Electric Hydrogen Sustainability Report 2023

September 2024



TABLE OF CONTENTS

- Message from the CEO
- 2023 Highlights
- About Electric Hydrogen
 - Resource Efficient Manufacturing
 - Environmental Benefits of Green Hydrogen
 - Circular Business Models
- Environmental Sustainability
 - Greenhouse Gas Emissions, Energy, Water and Waste
 - Management of Substances
 - Environmental Certification
- Supply Chain Management
- Social Responsibility
 - Working at Electric Hydrogen
 - Diversity
 - Health and Safety
- Governance
 - Materiality Assessment
 - Key Performance Indicators

MESSAGE FROM OUR CEO

Thank you for reading our first corporate sustainability report. While our company was founded in 2020, we achieved many exciting outcomes in 2023. We started construction of our GW-scale advanced electrolyzer stack factory in Devens, Massachusetts and installed our 10MW pilot plant in San Jose, California. These facilities will both be instrumental in achieving our goals of delivering fully integrated electrolyzer plants to produce fossil-parity green hydrogen at industrial scale.

Our goals are fueled by our mission to decarbonize critical energy intensive industries globally, and the decarbonization and economic potential for green hydrogen is staggering. Accordingly, our mission and cost-centered approach has helped us to attract both capital, and talent from adjacent clean technology sectors.

Our product, a fully integrated 100 megawatt electrolyzer plant produces 45 metric tonnes of green hydrogen per day, which can avoid over 3 million metric tons of carbon dioxide equivalent emissions over a 20-year project lifetime; this is the emissions equivalent of taking over 30,000 gasoline cars off of the road.

We know that the sustainability profile of our product design and manufacturing operations is just as important as the carbon reduction from putting these plants online. A central theme of this report is resource efficiency. Continued focus on reducing the material intensity of electrolyzer systems and enhancing circularity will allow us to scale and outperform the industry with respect to both cost and lifecycle environmental impact. We hope you enjoy learning about Electric Hydrogen's sustainability practices. "Reducing the material intensity of electrolyzer systems with power and circularity will allow us to scale and outperform the industry."



Raffi Garabedian Chief Executive Officer

2023 HIGHLIGHTS

Building our company's infrastructure



Safety Zero recordable injuries



Emissions

Net zero greenhouse gas emissions



Gigafactory

Construction on our 1.2GW/yr manufacturing facility



Pioneer Plant

Construction on our 10MW pilot facility



Making molecules to decarbonize our world

ABOUT ELECTRIC HYDROGEN

Electric Hydrogen manufactures, installs, and commissions the world's most powerful electrolyzers to decarbonize critical industries with the lowest cost green hydrogen. The company's fully integrated 100MW Plant includes all system components required to turn water and electricity into green hydrogen, including power conversion, gas processing, water treatment and thermal management. Electric Hydrogen's advanced proton exchange membrane (PEM) technology helps customers reach their climate objectives by making green hydrogen an economic inevitability. Electric Hydrogen was founded in 2020 and has a team of over 300 employees with operations in California and Massachusetts. Electric Hydrogen is backed by over \$600M in capital from financial and strategic investors, including Breakthrough Energy Ventures, Temasek, Oman Investment Authority, Amazon, BP, Fortescue, Microsoft, Mitsubishi Heavy Industries, Rio Tinto and United Airlines.





Electric Hydrogen is located on both coasts of the United States with its R&D Facility in Natick, Massachusetts, its manufacturing facility in Devens, Massachusetts, and an operating plant in San Jose, California and San Carlos, California. Our Massachusetts Gigafactory will be one of the largest PEM electrolyzer factories in the world when it fully ramps to its 1.2 GW/yr capacity.

RESOURCE EFFICIENT MANUFACTURING

Electric Hydrogen was founded with a mission to decarbonize hard-to-abate critical industries such as ammonia, steel, and chemicals, by redesigning water electrolysis plants from the ground up. Our 100MW Plant transforms project economics through its innovative advancements in powerful PEM technology and fully integrated plant-as-a-product approach, enabling lower total project costs than the competition. The plant-as-a-product saves costs across material use, plant footprint and installation labor. Coupled with our proprietary electrolyzer technology advancements, which enable the production of multiple times more hydrogen from the same sized stack, these allow for deployment at an industry defining scale to decarbonize critical industries. Along with circularity, these commercial offerings support a comprehensive sustainability strategy of maximizing resource efficiency in electrolyzer manufacturing, transportation, and installation. Improved materials utilization enables eco-efficiency by reducing environmental impact while improving cost performance.





Resource efficiency enables lower cost electrolysis through more efficient use of materials

ENVIRONMENTAL BENEFITS OF GREEN HYDROGEN

Green hydrogen can play a significant role in abating GHG emissions, our generation's greatest challenge. Hard-to-decarbonize sectors including refining, ammonia production, methanol production, and steel manufacturing cannot be fully mitigated by electrification alone.

These sectors consume about 95 million tons of hydrogen per year [CATF]. Most of this hydrogen is produced from fossil fuels with average emissions of 12 to 13 tons of CO2 - equivalent per ton of hydrogen produced in 2021 [IEA Hydrogen Definitions]. Affordable green hydrogen at industrial scale is the primary solution for these emissions sources, providing the opportunity to eliminate approximately one billion tons of annual CO2 emissions. At Electric Hydrogen, we are targeting heavy industry to drive giga-scale decarbonization.



Current hydrogen consumption by hard-to-abate industry *Reference: <u>Clean Air Task Force: Hydrogen for Decarbonization: A Realistic Assessment</u>*

CIRCULAR BUSINESS MODELS



Electric Hydrogen's fully integrated 100 MW plant includes all system components required to turn water and electricity into green hydrogen, including power conversion, gas processing, water treatment and thermal management. At the heart of the system is the electrolyzer stack, where electric current is passed through an electrolyte to produce hydrogen.

In alignment with our mission to decarbonize the planet, we are developing a stack recovery program to enable circularity by ensuring efficient recovery of valuable metals and minimizing waste entering landfills. Our stacks are designed for rapid-line assembly and disassembly using the same tools and processes. Our plants can be easily decommissioned at end-of-life due to their modular design, and a trailer truck or freight train can transport the disassembled components for recycling or refurbishment. We strategically designed this process to minimize cost and emissions associated with decommissioning.

Stacks contain high-value materials such as metal alloys, membranes, and catalysts which can be separated and recovered. We are working to develop recycling processes that recover these materials and allow reuse of off-specification components and spent stacks in the manufacturing processes.

ENVIRONMENTAL SUSTAINABILITY

Electric Hydrogen supports the United Nations Sustainable Development Goals (SDG), with a focus on the clean energy transition. In addition to producing low carbon products, we are committed to decarbonizing our operations. We have committed to operating our facilities with renewable electricity, and utilize green tariffs at our R&D facilities in Natick, MA, San Carlos, CA, and San Jose, CA. We are also investigating opportunities to work with our electricity provider to procure renewable electricity for our Devens, MA Gigafactory,

We tracked energy, greenhouse gas emissions, water, waste and in 2023. These metrics will be most useful for continuous improvement when they are normalized by unit of production. In future years, when Electric Hydrogen begins product delivery to customers, the environmental metrics will be normalized by megawatts (MW) of production, allowing for a baseline to be established and targets to be set.



01. Priority SDG

At EH2, we facilitate the energy transition by providing pathways to green hydrogen at cost parity with fossil-fuel based hydrogen, through advances in power density, scale, and system integration.



02. Priority SDG

Our vision is to create a new generation of electrolyzer technologies to enable clean, abundant, and low-cost hydrogen to decarbonize hard-toabate sectors, that cannot be mitigated by today's technology.



03. Priority SDG

We're using engineering design to reimagine the entire system – at the stack, plant and resource integration levels – and designing it to be scalable, flexible and as simple as possible for our customers. We offer a solution to meet demand for fossil-free hydrogen at scale through a system with breakthrough efficiencies and unparalleled performance, at transformative low CapEx and OpEx.

GREENHOUSE GAS EMISSIONS, ENERGY, WATER AND WASTE

The chart below shows direct (Scope 1) and indirect (Scope 2) emissions of all facilities within Electric Hydrogen's operational control boundary. In 2023, Electric Hydrogen's gross Scope 1 and 2 GHG emissions were nearly 600 metric tons CO2-eq, mostly related to Scope 1 stationary combustion of natural gas for heating in our Massachusetts facilities and Scope 2 purchased electricity in our Massachusetts Gigafactory. Scope 2 emissions in our other facilities are largely mitigated by green tariffs available through our electric utilities.



In addition to gross emissions, Electric Hydrogen purchased certified carbon offsets from Sterling Planet to mitigate Scope 1 emissions and certified renewable energy certificates (RECs) from Terrapass to mitigate Scope 2 emissions, resulting in zero net GHG emissions in 2023.

The second chart below shows indirect (Scope 3) emissions from Electric Hydrogen's supply chain of 17,725 metric tons CO2-eq. Scope 3 emissions are largely from Category 2 (capital goods; 51%) due to the ramping of Electric Hydrogen's testing and manufacturing facilities and associated equipment. In addition, Category 1 (purchased goods and services) accounts for 40% of Scope 3 emissions, due mainly to metal

components in the bill of materials for electrolyzer systems. Smaller GHG emissions related to landfilled waste, business air travel, and employee commuting account for the remaining 9% of Scope 3 emissions in 2023. Our resource-efficient design strategy also lowers Scope 3 supply chain emissions associated with raw material sourcing and transportation.



Electric Hydrogen's 2023 energy usage consisted primarily of manufacturing and R&D electricity usage, and natural gas for heating. A smaller quantity of diesel fuel was used to operate a generator for Electric Hydrogen's 1 MW protoplant test facility in San Carlos, CA. In the future, energy usage is expected to consist primarily of electricity for testing larger test facilities being implemented in San Jose, CA and Devens, MA.

Electric Hydrogen's 2023 water withdrawal was mainly for R&D and testing, though the proportion of water usage at the Gigafactory is expected to increase in future years as the factory ramps to full capacity. In addition to withdrawal, water is the feedstock for water electrolysis and is consumed at a stoichiometric rate of 9 L per kilogram of H2 produced during electrolyzer testing. Due to recirculated water systems, water usage is otherwise minimized. Aside from electrolytic consumption, another main use is in water purification prior to electrolysis. Reverse osmosis/deionized water (RODI) systems produce wastewater during the water purification process, and periodically require make-up water. The RODI systems in electrolyzer testing are a main source of wastewater, along with industrial discharge of spent passivation water in manufacturing.



The graph below shows Electric Hydrogen's absolute waste produced in metric tons with breakdown by type. Waste consists primarily of municipal solid waste, with approximately 40% diverted to recycling.Electric Hydrogen is committed to waste diversion in manufacturing as part of continuous improvement initiatives under its planned ISO 14001 certification for its Devens, MA Gigafactory.



MANAGEMENT OF SUBSTANCES



Electric Hydrogen takes a life cycle approach for managing fluoropolymer materials in electrolysis. We follow best practices across the product life cycle, including partnering with fluoropolymer producers on fluorosurfactant emissions control and replacement; recycling unused catalyst and fluoropolymer materials in manufacturing; using recirculated water systems with performance monitoring during electrolyzer operation; and ensuring takeback and recycling of end-of-life electrolyzer stacks.

From a risk-management perspective, fluoropolymers are non-toxic and nonbiovailable and therefore present low hazard, and their use in electrolyzers as durable, non-consumer products, presents low exposure potential. Along with low risk, because electrolysis is an essential decarbonization tool and there are no durable alternatives to fluoropolymer materials, there is evidence for excluding or exempting fluoropolymers in electrolyzers from PFAS regulation.For example, the State of Maine's PFAS legislation (LD 1537) exempts non-consumer electronics from product restrictions, and <u>PFAS risk</u> <u>management</u> under the Canadian Environmental Protection Act excludes fluoropolymers from scope.

ENVIRONMENTAL CERTIFICATION

We are working on certifying our Devens, MA Gigafactory to ISO 14001 for environmental management. As part of the certification process, Electric Hydrogen is committed to continuous improvement with the following environmental objectives:



Continual education to prevent environmental pollution, preserve natural resources and improve the EMS.



Exploration of new materials, methods with smaller environmental footprints and improvement of hazardous waste management.



Following environmental procedures to decrease environmental pollution and prevent degradation and damage to the environment.



Activities arising from the organization are in the spirit of environmental improvement

We have a goal to minimize our waste generation profile. All our sites currently maintain very small quantity waste generations status, as defined by U.S. EPA. We have initiated a waste diversion initiative to demonstrate continuous improvement under the ISO 14001 framework, where material flows are tracked through our pilot stack production line. By quantifying inputs, outputs, and waste streams by production tool, we will be able to identify opportunities for waste minimization and reclaim raw materials for for reuse. As our product matures and new materials are considered for use, end-of-life reclamation and reuse are key to our environmental performance.

SUPPLY CHAIN MANAGEMENT

The key inputs for manufacturing our electrolyzer stacks are electric power, high-purity water, metal alloys, catalysts, and membranes. Through relationships with key suppliers, we ensure access to critical inputs for production. We also continue to prioritize domestic suppliers of raw materials and components of our electrolyzer stack production.

The electrolyzer systems produced by Electric Hydrogen will build resilience of domestic supply chains by providing scalable and flexible access to hydrogen as a commodity and facilitate progress towards a net-zero economy. Today, only 1% of the 10 million metric tons (MMT) of annual hydrogen production in the United States is produced by electrolysis. The <u>U.S. National Clean Hydrogen Strategy and Roadmap</u> suggests the volume of clean hydrogen needed will increase to annual amounts of 10 MMT by 2030, 20 MMT by 2040, and 50 MMT by 2050. This would contribute 100,000 new U.S. jobs by 2030.

The market is reacting by increasing the availability of components, including some developed specifically for hydrogen applications. The most accessible and inexpensive electrolyzers available are alkaline systems, originating in China. Our advanced PEM electrolyzers stacks are produced in the United States and offer a competitive advantage in cost, power, and efficiency. We are committed to continued development of the domestic supply chain and knowledge base that will contribute to the competitiveness of domestic electrolyzers.

Several aspects of the technology are well-suited for U.S. manufacturing. Our highvalue components and power density ensure a competitive advantage to manufacturing in the United States. The unique intermittent stack operation in our PEM electrolyzer is key to increasing the U.S. market share as it accommodates variable electrical input, which the alkaline electrolyzer does not.



In addition to domestic sourcing and competitiveness, Electric Hydrogen is committed to responsible sourcing with respect to labor, environment, safety, and ethical standards, as described in our <u>Supplier Code of Conduct</u>. Electric Hydrogen's supplier agreements require compliance with applicable laws and regulations, and all new suppliers undergo screening against U.S. and international restricted party lists and indices.

SOCIAL RESPONSIBILITY

Electric Hydrogen is a company of mission-driven, diverse thinkers working together at the forefront of the energy transition. Our values reflect a commitment to results, collaboration, and innovation. The company encourages flexibility and teamwork in order to cultivate a collaborative and healthy work environment that, together, can push the boundaries of our industry.

Our Values



01. Get It Done

Results matter and we empower teammates to take personal ownership of impact

02. Be Bold, Be Open

Speak your truth unapologetically, welcome challenge with an open mind and listen actively

03. Stronger Together

We are for each other, embrace uniqueness and never lose alone

WORKING AT ELECTRIC HYDROGEN



01. Our People Strategy

Electric Hydrogen's people strategy focuses on building a diverse workplace that is balanced and inviting to passionate do-ers looking for a place to make their mark by solving climate change.



02. Respect and Safety in the Workplace

The Company is committed to providing a workplace that is free of harassment and discrimination and does not tolerate workplace harassment or discrimination. Additionally, the Company has an Open Door Policy where open, honest communications are the expectations, not the exception. We want all employees to feel comfortable in approaching their supervisor or People Team in instances where they believe violations of policies or standards have occurred.

03. Communication and Teamwork



We believe that open communication is essential to a successful workplace. Each month, the executive team, including the CEO, CTO, CFO, and CPO, lead an All-Hands meeting where they update the entire company on business progress, challenges, and goals. This meeting gives employees the opportunity to ask questions and address concerns, as well as ensure their focus is aligned with the Company's.



04. Onboarding and Continuous Support

Developing an innovative technology in an emerging industry involves a steep learning curve for new employees, and also presents an opportunity for upskilling and training. New employees participate in an onboarding curriculum which consists of modules on our company, mission and values, internal systems, engineering, safety, communication styles and career management. In addition they receive support from their Manager regarding team protocols, communication, goals etc. In lieu of a formal annual performance review process, we encourage and provide the tools that support ongoing, regular feedback conversations between employees and their supervisors.

05. Workforce Composition



As of December 31, 2023, we had approximately 294 fulltime equivalent employees, an increase of 146 or approximately double from the previous year. Approximately 26% of our associates work in our Gigafactory in Devens, MA, and the remainder of our associates are in research and development, sales and marketing, and administrative positions in other locations.

DIVERSITY

We are proud to be an equal opportunity employer. We are dedicated to building a diverse, inclusive, and authentic workplace for all to belong. We want to cultivate a diverse community that provides unique perspectives to difficult problems and attracts future talent. To that end, we are committed to paying equitably and making career opportunities accessible to everyone.

Each year, we conduct a pay equity analysis to ensure we have pay equity across genders and race/ethnicity for people performing similar work and at the same level with similar experience at each geographic location.

Our inclusive hiring practices are designed to ensure that all candidates, regardless of race, ethnicity, gender identity, sexual orientation, disability, age, socioeconomic background, or any other dimension of identity have an equal opportunity to contribute to our mission. Diverse perspectives are not only welcomed but are essential to our success in developing innovative technology for a sustainable future.

We continuously learn about the market, our business, our talent's needs, and how best to achieve our People goals in thoughtful and data-driven ways.



Employee resource groups

We have established employee resource groups (ERG) to promote diversity at Electric Hydrogen. Sponsored by executive team members, the ERGs support recruitment and professional development through an inclusive work environment.



01. Women's ERG

Women@EH2's mission is to connect, develop, and support members to reach their potential at Electric Hydrogen and to empower women in our industry.

Goals of the Women's ERG:

- Connection: Form a community where members feel valued, safe, and empowered.
- Development: Provide opportunities for profession development.
- Outreach: Connect with and give back to the community of girls in STEM.
- Support DEIB: Support efforts to retain and bring in more women to EH2.



02. Latin American ERG

The Latin American ERG's vision is that Latin Americans and allies can come together, regardless of their different backgrounds and nationalities, to combine their hearts and minds to raise awareness and cultural understanding, grow together as professionals, give back to our communities, and celebrate the experience. Goals of the Latin American ERG:

- Build a supportive and uplifting environment
- Professional development
- Safe space for our community
- Community outreach
- Fun "in familia"



03. PRIDE ERG

The purpose and mission of the PRIDE ERG at Electric Hydrogen is to foster a supportive and inclusive work environment that champions diversity, equality, and respect for all employees regardless of sexual orientation, gender identity, or gender expression. We strive to create a psychologicallyand physically-safe space where LGBTQ+ individuals and allies can connect, share experiences, and promote respect and understanding across the organization.

Goals of the PRIDE ERG:

- Diversity and inclusion
- Connection
- Career development
- Outreach

DEMOGRAPHICS

The following depict Electric Hydrogen's demographics as of December 31, 2023:

All Employees



Executives





Electric Hydrogen | Sustainability Report 2023

HEALTH AND SAFETY

Electric Hydrogen is a "Zero Harm" organization. Whereas part of our overall mission to create green energy solutions we ensure that our operations and equipment cause no harm to people and the environment. We achieve this through risk assessment programs, encouraging employee participation in risk management, using control of work tools, learning, and sharing experience, and keeping our commitment to safety excellence.

Electric Hydrogen uses Safety Stratus to manage an enterprise-wide risk register of all hazards identified through HAZOP (Hazard and Operability Studies), LOPA (Layers of Protection Analysis), Risk Assessments, JSA/JHA (Job Safety/Hazard Analysis), and work observation programs which generate key review metrics to drive continual improvement. In 2023, our recordable injury rate (RIR) was 0, with no recordable injuries. As defined under OSHA, an injury is considered recordable if it requires medical attention beyond first aid. Electric Hydrogen's safety data includes all of the company's manufacturing, R&D, and testing facilities in the U.S. We had no high-consequence work-related injuries in 2023.

Electric Hydrogen employees receive an initial site safety orientation during onboarding, as well as mandatory health and safety training, and training courses specific to their job requirements. Safety metrics are reviewed company-wide on a monthly basis at all-hands meetings, and are a core metric in corporate goal-setting.



2023 Health and Safety Summary

- Documented Learning Opportunities: 248
- Hazard Recognition Ticket Submissions: 85
- Near Miss Reports: 50
- Total Incident Reports: 99
- OSHA Recordable Injuries: 0

GOVERNANCE

The success and reputation of Electric Hydrogen are built upon the principles of fair dealing and ethical conduct. We are committed to complying with applicable local, state, and federal laws and regulations, as well as to the highest standards of ethics and personal integrity.

Our Chief People Officer and Chief Legal Officer oversee our ethics and compliance programs. Electric Hydrogen has an existing mechanism for reporting any misconduct or policy violations via various channels, including our Ethics Hotline (+1-339-232-0628). Any Electric Hydrogen employee or stakeholder can report concerns to the Ethics Hotline, anonymously, confidentially, and free of retaliation.

Electric Hydrogen's Anti-Bribery and Anti-Corruption Policy requires all employees to conduct business in a fair, open, and honest manner and in full compliance with applicable anti-bribery or anti-corruption laws. These policies are part of both Electric Hydrogen's Code of Business Conduct and Electric Hydrogen's Supplier Code of Conduct. Our Chief Legal Officer oversees compliance with our anti-corruption policy.

Electric Hydrogen is committed to complying with data privacy and protection laws applicable to our business. Electric Hydrogen's Electronic Resources and Information Security Policy sets out standards for the proper use and protection of electronic resources and the information we maintain. Our Director of Information Technology oversees compliance with our data privacy and security policy.



Electric Hydrogen's <u>Code of Business Conduct</u> demonstrates our commitment to these principles and guides the company's business conduct.



Additional Resources

- Anti-bribery and Anti-corruption policy
- Anti-money laundering policy
- Confidentiality policy
- Employee handbook
- Environmental health & safety (EHS) standards, procedures and guidelines
- Generative AI policy
- Lone worker policy
- Safe ride home program
- Security surveillance policy
- Transaction review and approval policy
- Travel and expense policy
- Workplace violence prevention plan

MATERIALITY ASSESSMENT

As part of our materiality assessment process, we shortlisted material topics for our business and sector using a prioritization matrix. The prioritization criteria were stakeholder interest and business impact.Stakeholder interest refers to topics that are of importance to key stakeholders, identified through conversations with executive leadership, employees, customers, investors, suppliers and community. These are mapped against their impact on Electric Hydrogen's business operations.The shortlisted topics are shown in green for near-term prioritization. They include environmental topics such as carbon footprint, end-of-life management, and green technology and innovation, which is also central to Electric Hydrogen's mission. Social topics include health and safety, employee engagement, and community impact. Governance topics include management systems, business ethics, and data security.



Impact on EH2's business

KEY PERFORMANCE INDICATORS

METRIC	UNITS	2023 VALUE	GRI REFERENCE
Greenhouse gas emissions			
Scope 1 emissions	metric tons CO2-eq	369	305-1
Scope 2 emissions (market-based)	metric tons CO2-eq	220	305-2
Scope 2 emissions (location-based)	metric tons CO2-eq	691	305-2
Scope 3 emissions	metric tons CO2-eq	17,725	305.3
Purchased renewable energy certificates	megawatt hours (MWh)	1077.1	305.5
Purchased offsets	metric tons CO2-eq	1345	305-5
Air quality			
Volatile organic compounds	metric tons CO2-eq	0	305-7
Energy			
Diesel consumption	megawatt hours (MWh)	125	302-1
Natural gas consumption	megawatt hours (MWh)	1852	302-1
Total fuel consumption	megawatt hours (MWh)	1977	302-1
Electricity consumption	megawatt hours (MWh)	2892	302-1
Total energy consumption	megawatt hours (MWh)	4869	302-1
Water			
Total water withdrawal	megaliters	19.1	303-3
Waste			
Disposed nonhazardous waste	metric tons	258	306-5
Disposed hazardous waste	metric tons	4	306-5
Recycled nonhazardous waste	metric tons	190	306-4
Total waste	metric tons	452	306-3
Occupational health and safety			
Total recordable injury rate	Incidents per 200,000 hours	0	403-9
High-consequence work-related injuries	number	0	403-9
Fatalities	number	0	403-9
Diversity			
Male workforce	percentage	71%	405-1
Female workforce	percentage	29%	405-1
Male senior management	percentage	72%	405-1
Female senior management	percentage	28%	405-1





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