



clean  
energy  
trust

# CLEAN ENERGY TRUST

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Bringing Innovation to Life

REPORT TO STAKEHOLDERS

## LETTER FROM THE CEO

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Clean Energy Trust was founded in 2010 as a 501(c)3 not-for-profit with the mission of building a vibrant cleantech ecosystem in the Midwest.

The vision behind the organization came from our two founding Board Co-Chairs, Nick Pritzker and Michael Polksky, who realized that **the Midwest possesses tremendous assets—from world-class universities to national labs to a depth of Fortune 500 corporations—that can be catalyzed to enable an epicenter of cleantech innovation and entrepreneurship.** The missing element they saw was an organization that could help tie these assets together to make this happen.

Our early efforts centered on creating the largest single-day cleantech business plan competition in the country, the Clean Energy Trust Challenge. The Challenge helps mobilize capital to support emerging cleantech companies and provides these companies with the mentoring and assistance necessary to their development. **To date, 103 companies have participated in the Challenge as finalists and these companies have gone forward to raise over \$125 million in follow-on funding, creating hundreds of new jobs.** The Challenge has also become one of the key convenings of stakeholders from around the Midwest and the country, enabling important connections and the sharing of ideas. Past speakers who have imparted wisdom and experience at the Challenge include Mary Powell of Green Mountain Power, Jim Rogers formerly of Duke Energy, Nancy Pfund of DBL Partners, David Crane formerly of NRG, and Tom Steyer, among others.

Over time the Challenge transitioned from awarding grants to promising companies to serving as Clean Energy Trust's investment platform. **With a goal of investing over \$1 million annually, Clean Energy Trust, utilizing the Challenge platform, has built an investment portfolio of 23 companies that are all operating today, working to enable a low-carbon and resource efficient economy.** We are further strengthening our investment efforts as part of our 501vc™ Investment Process, which melds attributes of a venture capital fund with those of a mission-driven, non-profit.

Looking forward, we realize that much important work remains, particularly working with entrepreneurs based in Midwestern cities where capital and support may be harder to secure. **We believe strongly that promising companies should remain in the communities in which they were conceived and not have to decamp to the Coasts to attain the resources they need to build their companies.** To this end, we're redoubling our efforts to reach deeper into the Midwest to find and support promising innovation and compelling entrepreneurs. If we do our work well, we're confident that the Midwest will establish itself as a hub of cleantech innovation, creating jobs and vibrant economies all while bettering the environment. We hope that you all will join us in our mission!

**ERIK BIRKERTS,**  
CEO, CLEAN ENERGY TRUST

## A BIG OPPORTUNITY FOR RETURNS

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Many intervention strategies exist to address climate change. Technology innovation and entrepreneurship are powerful forces, but require greater support.

Supporting clean energy innovation not only benefits the environment, but also:

**1** **Creates good jobs**

**2** **Stimulates economic development**

**3** **Enhances national security**

**4** **Strengthens U.S. competitiveness**

**5** **Supports disadvantaged populations**

Currently, there is not adequate funding to support and scale early-stage technologies; venture capital has retreated from investing in new clean energy technologies, and private sector and government R&D and commercialization support lags other sectors. This means that even the most promising new technologies and worthy entrepreneurs won't get the support they need to bring new solutions to market.

And yet, innovation—both incremental and breakthrough—is required to achieve the decarbonization necessary to fight climate change. The current state of affairs triggers alarm bells.

New technologies and entrepreneurship are critical to charting a path forward towards addressing climate change and also delivering multiple bottom-line benefits including jobs, economic development, and national security.

# THE MIDWEST HAS FERTILE SOIL FOR INNOVATION

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## OUR REGION, BY THE NUMBERS:

**3 of the Top 5 research institutions in the nation in terms of Science & Engineering Doctorates earned**

- UNIVERSITY OF MICHIGAN
- UNIVERSITY OF WISCONSIN
- UNIVERSITY OF INDIANA

**6 of the Top 25 patent producing institutions**

- UNIVERSITY OF WISCONSIN
- UNIVERSITY OF MICHIGAN
- PURDUE UNIVERSITY
- INDIANA UNIVERSITY
- UNIVERSITY OF CHICAGO
- NORTHWESTERN UNIVERSITY

**3 National Labs**

- AMES LABORATORY (AMES, IA)
- ARGONNE NATIONAL LABORATORY (LEMONT, IL)
- FERMILAB (BATAVIA, IL)

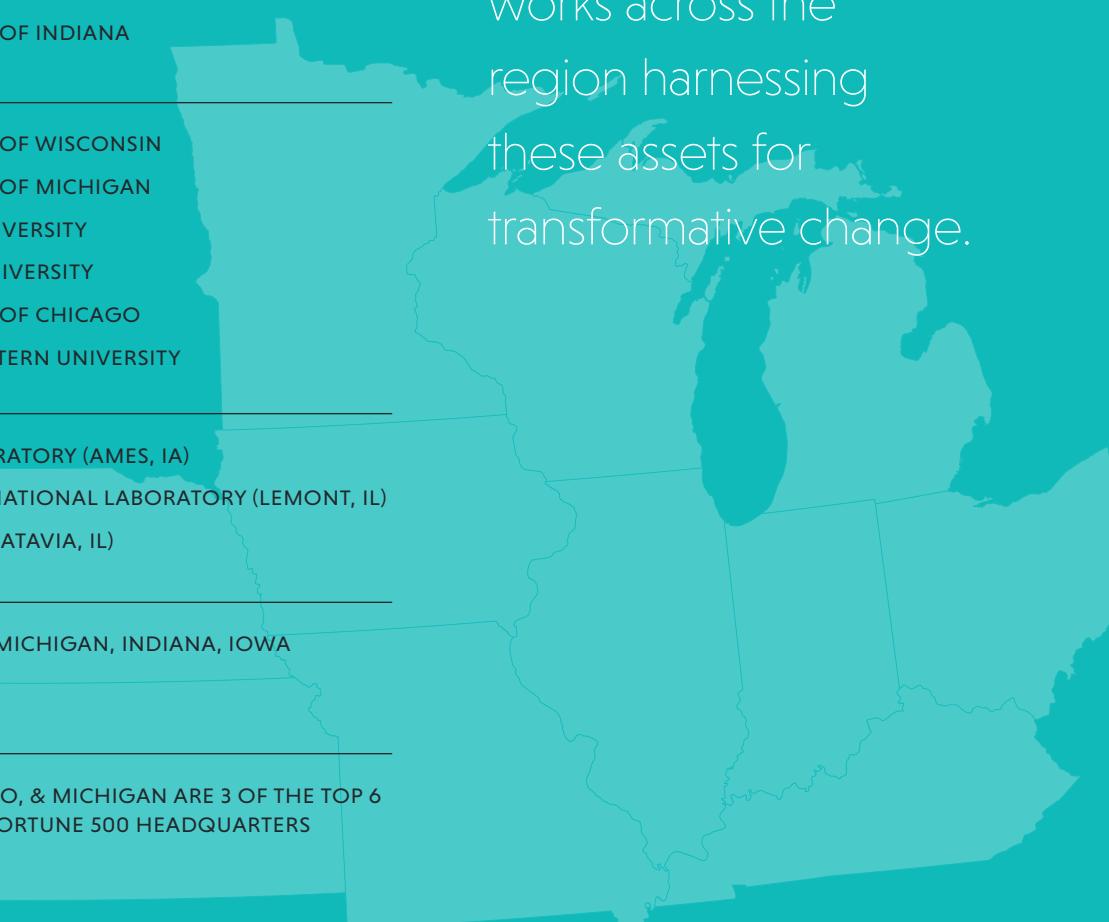
**Top 4 manufacturing states as a share of employment**

WISCONSIN, MICHIGAN, INDIANA, IOWA

**28% of Fortune 500 company headquarters**

ILLINOIS, OHIO, & MICHIGAN ARE 3 OF THE TOP 6 STATES FOR FORTUNE 500 HEADQUARTERS

Clean Energy Trust works across the region harnessing these assets for transformative change.



## IN THE ENTREPRENEUR'S WORDS

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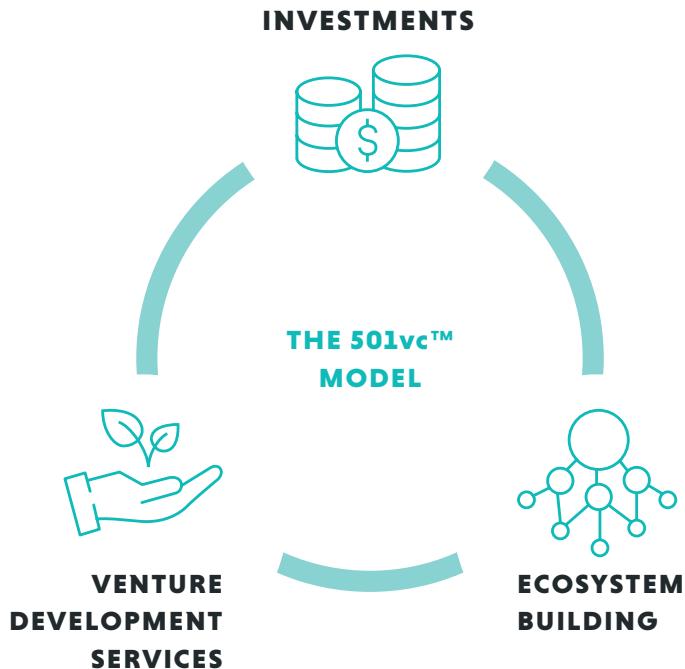
"Clean Energy Trust actually spends time with their portfolio companies in a mentoring, advisory and connector role much more so than any other investor that I've worked with before."

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**LISA LAUGHNER,**  
FOUNDER, GOELECTRIC

## OUR APPROACH: THE 501vc™ PLATFORM

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We believe that helping to build profitable, scalable businesses is a powerful force to better the environment and address other societal challenges. We support the entrepreneurs who are working to bring the next generation of innovative solutions to market.

We've developed our own unique model to invest in worthy technologies and entrepreneurs that otherwise might not be able to progress. We refer to this model as our 501vc™ platform. More than just an investment model, it's also our organization philosophy—we strive to have a positive double bottom line impact.

We provide direct investment for startups while cultivating a dynamic ecosystem that wraps around our portfolio companies to provide connections to other investors, partners, customers, and service providers.

Our investment model blends tried and true elements from venture capital with the mission-driven perspective and structure of a non-profit. By housing our investment fund within the framework of a non-profit organization we free ourselves of certain constraints that the traditional venture capital model would impose. In doing so, we can tolerate more risk and deploy patient capital into early stage startups while still expecting future returns.

# HOW THE 501vc™ MODEL WORKS

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## HOW IT WORKS



### INVESTMENTS

Our investments are made through an evergreen revolving fund, so that returns from successful investments go back into the fund to support the next generation of founders.

Investment decisions are made through a thorough due diligence process in close consultation with our Investment Committee comprised of top tier cleantech investment professionals.

## 2017 ACHIEVEMENTS

- Invested in 4 companies, raising total to 23 overall
- \$1.1 million in new investments, raising total to \$3.8 million
- Annual \$50,000 student business plan competition award



### VENTURE DEVELOPMENT SERVICES

We develop close personal relationships with our founders. We don't "graduate" companies, we are lifelong partners through the startup lifecycle.

Staff are assigned as board observers to each portfolio company, so that we can provide tailored mentoring, fundraising support, and customer introductions.

We provide immersive training, PR & amplification services, and corporate engagement opportunities.



### ECOSYSTEM BUILDING

We consciously grow our network by hosting topical convenings and organized events.

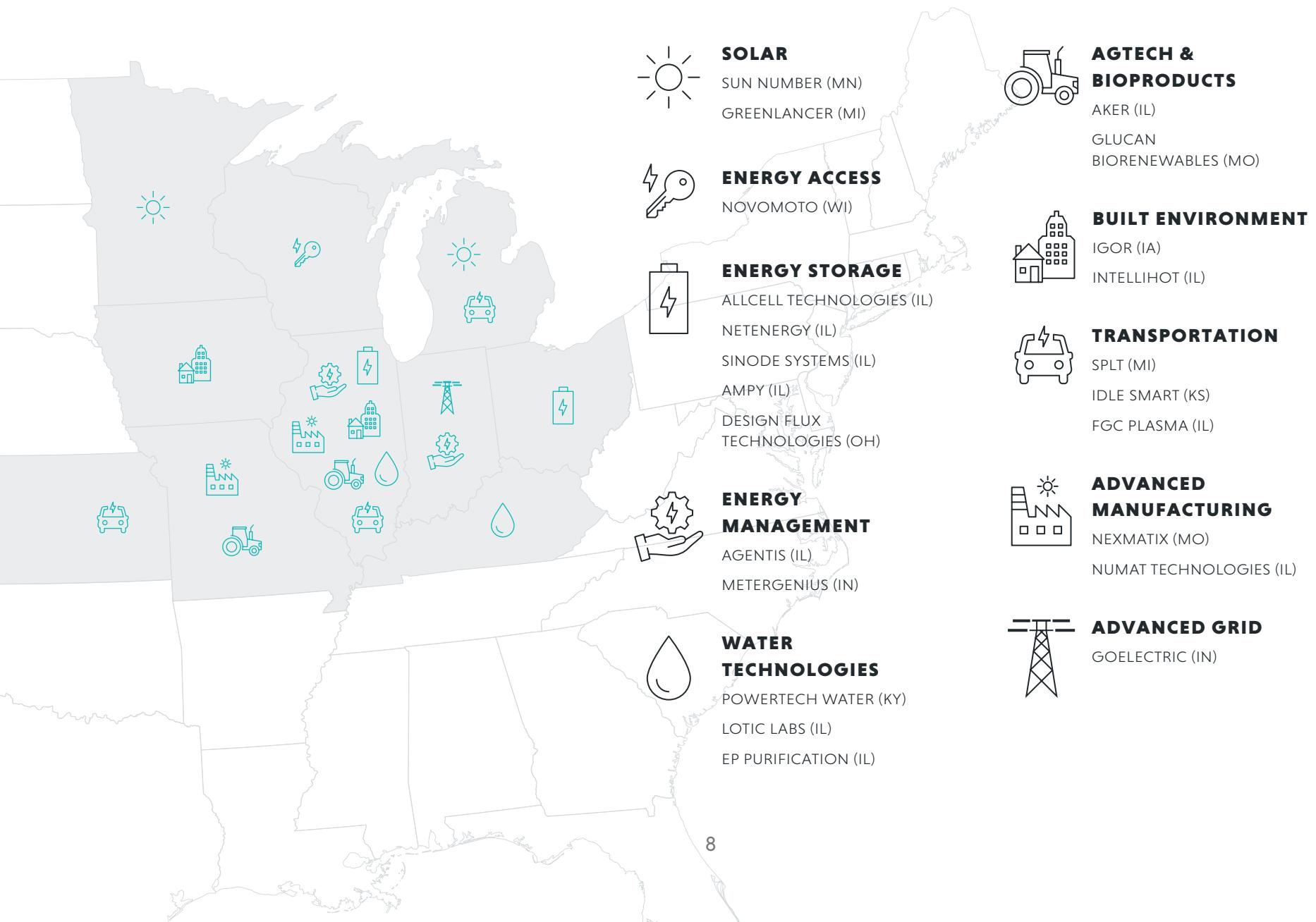
Corporate engagement is strengthened through the Cleantech Innovation Bridge program, where we source innovation to meet the needs of corporate clients.

Thought leadership is cultivated by regularly publishing articles, expert opinions, and original reports to fuel cleantech growth and adoption.

- Clean Energy Trust Challenge
- Clean Jobs Midwest employment survey
- Industry Advisory Council
- Business Roundtables

# OUR PORTFOLIO

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## CAPITAL FORMATION

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### CLEAN ENERGY TRUST'S PORTFOLIO

**23**

companies in our portfolio have received venture investment from Clean Energy Trust since 2014

**\$3.8M**

Clean Energy Trust has invested \$3.8 million in portfolio companies

### CLEAN ENERGY TRUST'S ECOSYSTEM SUPPORT

**103**

companies have participated in the Clean Energy Trust Challenge as finalists since 2010

**\$125M**

These companies have gone on to raise more than \$125 million in follow-on funding

### WE INVEST EARLY TO BRIDGE THE GAP



Clean Energy Trust represents the first money invested in nearly half our portfolio companies (48%)

### OUR MONEY GOES FAR



For every dollar Clean Energy Trust invests, on average, portfolio companies go on to raise \$17 in follow-on funding

### OUR INVESTMENTS MATTER

**4x**

Companies with investments from Clean Energy Trust raise more than 4x as much, on average, as companies which do not receive investment

## IN THE ENTREPRENEUR'S WORDS

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"The networking element of what we've gotten from Clean Energy Trust has been very important. Starting from the very beginning of our relationship, Clean Energy Trust put us in touch with some important advisors and mentors that helped us set our company vision—and made us more competitive for funding."

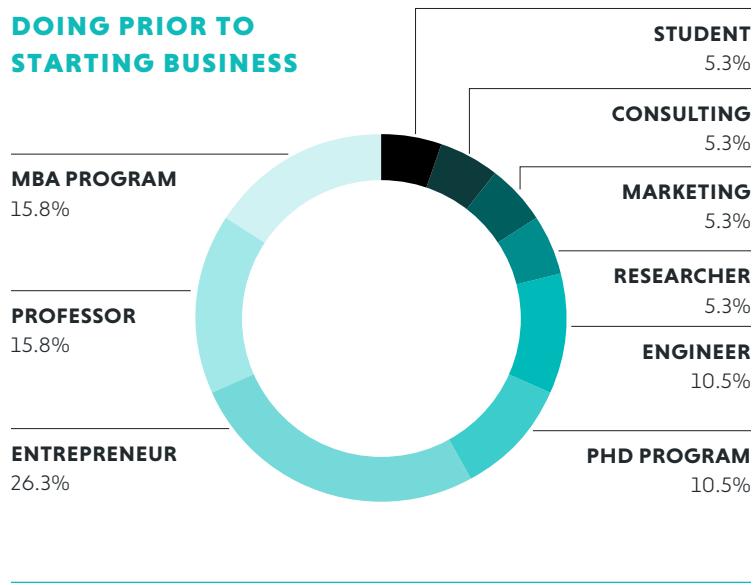
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**AARON OLSON,**  
FOUNDER, NOVOMOTO

# IMPACT: ENTREPRENEURS

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## WHAT FOUNDERS WERE DOING PRIOR TO STARTING BUSINESS



## DIVERSITY

More than half of our portfolio companies have minority founders

22% of our portfolio companies have female founders

30% of our portfolio companies have 1<sup>st</sup> or 2<sup>nd</sup> generation immigrant founders



### Nexmatix

Vicki Gonzalez founded not one, but two Clean Energy Trust portfolio companies (Glucan Biorenewables and Nexmatix). Nexmatix creates savings out of air with smart pneumatic control valves.



### FGC Plasma

Felipe Gomez del Campo, a first generation Mexican-American (and 5th generation engineer), started what became FGC Plasma Solutions as a high school science project. This work led him to Case Western Reserve University in Cleveland, testing his technology at NASA's Glenn Research Center, and acceptance into Argonne National Laboratory's prestigious Chain Reaction Innovations program.



### NovoMoto

Mehrdad Arjmand is from Iran. Aaron Olson is from the Democratic Republic of Congo. Mehrdad and Aaron met while pursuing their PhDs at the University of Wisconsin-Madison, and founded NovoMoto, which helps provide sustainable electricity to communities in the Democratic Republic of Congo.

## IMPACT: JOBS AND ECONOMIC DEVELOPMENT

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Our latest Clean Jobs Midwest employment survey shows that clean energy jobs grew 5x as fast than overall jobs in the region.



### AllCell Technologies

AllCell Technologies produces batteries with proprietary materials that can better control heat, which makes batteries safer and expands the applications for energy storage. [AllCell employs more than 30 people](#) on Chicago's Southwest Side manufacturing battery packs.



### NuMat Technologies

NuMat Technologies has developed an "atomic sponge" to store large volumes of gas in smaller spaces and under less pressure, making it more efficient and safer to store and transport volatile gasses. [NuMat employs 20 people](#) in Skokie, IL working in the lab and in business development to bring this game changing technology to the market.

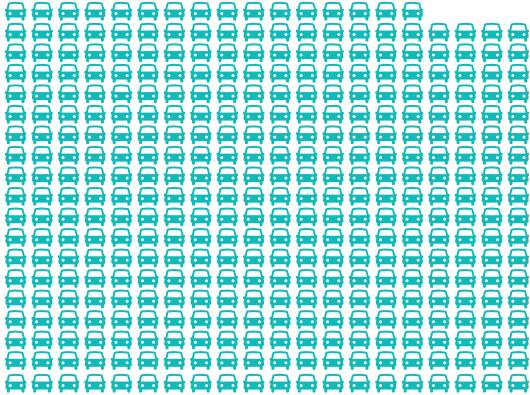


### Intellihot

Intellihot is the first company to design and build high efficiency tankless commercial water heaters entirely in the United States, cutting greenhouse emissions by 37 percent. Today, [Intellihot employs 40 people](#) in Galesburg, IL.

## IMPACT: CLIMATE

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These three companies together reduced carbon emissions by approximately 39 million pounds—that's equivalent to taking 37,000 cars off the road for a year.



### Agentis

Through the ComEd Business Energy Analyzer (BEA) program designed and implemented by Agentis Energy (Agentis), ComEd commercial and industrial (C&I) customers were able to leverage the energy usage data collected by their smart meters to gain greater insight and control over their electricity use, improve their energy efficiency, and reduce their utility bills.

According to an analysis by Navigant, one year of this program resulted in **59,217 MWh of energy savings**. That **reduced CO<sub>2</sub> emissions by 91,777,340 pounds**, the equivalent of taking almost 9,000 cars off the road for a year.



SPLT is an enterprise-first ridesharing platform that connects employees within organizations to share their commute. SPLT enables commuters with common travel plans to meet someone new within their organization, save money and reduce traffic congestion and CO<sub>2</sub> emissions. With around **120,000 users and growing**, SPLT carpools in total **reduce CO<sub>2</sub> emissions by an estimated 292,937,022 pounds of CO<sub>2</sub> per year**. That is equivalent to taking over 28,000 cars off the road for a year.



### Idle Smart

Idle Smart provides fleet efficiency and real-time remote vehicle management solutions to Class 8 fleets in the US and Canada. They reduce vehicle idle time by at least 50% and provide fleets the ability to remotely manage vehicle and in-cabin technology to maintain vehicle uptime. By reducing idle time in sleeper trucks, Idle Smart can drastically reduce the fuel used by the trucks and reduce emissions. In the past year, Idle Smart has helped truck fleets **reduce diesel fuel use by over 288,000 gallons resulting in reducing CO<sub>2</sub> emissions by 6,446,416 pounds**. That is the equivalent of taking over 600 cars off the road for a year.

# STARTUP STORY 1: SINODE SYSTEMS

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## FOUNDER

Samir Mayekar

## COMPANY

SiNode Systems

## TECHNOLOGY

Samir and his team commercialized intellectual property from Northwestern University for a new silicon-graphene material that enables lithium ion batteries to charge faster and last longer.

## CLIMATE IMPACT

This technology allows electric vehicles to travel further on a single charge. SiNode now has contracts with Ford, GM, and Chrysler working on their EV program.

## MILESTONES



"If Clean Energy Trust didn't exist, I do not think SiNode would exist. And that impacts 15 people who get their livelihoods from SiNode and the community of people around them. I don't know what I would be doing, but it certainly wouldn't be starting an energy company because I don't think I would have known it was possible to do that without Clean Energy Trust."

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**SAMIR MAYEKAR,**  
SINODE SYSTEMS



## STARTUP STORY 2: FGC PLASMA SOLUTIONS

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### FOUNDER

Felipe Gomez del Campo

### COMPANY

FGC Plasma Solutions

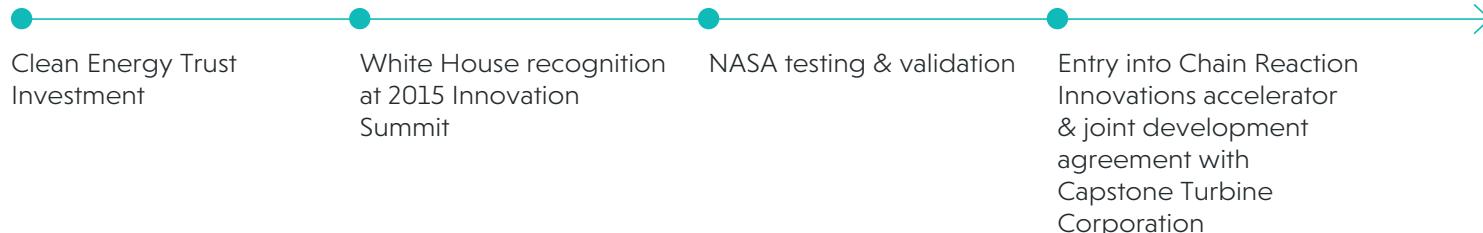
### TECHNOLOGY

Felipe has been developing his fuel efficiency technology for jet engines since his high school science fair days. His patented plasma fuel injector has been tested and verified by labs at Case Western Reserve University, NASA, and Argonne National Labs.

### CLIMATE IMPACT

This technology is projected to reduce plane fuel use by up to 10% while the plane is idling—resulting in huge savings of carbon emissions and fuel costs.

### MILESTONES



"One thing that really struck me was the willingness of the team at Clean Energy Trust to work with such early entrepreneurs so seriously. That's very rare to find in investors or support organizations. Clean Energy Trust sees past us being young and maybe more inexperienced, and sees that our ideas might have potential."

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FELIPE GOMEZ DEL CAMPO,  
FGC PLASMA SOLUTIONS



## STARTUP STORY 3: GOELECTRIC

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### FOUNDER

Lisa Laughner

### COMPANY

GoElectric

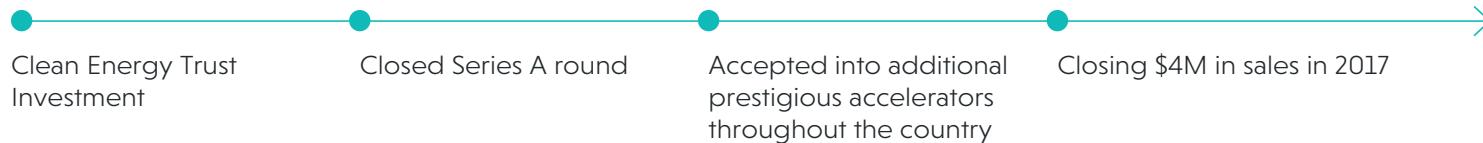
### TECHNOLOGY

Lisa's company has developed an intelligent, control system for microgrids so that components of the system (battery, generator, inverter, etc..) can connect and provide seamless power to customers.

### CLIMATE IMPACT

This technology has many applications in manufacturing, military, and data centers to help make large energy-consuming entities more efficient, more secure, and able to integrate a mix of energy sources.

### MILESTONES



"We were just coming out of the chute when we first met Clean Energy Trust in 2014, totally under the radar. We were thinking about trying to do a Series A, but hadn't pulled it together yet. Working with Clean Energy Trust and ultimately winning investment, just really pushed us forward to being professionally ready for our Series A fund raise process."

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LISA LAUGHNER,  
GOELECTRIC



## IN THE ENTREPRENEUR'S WORDS

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"Traditional investors often just look for that return. Clean Energy Trust is looking for how to educate and grow the founders and entrepreneurs that will eventually lead to returns. It's a greater calling to help founders be better and truly help them build a successful company—versus just trying to find a 10x return."

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**CAMERON LIPPERT,**  
FOUNDER, POWERTECH WATER

## BOARD

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**Erik Birkerts, CEO**  
CLEAN ENERGY TRUST



**Nicholas J Pritzker, Co-Chair**  
TAO CAPITAL



**Michael Polsky, Co-Chair**  
INVENERGY LLC



**Amy Francetic, Treasurer**  
INVENERGY LLC



**Keith Crandell**  
ARCH VENTURE PARTNERS



**Paula Crown**  
HENRY CROWN & COMPANY



**Stephanie Dodson**  
DRAPER RICHARDS KAPLAN  
FOUNDATION



**Ashley Grosh**  
WELLS FARGO



**Sanjeev Krishnan**  
S2G VENTURES



**Veery Maxwell**  
ENERGY INNOVATION



**Tim Schwertfeger**  
RETIRIED CHAIRMAN,  
NUVEEN INVESTMENTS

## INVESTMENT COMMITTEE & INDUSTRY ADVISORY COUNCIL

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The Investment Committee is responsible for overseeing our investment process. The Committee is comprised of a world-class team of investors from top-tier cleantech venture funds and corporate strategy executives from industry-leading global firms. Clean Energy Trust has spent many years cultivating these valuable relationships not only to ensure a high quality investment process, but also to foster a tighter, more fluid ecosystem to support cleantech innovation.

**Keith Crandell, Chair**

ARCH VENTURE PARTNERS

**Jeff Klunzinger**

OS FUND

**Sara Chamberlain**

ENERGY FOUNDRY

**Veery Maxwell**

ENERGY INNOVATION

**David Danielson**

BREAKTHROUGH ENERGY VENTURES

**Josh Posamentier**

CONGRUENT VENTURES

**Rob Day**

SPRING LANE CAPITAL

**Ben Rogers**

BROADSCALE GROUP

**Kevin Deneen**

ASTER CAPITAL

**Brian Tolliver**

SCHNEIDER ELECTRIC

**Gerd Goette**

SIEMENS VENTURE CAPITAL

**Stephen Weiland**

CATERPILLAR

The Industry Advisory Council comprises senior executives from major corporations who support Clean Energy Trust through top level sponsorship and industry engagement. Their goal is to ensure we remain an innovator and market leader while having a direct line of sight into the disruptive innovations coming through our investment pipeline.

**Angela Foster-Rice , Co-Chair**

UNITED AIRLINES

**Jim Mazurek**

ACCENTURE

**Ashley Grosh , Co-Chair**

WELLS FARGO

**Natalie Mindrum**

UNITED AIRLINES

**Amy Francetic**

INVENERGY LLC

**Kevin Self**

SCHNEIDER ELECTRIC

**Chris Gould**

EXELON

**Tim Stojka**

AGENTIS ENERGY

**Jennifer Holmgren**

LANZATECH

**Val Jensen**

COMED

# ECOSYSTEM PARTNERS

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## ORGANIZATION PARTNERS



# ECOSYSTEM PARTNERS

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## CORPORATE & FOUNDATION PARTNERS



WHITE & CASE

Invenergy

Katten

Katten Muchin Rosenman LLP



Baxter



The Joyce Foundation

Hanley Foundation



Deloitte.



ComEd  
An Exelon Company

UPTAKE

CLEAResult®

accenture  
High performance. Delivered.



WINTRUST  
VENTURES

Schneider  
Electric

LanzaTech

GXP INVESTMENTS



P R I Z K E R  
F O U N D A T I O N

PEOPLES GAS®  
NATURAL GAS DELIVERY

AVISON  
YOUNG

AGENTIS

Locke  
Lord

Bloomberg  
Philanthropies

plante  
moran  
audit • tax • consulting

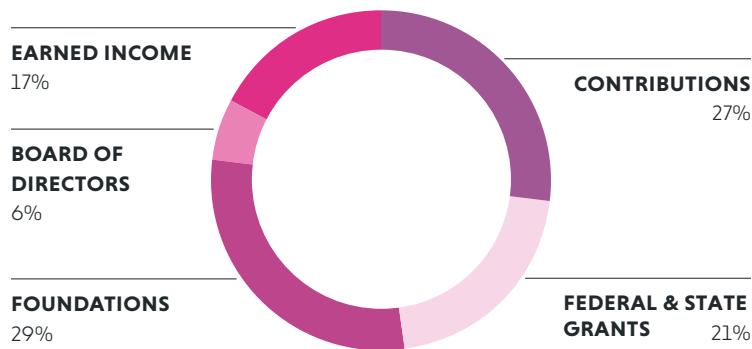
Baker  
McKenzie.

Draper Richards Kaplan  
FOUNDATION

## HOW WE OPERATE

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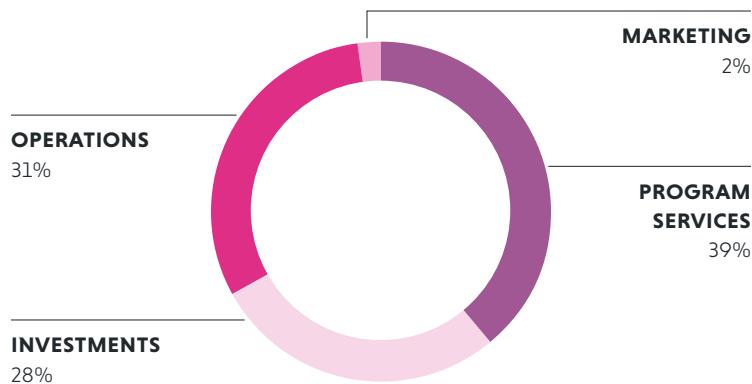
### SOURCES OF FUNDS



Clean Energy Trust maintains a diverse base of funders, including more than three dozen corporate sponsors.

Clean Energy Trust prides itself on sound fiscal management and careful stewardship of the contributions and support it receives. Plante & Moran LLC, Clean Energy Trust's auditor, has consistently issued clean audit opinions following its review of Clean Energy Trust's finances and record-keeping.

### USES OF FUNDS



"What makes me incredibly proud to be part of Clean Energy Trust is the quality that's embedded in everything they do and the real commitment to sustainability and commitment to the organizations that they're working with. They're bringing such value to this ecosystem that they're a part of and I am proud of what they're getting done."

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**STEPHANIE DODSON,**  
DRAPER RICHARDS  
KAPLAN FOUNDATION

## SUMMARY

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Photo by kennysarmy.

Your support directly impacts the lives of innovative founders with big ideas for how to use science and technology to make the world a more sustainable place.

Please join us in our mission!

### **ERIK BIRKERTS**

CEO

ERIK@CLEANENERGYTRUST.ORG

"I view a donation as a ripple effect, like when you throw a pebble into a pond. Sponsors, by making strategic donations to Clean Energy Trust, are dropping the pebble in. By funding Clean Energy Trust, they are funding entrepreneurs and the people who work at the companies, and it goes on to impact their families and customers and partners. We now have a contract with Ford, GM and Chrysler on their EV program. That is a huge ripple effect, and it might be four ripples out from the pebble, but it wouldn't have happened without the pebble."

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**SAMIR MAYEKAR**, SINODE SYSTEMS

# THE FUTURE OF CLEANTECH

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## "IN THE NEXT 10 YEARS..."

"...I'm most excited about the potential to rapidly electrify and reduce the carbon footprint of our transportation fleet, as electric vehicles reach cost parity and consumers swap out their cars for electrified, connected, shared autonomous vehicles fueled from a clean grid."

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**IAN ADAMS**  
CHIEF OF STAFF

"...I want to see more initiatives to ensure more inclusion of women and minorities within this amazing field."

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**ESTELLE SEALS**  
DIRECTOR OF OPERATIONS

"...I'm looking for the price of renewable power to continue to fall, while the unsubsidized costs of fossil fuels continue to rise. Once the economics are secure beyond a shadow of a doubt, business practicalities will eclipse the political debate."

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**EMILY ACHLER**  
DIRECTOR OF COMMUNICATIONS  
& MARKETING

"...I am excited to see tremendous wealth created by cleantech entrepreneurs, proving the hypothesis that addressing climate change is one of the world's greatest entrepreneurial opportunities."

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**ERIK BIRKERTS**  
CEO

"...I'm looking forward to seeing the seeds we're planting start to bear fruit. It's going to take some time—that's the nature of cleantech innovation and that's why we do what we do—but I'm 100% certain that the entrepreneurs we're nourishing and the ecosystem we're cultivating will yield sustainable businesses at scale."

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**PAUL SEIDLER**  
DIRECTOR OF VENTURE DEVELOPMENT

