

The Groundbreaking Hydrogen-on-Demand Portable Generator



emissionfreegenerators.com Claymont, DE

[Technology](#) [B2C](#) [Energy](#) [Sustainability](#) [Clean Tech](#)

Highlights

Regular Updates

Founders have a strong track record of investor updates.

- 1 Leadership team with 28 patents, 3 exits, and executive talent from Nestlé and Toyota.
- 2 Solving a critical need for 127 million Americans who can't use traditional generators.
- 3 NASA recognized our hydrogen innovation, leading to prototype development with the US Army.
- 4 Validated through 10,000+ hours of real-world testing.
- 5 Dual revenue model with 49% margins on hardware, 73% on refill cartridges.
- 6 A single \$6.45 cartridge powers medical devices for 18+ hours during emergencies.
- 7 \$755,000 raised from Corp. Venture Capital (CVC), private investors, \$280K grant from SoCal Gas.
- 8 We aim to complete pre-production in late Q4 2025 and launch initial production in Q1 2026.

Featured Investors



Tom Buday
Notable Investor

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Invested \$50,000

"If my 40 years of consumer goods marketing taught me anything it's this: all successful businesses start with a great product, one that meaningfully enhances the lives of customers in ways no competitive product can. And this is what attracted me to EFG.

The revolutionary, hydrogen on-demand portable generator will provide access to electricity anywhere, anytime, for however long is needed, safely and conveniently, and regardless of grid access or weather. No generator on the market today ca..."

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Paul Miller



Syndicate Lead

Follow

Invested \$55,000

Successful leader of many businesses in aerospace, telecom, media and consumer products.

"EFG has an exciting new technology that allows hydrogen to be generated on-demand and then turned into electrical power for a wide range of uses. The initial product will allow consumers to safely generate electricity without grid power. This unit can be operated inside without any emissions. I have observed the demonstration unit and reviewed the extensive market research. I am impressed with the opportunity and want to be involved in bringing this to market."

Team



Mark Collins CEO & Founder

Inventor with 28 patents across mechanical, electrical, and chemical disciplines. Has created and commercialized breakthrough products for over 35 years with 3 successful exits.



Chase Collins Chief Technology Officer

Co-creator of EFG's proprietary chemical formulation with 10+ years experience in hydrogen technology. Spearheaded prototype development with the US Army and oversaw 10,000+ hours of successful third-party testing.



Paul Miller Chairman of the Board

Experienced leader across consumer products, aerospace, telecom, and media industries. Executive at RCA, GE, Marietta, and Lockheed Martin. Brings strategic governance from extensive involvement in startups, joint ventures, and corporate turnarounds.



Tom Buday Chief Marketing Officer

Former Global Head of Marketing at Nestlé with extensive experience in product launches and environmental branding. Expert in scaling consumer products from concept to global markets.



Andrew Singer Chief Financial Officer

Seasoned financial executive with leadership roles at Toyota and BP. Bridges startup environments with large corporate structures to drive financial discipline and growth.



Toni Carlo Vice President

Former Executive Director with diverse background spanning fundraising, startups, policy, and Fortune 500 partnerships. Brings deep expertise in impact investing and building partnerships across sectors.

The Revolutionary Hydrogen-on-Demand Portable Generator



Investor Perks

	Invest \$1,000+ 20% OFF	Invest \$2,500+ 25% OFF	Invest \$5,000+ 50% OFF	Invest \$10,000+ One Free Unit
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* ZENN2 unit bought directly from Emission Free Generators

Introducing the FOUNDER'S EDITION

What You Get:

- **Priority delivery:** Be among the first 250 ZENH2 owners
- **Exclusive color-way** + customization
- **25% off** your ZENH2 purchase (est value: \$562.50)
- **Free pre-order** reservation (value: \$99)
- **Private WhatsApp** access to EFG team + input on product decisions



250 slots. First come, first served. Once they're gone, they're gone.

Our mission is to deliver clean, portable, and reliable power to the world using our breakthrough hydrogen-on-demand technology. With zero emissions, energy flows silently from a compact system that fits on a nightstand—just insert one of our proprietary, malleable cartridges and add water.

We're building a world where:

- 1 billion people without reliable power gain immediate access—no grid infrastructure required
- Medical devices, refrigerators, and essential electronics stay running when the grid fails
- Outdoor adventures aren't limited by weather conditions or noise restrictions
- Power generation is free from harmful carbon emissions

Backed by industry leaders

EFG's hydrogen-on-demand technology represents a breakthrough for our customers who rely on medical devices, communications, and refrigeration during power outages. Their innovative solution addresses a critical need for safe, indoor backup power that works regardless of weather conditions.

That's why we granted \$280,000 from our RD&D program to bring this game-changing technology to those who need it most.

Joe Leiva, Clean Generation Program Manager, SoCal Gas RD&D

 Non-dilutive grant to bring our solution to specific customers	 2023 winner of the Global Accelerator program, corporate venture capital investor	 Funded prototype development and field testing	 Winner of 2025 Global Clean Tech Backdoor Award
 2024 winner of the LaunchPad program	 2024 winner of the Caltech Rocket Prize, selected from 200+ applicants	 CleanTech 2025 Top 100 CleanTech Accelerator Member	

• Proven, market-ready technology

After 10,000+ hours of rigorous real-world testing across diverse conditions, independent engineering firms have verified our technology delivers exactly as promised. This proven breakthrough innovation is secured by four pending patents expected to be granted before our market launch.

Protected by 4 pending patents

 Cartridge System: Revolutionary design for safe hydrogen storage and delivery	 Chemical Process: Proprietary hydrogen-on-demand formulation and activation method	 Safety Mechanism: Multi-layered protection systems for indoor-safe operation	 System Architecture: Overall generator design and power conversion technology
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**Traditional Generators Leave
127 Million Americans in the Dark**





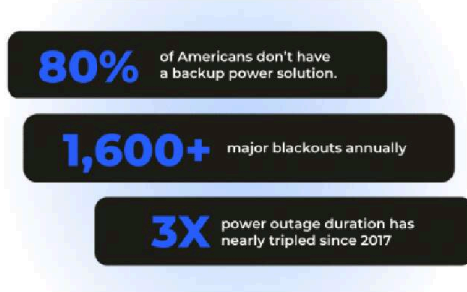
The lights flicker. Then go dark. Your phone's at 23%. The fridge hums to a stop. Suddenly, you're cut off—from power, from life-sustaining equipment, and from the world.

For millions of Americans, this isn't a rare scenario.

It's a growing reality that can turn deadly.

Our aging grid is struggling to keep up with rising energy demands from electric vehicles and data centers. Meanwhile, 70% of our power transmission lines have exceeded their 50-year lifespan.

The result? Outages now last nearly three times longer than they did in 2017. And the problem is only getting worse.



For 127 million Americans in apartments, condos, or with physical limitations, current backup power solutions force impossible compromises. Gas generators are powerful, but release toxic fumes that make them deadly indoors. Battery stations are quiet and compact, but can't last through the night. And solar generators are useless at night and during storms—exactly when you need them.

When the power goes out, millions of Americans are unable to keep medical devices running, food fresh, homes safe, or small businesses operating.

Introducing the Go-Anywhere Generator for Your Home, Emergencies, and Outdoor Adventures



At Emission Free Generators, we've created a revolutionary portable generator that solves all these problems at once. We've accomplished this by shrinking the technology down to a form factor that can fit on a nightstand.

Hydrogen, Simplified

Feature	Traditional Hydrogen Systems	EFG's Revolutionary Approach
Facility Size	Massive facilities requiring acres of space	Compact, on-demand system with no hydrogen storage necessary
Pressure Levels	High-pressure containers (5,000-10,000 PSI)	Safe room-pressure operation (no compression)
Distribution	Complex distribution requiring specialized vehicles and infrastructure	Simple cartridges delivered by courier

Applications	Limited to industrial application with billions in investment costs	Works anywhere, anytime — from apartments to outdoor adventures
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What makes it so revolutionary? It's incredibly simple to use.

A remarkably simple process that anyone ages 7 to 97 can use

1 | INSERT CARTRIDGE
Pop in a cartridge (no tools required)

2 | ADD WATER
Pour in tap water (works with any water source)

3 | POWER FLOWS
Clean electricity immediately available

The secret is our proprietary cartridge system. Each \$6.45 cartridge contains a specialized powder that creates hydrogen on demand. It works with any water source — tap water, rainwater, greywater, seawater, even pond water—to power devices for hours.

What can you power with a single \$6.45 cartridge? More than you think.

A single ~\$6.45 cartridge can power any one of these use cases

CPAP Machines	Refrigerators	Home Office	Outdoor Recreation
18+ hours for uninterrupted overnight use	9+ hours to keep medications and food safe	12+ hours for router, laptop, and phone charging	8-15 hours for lights, cooking equipment, and devices

We've designed the entire experience around convenience and peace of mind.

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Cartridges Delivered to Your Door

- No Hazardous Materials** | Safe to store in apartments, condos, or any living space
- Mail-Order Delivery** | Order cartridges online for home delivery
- Reusable** | Return used cartridges in our prepaid mailer
- 50-Year Shelf Life** | Stock up without worrying about expiration

Hardware features	Cartridge features
1.6kW peak output	1.6kWh energy

120VAC, USB & USB-C outlets	PCF (product carbon footprint) per cartridge 0.068kg CO2e
Size 14" (L) X 13.5" (W) X 9.6" (H)	Size 5" (H) X 5.5" (Dia)
Weight 29lbs	Weight 32oz
Internal UPS (uninterrupted power supply)	50 year shelf life in manufacturers original packaging
Change fuel cartridge without loss of power	Reusable cartridge

Note that all dimensions are estimates at this stage.

• How we make money

Behind this experience and convenience is a powerful 'razor-blade' business model. It works just like it sounds: sell the razor (in our case, the generator) and drive recurring revenue with the blades (our cartridges). Each customer becomes a long-term recurring revenue source, fueling sustainable growth with every cartridge purchase. Add this all up and you have a remarkably versatile solution that can't be beat by traditional backup power solutions.

How This Stacks Up Against the Competition

Feature	EFG Generator	Gas Generators	Battery/Solar Solutions
Indoor Safety	Works safely indoors with zero emissions	Produces deadly carbon monoxide—outdoor use only	Safe for indoor use
Power Duration	Reliable 4-10+ hour runtime for all needs	Provides continuous power (while fuel lasts)	Inconsistent 4-8 hour runtime
Weather Independence	Operates in any weather condition, day or night	Works in any weather condition	Dependent on weather and daylight
Maintenance	Requires no maintenance or technical expertise	Requires regular maintenance and fuel storage	Minimal maintenance required
Convenience	Cartridges deliverable by mail with 50-year shelf life	Needs trips to gas stations during emergencies	Requires alternative power to recharge during extended outages
Portable	Lightweight & easy to use	Heavy, requires fuel storage & handling	Bulky, needs sunlight & frequent repositioning

The Father & Son Duo Delivering Hydrogen Power to the Masses

While industry giants poured billions into massive hydrogen facilities, Mark Collins (28 patents, 3 exits) and his son Chase Collins started in their lab with a wild idea.

What if electricity could be created on demand from hydrogen using a cartridge the size of an envelope?

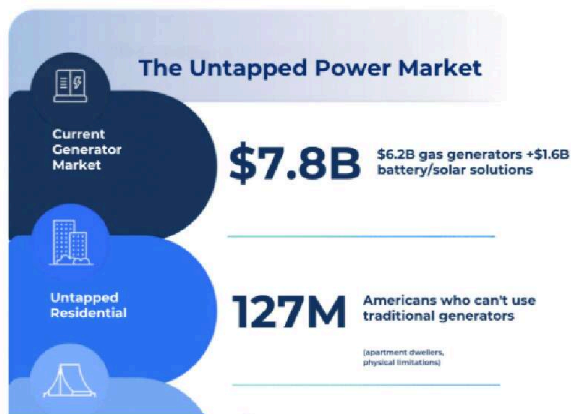
After hundreds of test hours and dozens of iterations, they had a working prototype that could power essential devices safely indoors.

Success meant building a team that could match their ambition. They recruited Nestlé's former Global Head of Marketing and Toyota's financial strategist to transform their innovation into a market-ready revolution.

Tapping into a \$1 Trillion + Market Opportunity

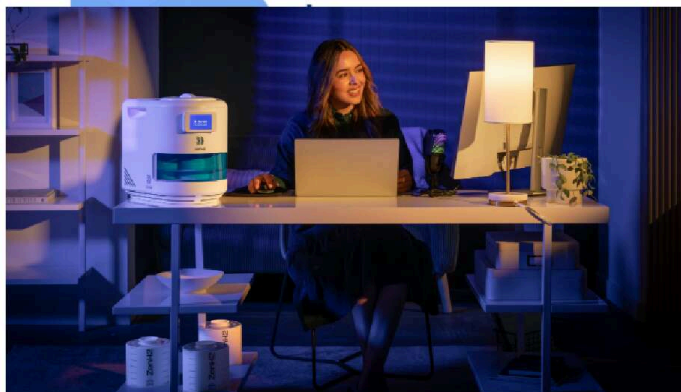
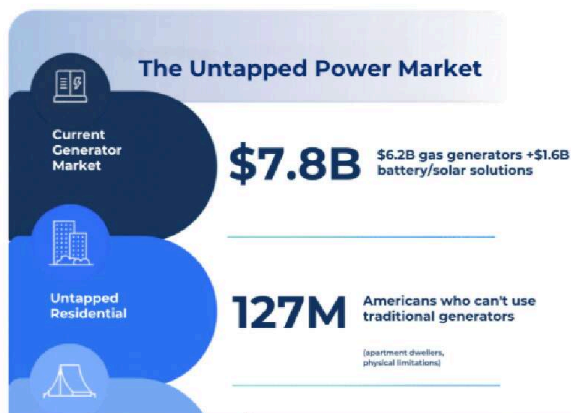
The \$7.8B generator market only serves a fraction of those who need power. Gas generators don't work for apartment dwellers or those with physical limitations. Meanwhile, outdoor enthusiasts struggle with noisy, toxic machines that ruin the experience they're seeking.

EFG isn't just entering the existing market—we're creating an entirely new category for the millions left behind.



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California—The Launchpad for Nationwide Expansion

California recently passed a ban on gas-powered generators, which takes effect in 2028.

The problem is California is the US blackout capital, with nearly 1 in 4 blackouts happening in the Golden State. It's also an RV capital, with over 1.1M RV owners, many of whom rely on generator power.



Residents there need a clean energy generator solution that works no matter the weather conditions.

That's exactly why we're launching in California first.

The generator ban transforms these separate issues into an immediate \$200M+ market opportunity just waiting to be captured.

But this initial launch isn't just our first market—it's our proving ground for coast-to-coast growth.

Your Investment Powers the Energy Revolution

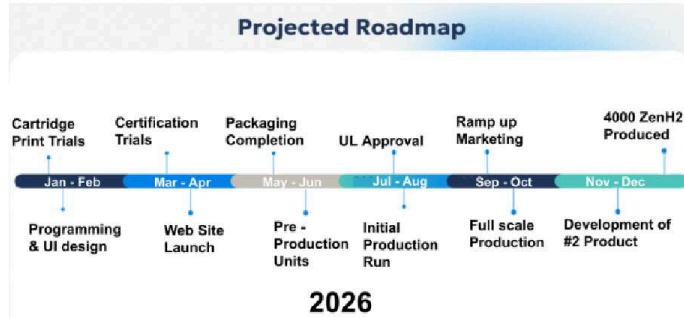
We've built EFG from the ground up—validating our technology with the US Army, securing partnerships with industry leaders like SoCal Gas, and creating a product that's been tested for over 10,000 hours. Now we're laser-focused on two strategic goals:

1. Completing our manufacturing-ready design and UL certification
2. Launching our first production run in Q1 2026

As we scale production, California's 2028 ban on fossil fuel generators creates a regulatory tailwind just as we hit our stride. This gives us a crucial 2-year window to establish a foothold and dominate the market.

• Building a consumer hydrogen ecosystem

Our vision extends far beyond your standard backup generator. Our roadmap includes EV range extenders that could add precious drive time in emergencies, specialized versions for marine applications, and eventually licensing opportunities that could double our revenue potential.



• Join us in powering a brighter future

We're raising on Wefunder because we believe everyone should have the opportunity to be part of the energy revolution. From the apartment dweller keeping their medical devices running during blackouts to the outdoor enthusiast seeking adventure without limitations—our technology makes a difference in real lives.

With your investment, we can complete our journey and begin delivering clean, reliable power to the millions who need it most. Together, let's build a world where access to electricity is never limited by location, weather, or living situation.

