed incidents of corruption in 2023.
GRI 206: Anti-competitive Behavior 2016	
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	None,
	2023 Form 10-K: Item 8. Financial Statements and Supplementary Data—13. Commitments and Contingencies—Contingencies, pages 129-132
GRI 207: Tax 2019	
207-1 Approach to tax	**2023 Form 10-K**: Item 8. Financial Statements and Supplementary Data—15. Income Taxes, pages 126-131. Our tax strategy is primarily focused on compliance with all applicable laws and tax efficiency.
207-2 Tax governance, control, and risk management	the company stays current on tax law changes and utilizes outside tax advisors if needed.
	Significant tax issues are analyzed, tax risks are assessed and tax positions are documented.

Disclosure	Location
207-3 Stakeholder engagement and management of concerns related to tax	Bloom and its project finance partners may recognize tax benefit from a variety of IRA provisions including the Section 48 federal investment tax credit, Section 45Q tax credit for carbon capture and sequestration and Section 45V hydrogen production tax credit. As such, Bloom does work with industry partners and environmental NGOs to advocate for clarified guidance, program extensions, other tax credits, and payment alternatives which would support project economics. **2023 Form 10-K**: Item 1A. Risk Factors—Risks Related to Government Incentive Programs, pages 29-30
207-4 Country-by-country reporting	The company stays compliant with country-by-country reporting in each jurisdiction.
GRI 301: Materials 2016	
301-1 Materials used by weight or volume	Information unavailable / incomplete - we are working on implementing systems and processes to provide us with this level of visibility into our material sourcing.
301-2 Recycled input materials used	Our Strategy—Green Notes 2023 Progress Report, page 15; Environment—Product End-of-Life Management & Circularity, page 37
301-3 Reclaimed products and their packaging materials	Environment—Product End-of-Life Management & Circularity, pages 37
GRI 302: Energy 2016	
302-1 Energy consumption within the organization	Environment—GHG Emissions, page 31; Energy Management, page 33
302-2 Energy consumption outside of the organization	Environment—Avoided Emissions, page 31
302-3 Energy intensity	Environment—Energy Intensity, page 34 2024 Proxy Statement: **Sustainability at Bloom—2023 Sustainability Highlights**, page 9
302-4 Reduction of energy consumption	Information unavailable / incomplete - we are working to implement processes to better track direct impacts of efficiency initiatives
302-5 Reductions in energy requirements of products and services	Environment—Product Efficiency, page 33
GRI 303: Water and Effluents 2018	
303-1 Interactions with water as a shared resource	Environment—Water Management, page 35 **2023 Form 10-K**: Item 1. Business—Sustainability, pages 14-15
303-2 Management of water discharge-related impacts	Environment—Water Management, page 35
303-3 Water withdrawal	Environment—Water Management, page 35
303-4 Water discharge	Environment—Water Management, page 35
303-5 Water consumption	Environment—Water Management, page 35
GRI 305: Emissions 2016	
305-1 Direct (Scope 1) GHG emissions	Environment—GHG Emissions, page 31
305-2 Energy indirect (Scope 2) GHG emissions	Environment—GHG Emissions, page 31, Environment — Energy Management, page 33
305-3 Other indirect (Scope 3) GHG emissions	Environment—Avoided Emissions, page 31
305-4 GHG emissions intensity	Environment—Energy Intensity, page 34
305-5 Reduction of GHG emissions	Environment—Avoided Emissions, page 31; Air Quality, page 34 2024 Proxy Statement: **Sustainability at Bloom—2023 Sustainability Highlights**, page 9
305-6 Emissions of ozone-depleting substances (ODS)	ODS emissions are negligible
305-7 Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions	Environment—Air Quality, page 34

Disclosure	Location
GRI 306: Waste 2020	
306-1 Waste generation and significant waste-related impacts	Environment—Hazardous Materials and Waste Management Program, page 36
306-2 Management of significant waste-related impacts	Environment—Hazardous Materials and Waste Management Program, page 36 **Hazardous Materials Business Plan Binder**
306-3 Waste generated	Environment—Hazardous Materials and Waste Management Program, page 36
306-4 Waste diverted from disposal	
306-5 Waste directed to disposal	Environment—Product End-of-Life Management & Circularity, page 37 2024 Proxy Statement: **Sustainability at Bloom—2023 Sustainability Highlights**, page 9
GRI 308: Supplier Environmental Assessment 2016	
308-1 New suppliers that were screened using environmental criteria	100% of new Business Partners and certain direct suppliers were screened using environmental criteria
308-2 Negative environmental impacts in the supply chain and actions taken	Bloom is unaware of any negative environmental impacts in the supply chain in 2023. To ensure compliance with conflict minerals and human rights regulations, certain direct suppliers must respond to annual questionnaires. Additionally, Bloom mandates that suppliers comply with the Know Your Business Partner Standards available at bloomenergy.com/supplychain and all relevant laws and regulations, as outlined in their supplier contracts.
GRI 401: Employment 2016	
401-1 New employee hires and employee turnover	People - Promoting Inclusion and Diversity, page 40
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	People—Compensation and Benefits, page 40 **2023 Form 10-K**: Item 1. Business—Human Capital—Compensation and Benefits, page 18; Item 8. Financial Statements and Supplementary Data—9. Stock-Based Compensation and Employee Benefit Plans, pages 114-119
401-3 Parental leave	In the U.S., as of 12/31/2023, all full-time employees are entitled to parental leave.
GRI 403: Occupational Health and Safety 2018	
403-1 Occupational health and safety management system	Bloom manages occupational health and safety via its Injury and Illness Prevention Program (IIPP). The IIPP is required by the California Occupational Safety and Health Administration (Cal/OSHA) as outlined in the California Code of Regulations (CCR) Title 8 General Industry Safety Orders Section 3202 and Title 8 Construction Safety Orders Section 1509. The IIPP is Bloom's Corporate Environmental Health & Safety (EHS) standard and applies to all areas. All BE employees, contractors, interns, visitors and subcontractors are expected to follow the EHS policies that are referenced therein and applicable to operations being performed within BE facilities and at customer sites outside of BE facilities. Environment—Hazardous Materials and Waste Management Program, page 36; People—Employee Health, Safety, and Training, page 42
403-2 Hazard identification, risk assessment, and incident investigation	See IIPP 403-1, which includes information on procedures relating to Inspections, Occupational Injury/ Illness Reporting and Investigation, Hazard Correction, Risk Assessment and Training. Bloom Energy and its contractors are required to participate in training on hazard identification and risk assessment. This training is required to be provided to affected employees and contractors on a periodic basis, or as a refresher after a near miss occurs. Moreover, Bloom tracks all incidents via an electronic QuickBase system. To that end, Bloom requires completion and submittal of an electronic incident report within 24 hours of any Accident, Incident, Equipment Damage, Injury, Illness, and/or Near Miss. Among other things, the reporting form requires investigation and the identification of: immediate corrective action(s); short term corrective action(s); long-term corrective action(s); and root cause(s) and incident reports are not closed until corrective actions are completed. In order to get to root cause(s), Bloom employees utilize common techniques including the 5 Whys. All incident reports are tracked via the electronic system and at any point in time, Bloom can generate quarterly and annual data on each category of incident, including recordable injuries. This data is utilized to identify trends and target EHS resources for purposes of continuous improvement. People—Employee Health, Safety, and Training, page 42
403-3 Occupational health services	See 403-2 and IIPP 403-1. **Hazardous Materials Communication Program**

Disclosure	Location
403-4 Worker participation, consultation, and communication on occupational health and safety	As indicated above and below, Bloom has a robust occupational health and safety management system that requires training and retraining in a number of areas and circumstances and where workers actively participate in the incident reporting and resolution process. In addition, the Bloom Energy Safety Team (BEST) is a joint cross-functional worker and management committee instated to promote a safe and injury-free workplace. BEST meets at least quarterly to discuss EH&S updates and champion safety communication throughout the organization.
403-5 Worker training on occupational health and safety	In order to ensure that employees receive the information required to complete job tasks appropriately and safely, Bloom uses the following training programs: (1) Training for all new workers prior to or at the time of initial job assignment; (2) Training for all workers given new job assignments for which training has not previously been received; (3) Training whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard; (4) Training whenever Bloom is made aware of a new or previously unrecognized hazard; and (5) Training for supervisors to familiarize themselves with the safety and health hazards to which workers under their immediate direction and control may be exposed. In addition to the above, the following is also provided as needed: (a) additional training courses are provided to Bloom employees depending on job tasks and additional job duties (i.e., participation in emergency response activities); (b) additional training might also be provided for reasons including, but not limited to, emergency preparation, such as Fire extinguisher, First Aid/ Cardiopulmonary Resuscitation (CPR), and lift trucks; and (c) Site Specific Training: All new employees will be provided site specific emergency procedures and potential hazards and controls training(s) according to their job tasks and specific workstations. Environment—Hazardous Materials and Waste Management Program, page 36; People—Employee Health, Safety, and Training, page 42 **Hazardous Materials Communication** **Program Hazardous Materials Business Plan Binder**
403-6 Promotion of worker health	People—Compensation and Benefits, page 40 **2023 Form 10-K:** Item 1. Business—Human Capital—Compensation and Benefits, page 18
403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	See above and IIPP 403-1
403-8 Workers covered by an occupational health and safety management system	People—Employee Health, Safety, and Training, page 42
403-9 Work-related injuries	SASB Table - Workforce Health and Safety
403-10 Work-related ill health	SASB Table - Workforce Health and Safety
GRI 404: Training and Education 2016	
404-1 Average hours of training per year per employee	Information unavailable / incomplete - we are working to develop processes to support the disclosure of this data and to merge training information across virtual and in-person sessions.
404-2 Programs for upgrading employee skills and transition assistance programs	People—Employee Engagement, page 41 2024 Proxy Statement: **Sustainability at Bloom—2023 Sustainability Highlights—Talent Acquisition and Development,** page 10
404-3 Percentage of employees receiving regular performance and career development reviews	See Talent Acquisition and Retention Section.
GRI 405: Diversity and Equal Opportunity 2016	
405-1 Diversity of governance bodies and employees	People—Promoting Inclusion and Diversity, page 40 2024 Proxy Statement: **Sustainability at Bloom—2023 Sustainability Highlights—Promoting Inclusion and Diversity,** page 11; **Engaged Oversight—Board Composition,** page 13 **2023 Form 10-K:** Item 1. Business—Human Capital—Inclusion and Diversity, pages 17-18

Disclosure	Location
405-2 Ratio of basic salary and remuneration of women to men	See Compensation and Benefits Section
GRI 408: Child Labor 2016	
408-1 Operations and suppliers at significant risk for incidents of child labor	Bloom's supply chain operations pose a higher risk of incidents of child labor due to the use of third-party suppliers worldwide. To ensure compliance, Bloom requires its suppliers to meet the Know Your Business Partner Standards available at bloomenergy.com/supplychain, as well as relevant laws and regulations outlined in the supplier contracts. In addition, certain direct suppliers must complete an annual human rights questionnaire.
GRI 409: Forced or Compulsory Labor 2016	
409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	Bloom's supply chain operations pose a higher risk of incidents of forced or compulsory labor due to the use of third-party suppliers worldwide. To ensure compliance, Bloom requires its suppliers to meet the Know Your Business Partner Standards available at bloomenergy.com/supplychain, as well as relevant laws and regulations outlined in the supplier contracts. In addition, certain direct suppliers must complete an annual human rights questionnaire.
GRI 413: Local Communities 2016	
413-1 Operations with local community engagement, impact assessments, and development programs	People—Building Resilient Communities, pages 43-44 People—Supporting a Just Transition, page 45
GRI 414: Supplier Social Assessment 2016	
414-1 New suppliers that were screened using social criteria	100% of Business Partners and certain direct suppliers were screened using social criteria.
414-2 Negative social impacts in the supply chain and actions taken	**Conflict Minerals Report**
GRI 415: Public Policy 2016	
415-1 Political contributions	The vast majority of the company's political contributions are done through the The Bloom Energy Corporation Political Action Committee (Be PAC), which was established in 2021. Be PAC is funded exclusively through voluntary contributions from Bloom Energy employees and shareholders. The purpose of the PAC is to create a forum for Bloom employees and shareholders to engage in the political process and support candidates for federal office that are aligned with Bloom's policy goals. The Be PAC campaign finance data can be found at www.fec.gov.
GRI 417: Marketing and Labeling 2016	
417-1 Requirements for product and service information and labeling	Since we are not a consumer facing product and manage the servicing and decommissioning of our products ourselves and/or through partner companies, we manage the necessary information on product components with regards to sourcing, impact, usage and disposal. Environment—Hazardous Materials and Waste Management Program, page 36 Environment—Product End-of-Life Management & Circularity, page 37 Environment—Product Safety, page 37
417-2 Incidents of non-compliance concerning product and service information and labeling	Not applicable; more information can be found in our Product Safety section, page 37

SASB Index

Code	Accounting Metric		Response
Energy Management			
RR-FC-130a.1	(1)	Total energy consumed	See Environment Section
	(2)	Percentage grid electricity	See Environment Section
	(3)	Percentage renewable	See Environment Section
Air Quality			

Within our operational portfolio, at our California manufacturing facilities, we operate production processes including ink production, cell manufacturing, interconnect manufacturing and stack physical assembly processes. Some of these processes result in emissions of organic compounds that trigger Bay Area Air Quality Management District (BAAQMD) permitting requirements. In 2020, Bloom amended its Plant 1 permit to install an emission control device, a regenerative thermal oxidizer (RTO), which controls Volatile Organic Compound (VOC) emissions from the cell printer dryer lines. In 2022, Bloom opened a second manufacturing facility in Fremont, CA that also triggered BAAQMD permitting requirements. It is similarly subject to permit limits that ensure compliance with BAAQMD rules.

Our Delaware facility includes the final stages of fuel cell manufacturing and among other things includes a pad where fuel cells are tested before going out into the field. The emissions associated with the testing process trigger Delaware Department of Natural Resources and Environmental Control (DNREC) jurisdiction. Up until 2021, Bloom maintained a permit for the facility that limited NOx, CO, VOC and SO2 emissions from that process. In 2021, Bloom certified its newest model natural gas energy server with the California Air Resources Board (CARB). Additional emission benefits/reductions were documented in the source test report that was conducted to support that application. Using these updated and improved emission factors, Bloom was able to work with DNREC and expand its testing capabilities in Delaware, while also moving from a permit to a less stringent registration.

Code	Accounting Metric		Response
Workforce Health & Safety			
RR-FC-320a.1	(1) Total recordable incident rate (TRIR)		2.67
	(2) Fatality rate		0
RR-FC-320a.2	Description of efforts to assess, monitor, and reduce exposure of workforce to human health hazards		Bloom's management is fully committed to providing a safe working environment. We believe in the principle of 'safety first' and that all incidents are preventable. We foster an environment with ongoing integration of safety into all activities to eliminate illness and injuries. To achieve this, the company has established well-defined safety, health and environmental policies and procedures and ongoing training. We focus on prevention programs and driving continuous improvement via Design for Safety initiatives during development, interactive training programs with all employees, hands-on audits, employee engagement through monthly team meetings, and relentless focus on deep dive investigations ensuring that we learn and improve from incidents.

Code	Accounting Metric	Response
Product Efficiency		
RR-FC-410a.1	Average storage capacity of batteries, by product application and technology type	N/A
RR-FC-410a.2	Average energy efficiency of fuel cells as (1) electrical efficiency	55.86
	(2) thermal efficiency, by product application and technology type	N/A
RR-FC-410a.3	Average battery efficiency as coulombic efficiency, by product application and technology type	N/A
RR-FC-410a.4	Average operating lifetime of fuel cells, by product application and technology type	5.5 years
RR-FC-410a.5	Average operating lifetime of batteries, by product application and technology type	N/A
Product End-of-Life Management		
RR-FC-410b.1	Percentage of products sold that are recyclable or reusable	See Environment Section
RR-FC-410b.2	Weight of end-of-life material recovered, percentage recycled	See Environment Section
RR-FC-410b.3	Description of approach to manage use, reclamation, and disposal of hazardous materials	See Environment Section
Materials Sourcing		
RR-FC-440a.1	Description of the management of risks associated with the use of critical materials	See Environment Section
Hazardous Waste Management		
RT-EE-150a.1	Amount of hazardous waste generated, percentage recycled	233 tonnes generated, 71% recycled
RT-EE-150a.2	Number and aggregate quantity of reportable spills, quantity recovered	0
Product Safety		

Bloom's current product lines, both ES 5.5 and 6.5 fuel cells and ancillary equipment are UL certified. UL is a third-party certification company that has been around for over a century and is universally recognized. UL Certification means that UL has determined that the product meets specific, defined requirements, requirements most often based on UL's published and nationally recognized Standards for Safety. Being UL certified illustrates a businesses' dedication to consumer safety, as well as the quality of their products. For reference, the ES 5.5 and 6.5 fuel cells are UL Listed as a "Stationary Fuel Cell Power System" to ANSI/CSA America FC 1-2014. It is UL Listed under UL Category IRGZ and UL File Number MH45102.

| Code	Accounting Metric	Response
RT-EE-250a.1	Number of recalls issued, total units recalled	0
RT-EE-250a.2	Total amount of monetary losses as a result of legal proceedings associated with product safety	0
Product Lifecycle Management		
RT-EE-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	Not applicable as Bloom does not have any downstream manufacturers.
RT-EE-410a.2	Percentage of eligible products, by revenue, certified to an energy efficiency certification	0
RT-EE-410a.3	Revenue from renewable energy-related and energy efficiency-related products	$0
Business Ethics		
RT-EE-510a.1	Description of policies and practices for prevention of: (1) corruption and bribery and (2) anti-competitive behavior	Bloom requires all employees to take anti-corruption training.
RT-EE-510a.2	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	0
RT-EE-510a.3	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	0

TCFD Index

Recommended Disclosures	Bloom Energy Disclosure
Governance	
Disclose the organization's governance around climate-related risks and opportunities.	**See Management Section**
a. Describe the organization's governance around climate-related risks and opportunities.	**See Management Section**
b. Describe management's role in assessing and managing climate-related risks and opportunities.	**See Management Section**
Strategy	
Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	**See Our Strategy Section**
a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	**See Our Strategy Section**
b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	**See Our Strategy Section**
c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	**See Our Strategy Section**
Risk Management	
Disclose how the organization identifies, assesses, and manages climate-related risks.	**See Management Section**
a. Describe the organization's processes for identifying and assessing climate-related risks.	**See Management Section**
b. Describe the organization's processes for managing climate-related risks.	**See Management Section**
c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	**See Management Section**

Recommended Disclosures	Bloom Energy Disclosure
Metrics and Targets	
Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	**See Environment Section**
a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	**See Environment Section**
b. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	**See Environment Section**
c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	This is our fourth year completing a greenhouse gas emissions inventory and associated ESG Report. We are in the process of evaluating our climate-related impacts and developing targets that align with a net-zero future.

Assurance

GHG verification statement

RAMBOLL
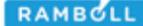
VERIFICATION STATEMENT

Reference   1620016794
Client   Bloom Energy
Address   4353 North First Street, San Jose, CA 95134
Date   26/03/2024
Reporting Period   01ˢᵗ January 2023 to 31ˢᵗ December 2023
Lead Verifier   Rebecca Tehan

Introduction and Scope

This Verification Statement has been prepared for Bloom Energy (Bloom).

Our verification was performed in accordance with the specification and guidance defined in ISO 14064-3:2006 to provide a limited level of assurance about whether the CY23 Bloom's Scope 1 and 2 greenhouse gas assertion is free from material misstatement and has been prepared in accordance with the World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas (GHG) Protocol as agreed.

The GHG assertion relates to the following categories against which verification testing was conducted:

- **Scope 1** – Direct GHG emissions from stationary combustion, mobile combustion, fugitives, and fuel cells
- **Scope 2** – GHG emissions from purchased and consumed electricity and purchased natural gas/heat

The management of Bloom is responsible for all institutional, managerial, and technical arrangements made for the collection of data, preparation of the GHG assertion, and implementation of steps to manage the quality of the GHG assertion.

It is Ramboll UK Limited's responsibility to express an independent GHG verification opinion on the GHG assertion in accordance with our contract with Bloom.

The following work was performed by the verification team as a risk-based sampling exercise in order to test the GHG information and associated GHG assertion:

- Reviewed the reporting organisation, roles and responsibilities, tools used and information flow in order to assess the correct understanding and application of criteria
- Compared a sample of reported data and primary evidence
- Performed an arithmetic verification of calculations
- Reviewed the internal controls which have been implemented to ensure the reliability of reported data

A materiality level of 10% was applied.

There have been no exclusions of any emissions sources

Confidential

Conclusion and Recommendations

Based upon the process and procedures conducted, there is no evidence that the Scope 1 and 2 GHG emissions assertion for the period 01ˢᵗ January 2023 to 31ˢᵗ December 2023 as summarised in Table 1:

- is not materially correct and is not a fair representation of GHG data and information; and
- has not been prepared in accordance with the requirements defined by the World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas (GHG) Protocol as agreed.

[signature]

Rebecca Tehan
Lead Verifier

On behalf of:
Ramboll UK Limited
240 Blackfriars Road
London
SE1 8NW

Table 1: Summary of Bloom Energy's Scope 1 and 2 GHG Assertion

Category	CY2023 (MT CO_2e)
Scope 1	2,207,448
Scope 2 Location-based	8,914
Scope 2 Market-based	5,954

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