

TO: Santa Clara City Council and Mayor Gillmor
FROM: Bloom Energy
DATE: April 26, 2019
SUBJECT: Santa Clara Resolution on Fuel Cells

The Proposal

Silicon Valley Power (SVP) is planning to introduce a resolution at the May 7 City Council meeting that would limit the types of onsite electricity generation technologies customers in Santa Clara can install. While Bloom, Equinix, Santa Clara residents and others have encouraged a data-driven approach, the original SVP proposal would create a renewables-only mandate. Since renewable biogas in California is virtually non-existent or prohibitively costly (3-10x more expensive), this resolution will ban fuel cells in the City of Santa Clara. We encourage the City of Santa Clara to follow universally accepted methods to measure carbon and allow technologies that reduce the marginal greenhouse gas emissions that they offset.

The Environmental Impact

Although well-intentioned, this resolution is likely to increase greenhouse gas emissions and worsen air quality. SVP owns three natural gas power plants, two of which are over 30 years old, that burn gas to generate electricity.¹ By nature of their non-combustion process, fuel cells generate electricity more efficiently and more cleanly than these facilities without emitting air pollutants such as NOx, SOx, and VOCs that form smog and worsen public health.²

The Economic Impact

This proposal will send a chilling message to both existing businesses and prospective companies. To be successful and compete, data centers, universities and hospitals require affordable, reliable, sustainable, high quality power. Unfortunately, the aging grid and the increasingly severe natural disasters mean that centralized power and delivery do not provide sufficient reliability or power quality. Silicon Valley Power (SVP) reported dozens of electrical outages in the last year alone, including the most recent instance on April 1, 2019 when the power was out for over six hours due to balloons.³ Innovative companies should not be handcuffed when making choices of how to reliably power their facilities.

Proposed Solutions

Bloom is committed to finding a solution that reduces GHGs, provides Santa Clara businesses, hospitals and other institutions with reliable power, and fosters ongoing private investment. We propose an alternative approach:

1. New projects: If Santa Clara is going to pursue a resolution, it should utilize a data-driven approach that allows the cleanest technologies to proceed. Under state law, onsite electricity generation does not count toward SVPs emissions.⁴ Instead, for these types of onsite projects, the universally accepted approach is to measure marginal emissions and any technologies that are cleaner than the marginal emissions they offset should be eligible to operate in the city of Santa Clara.
2. Projects in the application queue: This resolution should not apply to projects that have submitted interconnection applications after months of planning and investment. SVP has not provided clarity on whether the current proposal will apply to those projects for which applications are submitted.

We appreciate your time and attention to working collaboratively to power a prosperous Santa Clara.

¹ <http://www.siliconvalleypower.com/Home/ShowDocument?id=5763>

³ <http://www.siliconvalleypower.com/solar-and-green-power/santa-clara-green-power/santa-clara-green-power-faq#energycredit>

⁴ <http://www.siliconvalleypower.com/solar-and-green-power/renewable-energy-faq#100>

² <https://www.bloomenergy.com/datasheets/energy-server-es5-300kw>

³ <http://www.siliconvalleypower.com/svp-and-community/outages-and-alerts/outages/outage-history>

⁴ See Power Source Disclosure Program Amended Regulations: <https://efiling.energy.ca.gov/getdocument.aspx?tn=216978>

Company Fact Sheet



Our mission is to make clean, reliable, and affordable energy for everyone in the world. To fulfill this mission, Bloom Energy has developed a distributed, on-site electric power solution that is redefining the electric power market and transforming how power is generated and delivered. Our Energy Servers® are among the most efficient energy generators on the planet; providing for significantly reduced electricity costs and dramatically reduced greenhouse gas emissions.

Fast Facts

Founded	Established in 2001 as Ion America (Renamed Bloom Energy in 2006)
Manufacturing Facilities	CA (Sunnyvale) and DE (Newark)
Adoption	Over 100 customers, including 25 Fortune 100 companies
Industries Deployed	Cloud Services and Technology, Retail, Manufacturing, Agriculture, Financial Services, Government, Education, Healthcare, Media, Telecommunications
Deployed Systems	Approximately 300MW

Impact in Santa Clara

Residents	Nearly 50 employees residing in City of Santa Clara
Investment	Invested over \$16 million in utility fees, installation costs, and property taxes to date
Local Suppliers	Procured over \$700K from suppliers based in the City of Santa Clara

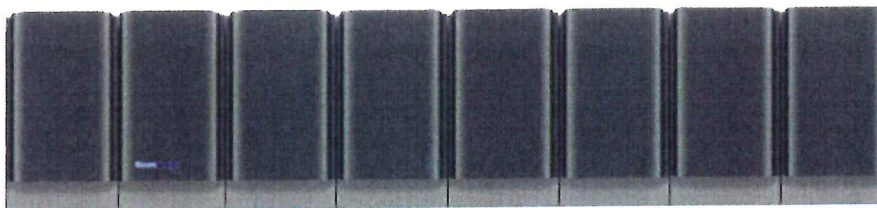










Figure 1: Bloom Energy Server Personalization

Uninterruptible Power Option	Personalized Power Quality	Energy Storage	AC or DC Power	Fuel Flexible	Personalized Sustainability	Personalized Cost Savings	EV Charging Capable
							

The Bloom Energy Server is designed as a platform which can be customized to providing the level of reliability, resiliency, sustainability, and cost savings required by individual customers. For example, our Energy Servers can be configured with uninterruptible power components to deliver higher levels of reliability and grid independent operation. Storage can also be added to reduce peak power consumption and improve system economics.

Sustainability

Carbon Emissions	60% less CO ₂ emissions than an average U.S. combustion power plant
Water Consumption	Water use is negligible during operation, saving 156M gallons per 1 MW of Bloom Energy per year compared to the U.S. grid
Air Pollution	Virtually no NO _x , SO _x emissions, eliminating release of smog forming particulates
Recycling	All Energy Servers and associated parts are recycled sustainably

Be Green

Bloom Energy's world leading technology generates **clean, reliable energy** and has helped customers to collectively reduce CO₂ emissions by **4.4 billion lbs.**

This is equivalent to CO₂ emissions from:



223
Million
gallons of gasoline
consumed



346
Thousand
homes' electricity
use for one year



81
Million
propane cylinders used
for home barbecues

Source: EPA Greenhouse Gas Equivalency Calculator, based on reductions of 4.4 billion lbs. of CO₂.



Learn more at www.bloomenergy.com

Resiliency

Hurricanes	Despite close proximity to Hurricane Sandy, Bloom installation in Delaware remained unaffected
Earthquakes	Resiliency to 6.0 Richter scale earthquake near Napa, CA in 2014
Utility Outages	Figure 2 demonstrates Bloom's performance compared to grid power drops throughout the course of one day
Physical Damage	Independent system architecture continues operations through physical disruptions
Fire	Power was rapidly restored to healthcare centers during Napa, California fires in 2017
Microgrids	75 microgrid installations to date

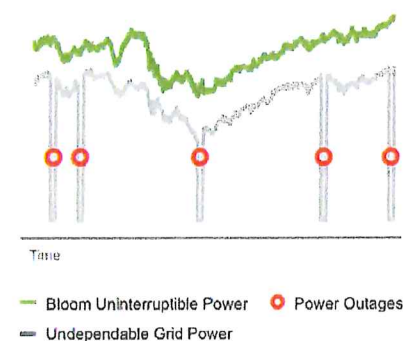


Figure 2 demonstrates Bloom's ability to ride through grid outages