

EPIC ENERGY PROGRAM *for* INNOVATION CLUSTERS **PRIZE SHOWCASE**

Featuring startups selected by the most
innovative incubators in the U.S.

— MARCH 30 —

DESIGN IT!

MOVE IT!

PROVE IT!

AMERICAN
MADE
U.S. DEPARTMENT OF ENERGY

 **CLEAN ENERGY**
BUSINESS NETWORK

U.S. DEPARTMENT OF
ENERGY

OFFICE OF
Technology Transitions

Kind Designs



Contact Email: anya@kinddesigns.org

Business Website: www.kinddesigns.org

Nominated by: Seaworthy (EPIC Prize Semifinalist)

Kind Designs is 3D Printing Living Seawalls

- Kind seawalls are **structural**: protect communities from flooding and erosion
- Kind seawalls are **ecological**: function like artificial reefs, sequester carbon and collect essential data.
- Kind seawalls are exponentially cheaper and faster to produce than traditional seawalls.
- All the environmental benefits are therefore FREE
- **B2B Business Model**: Kind 3D Prints panels then sells them to contractors who install and permit seawalls.



Aloft Systems



miles@aloft.systems

www.aloft.systems

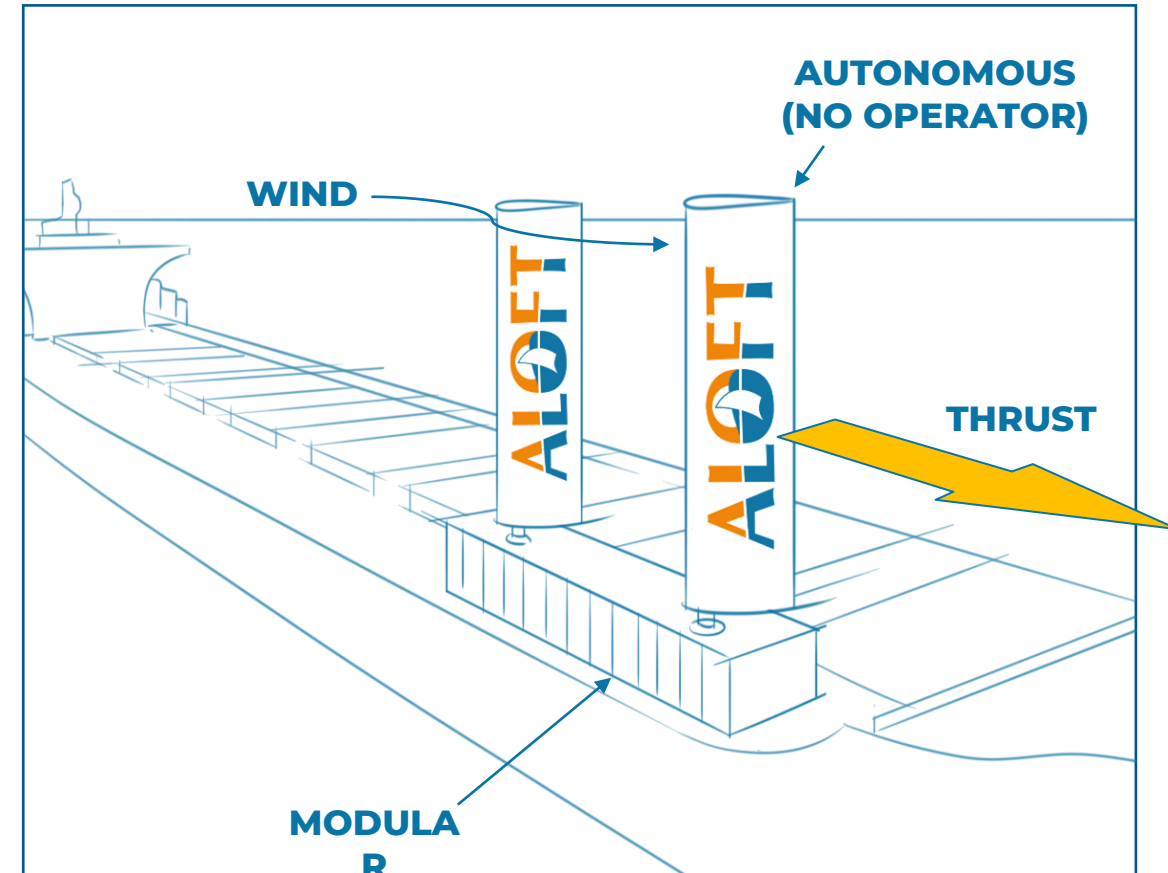
Nominated by: BlueSwell Incubator

Problem:

The maritime industry generates 2.7% of all greenhouse gas emissions globally. The industry has committed to a 50% reduction in emissions by 2050 but vessel operators have no good options to retrofit existing vessels to reduce emissions.

Solution:

Aloft is developing modular sails that can be retrofitted to any ship, immediately reducing emissions and fuel costs. Aloft's sails autonomously capture wind and help propel the vessel without intervention by the crew.



Diversican Corporation

nmdang@wustl.edu

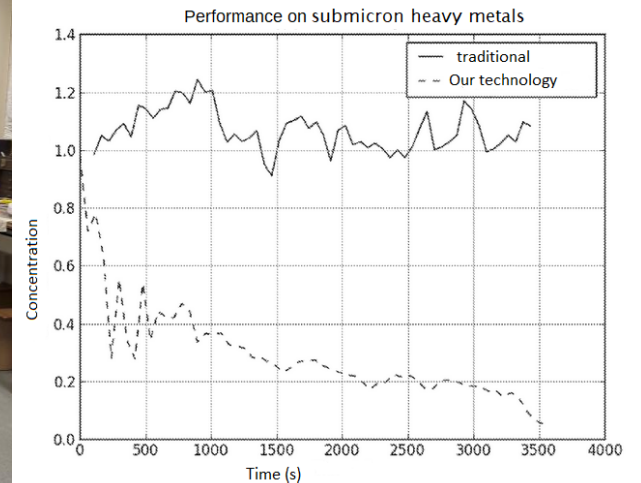
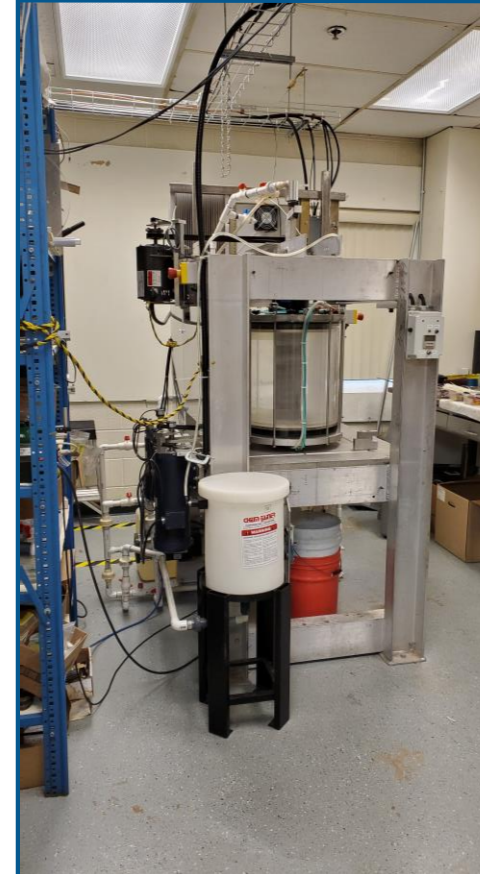
<https://diversican.com/>

Nominated by: Braid Theory

Diversican is a water separator company currently working on a centrifuge technology (separation technology) that can potentially separate down to sub-micron size (bacteria size) in large quantities.

Our market entry is ballast water treatment system where we enable ship operators to comply with ballast water treatment systems regulations by Sept. 2024 while stopping the spread of pathogenic bacteria and invasive species in a low-cost, low-maintenance, clog-free (no filter usage), and chemical-free treatment system.

Furthermore, we can combine multiple separation stages into one to save space, improve water purity/throughput, reduce installation costs/treatment costs, and reduce energy consumption for multiple water treatment systems such as wastewater and nuclear wastewater.



Scale Materials Inc.

info@scalematerials.com

scalematerials.com

Nominated by: OpenSeas Technology Innovation HUB

SeaScale: Antifouling Technology of the Future

- increase the operational efficiency of maritime vessels
- protect offshore energy systems from environmental damage

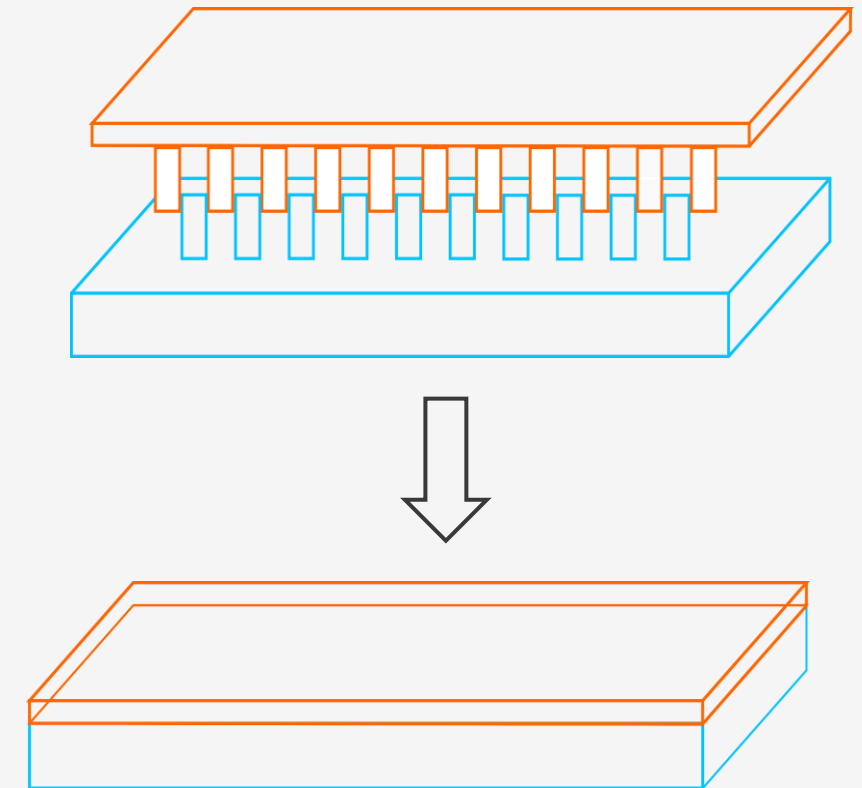
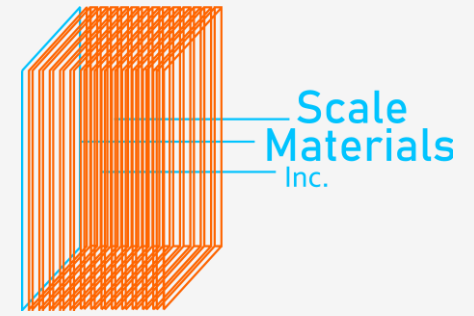
SeaScale coatings are grown directly on marine hardware using the revolutionary Scale Process.

SeaScale is not a paint. It is **fused to a surface at the molecular level**. SeaScale lasts.

Compatible with **any substrate material** and shape.

Fast and easy application.

Protection with a single coat.



Group 1 (11:10 – 11:46 am ET)



Info@nitricity.co

<https://www.nitricity.co/>

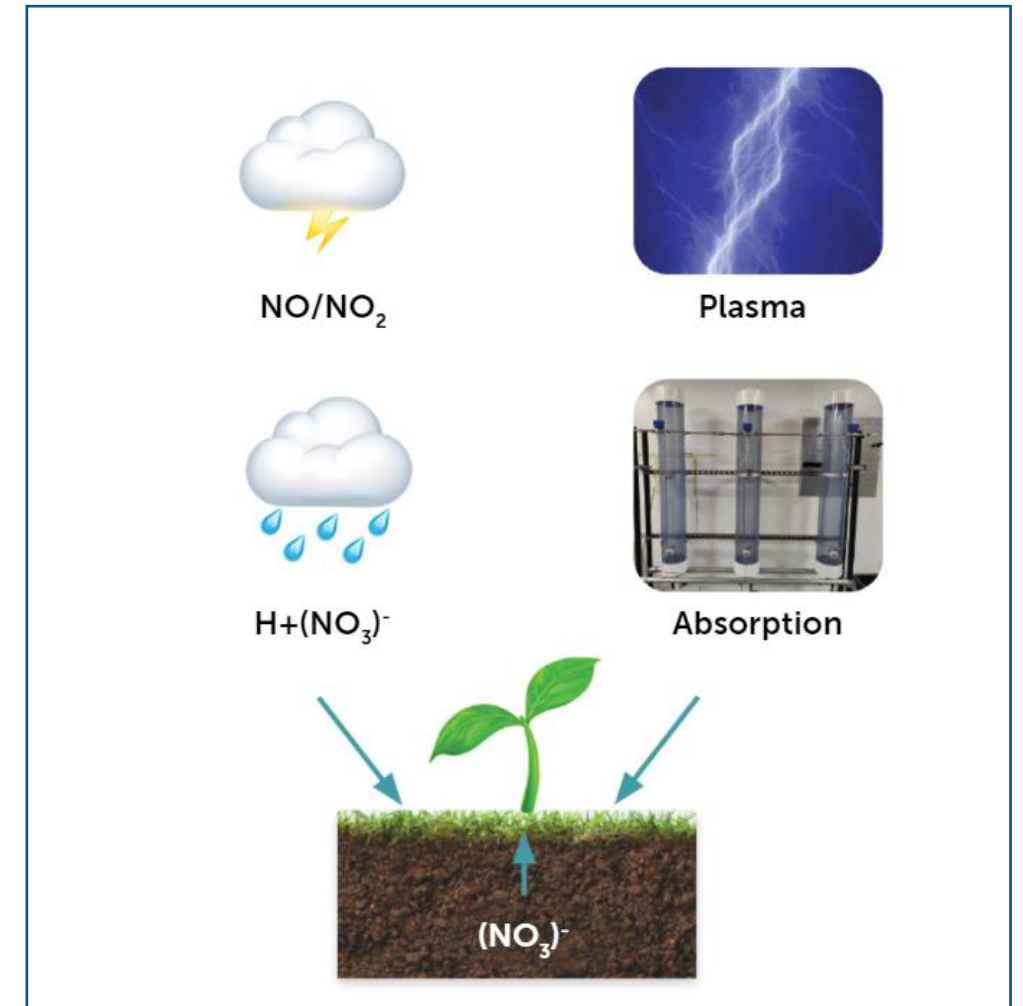
Nominated by: Black & Veatch

Nitricity produces climate-smart fertilizers from air, water, and renewable electricity.

Climate-Smart: The production, distribution, and application of nitrogen fertilizers today account for ~6% of global GHG emissions, most of which can be mitigated with Nitricity's technology.

Lightning Fertilizer: We electrify and distribute the fertilizer production process using a breakthrough plasma technology for fixing nitrogen that mimics natural lightning storms.

Farmer Focused: We provide sustainable fertilizers that are best for farmers and fields, rather than factories and freight.



MODULE



Brian@modulehousing.com

www.modulehousing.com

Nominated by: ADL Ventures

- **WHAT:** MODULE is disrupting the traditional approach of residential construction and development by delivering homes that are 80% more energy efficient and 40% quicker to market to solve the 4 Million home shortage.
- **HOW:** The Module Building System leverages an all-electric prefab product, an offsite construction playbook, and an ecosystem of last mile delivery partners.
- **TRACTION:** We've delivered over a dozen units, have a pipeline of \$21.5M, partnered with global product suppliers, are funded by strategic investors throughout the construction ecosystem.
- **SCALE:** Hub & Spoke Manufacturing, Network of Local Delivery Partners (Architects, GCs, Developers) and Productization.



Group 2 (11:50 – 12:26 pm ET)

Mary@firomar.com

www.firomar.com

Nominated by: Clean Energy Business Incubator Program

Firomar produces *cost, thermal & structurally efficient* FIROTHERM building envelope panels using advanced manufacturing technology; integrating structure, insulation, & all finishes in a *single-factory process*.

- One-of-a-kind:
 - Tested equipment: ability to produce up to 32,000 ft² of panels/day.
 - Largest panels available in the world, up to 30'x12'x1'.
 - Deliver and maintain R-Values ranging from 5 to 60.
- Target market:
 - Affordable Housing & multifamily building owners in the U.S.
- Support us:
 - Strategic partners to develop & fund manufacturing & pilots.
 - Seeking non-dilutive funding in government grants



Firomar's custom-built EPS/GPS block mold – *world's largest, successfully tested in Europe, ready to start production in US*

Group 2 (11:50 – 12:26 pm ET)

Kazadi Enterprises Ltd.



Contact Email: skazadi@kazadienterprises.com

Website: www.kazadienterprises.com

Nominated by: Imani Works

- Our patented heat pump technology uses water and salt to move heat technology allows us to harvest heat from the environmental and use it as an energy source.
- Maintaining the necessary difference in salinity in the heat pump is driven by environmental heat, which can be harvested using evaporation.
- Using these systems together we are reducing the electrical cost by up to 90% and virtually eliminating the greenhouse gas contribution of commercial refrigeration.



Plug Zen

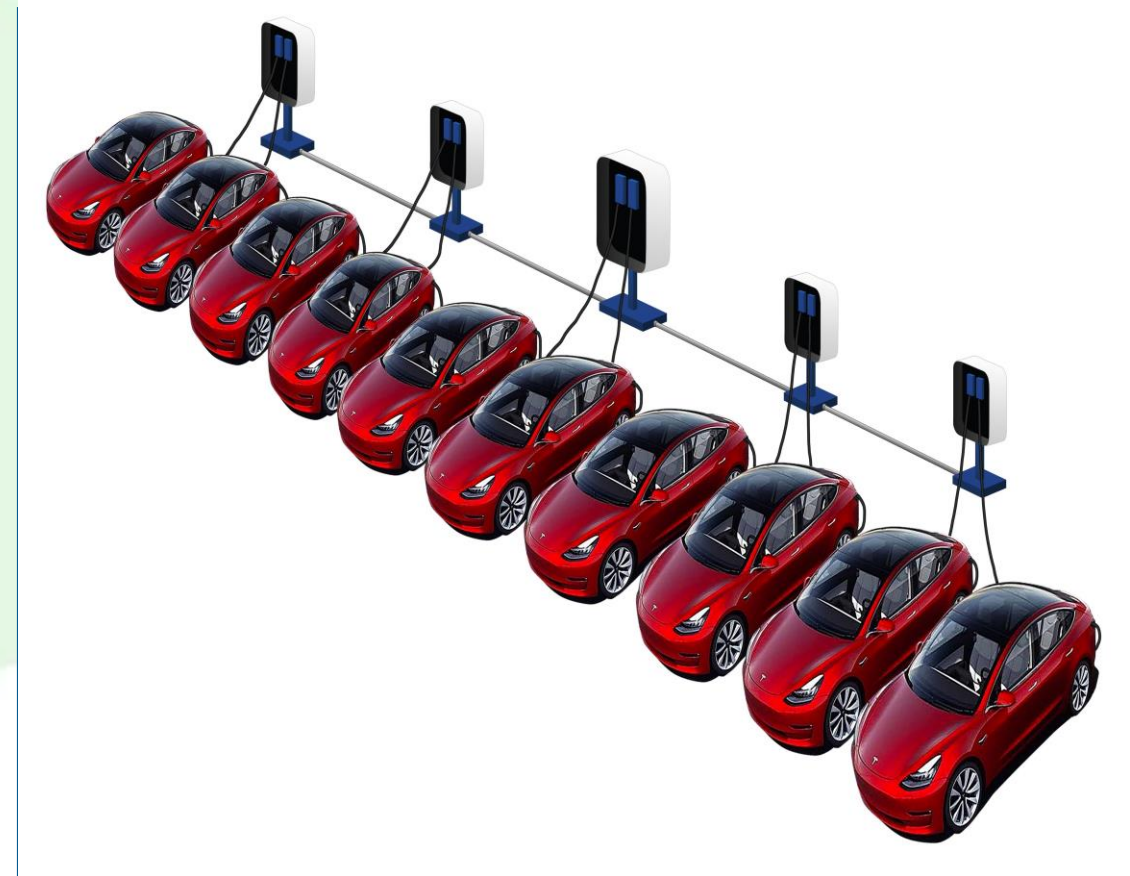


Contact Email: Qjohnson@plugzen.us

Business Website: <https://Plugzen.us>

Nominated by: VentureWell

Plug Zen manufactures modular electric vehicle charging platforms for multi-unit housing, commercial, and government use to solve the urgent need for an alternate, lower cost electric vehicle charging option. Our platforms have the unique ability to charge up to 10 vehicles via charging cable or inductive charging pads. Reducing equipment and installation costs by more than half.



Alex Kosyakov, CEO | akosyakov@natrion.co | (607) 208-7463

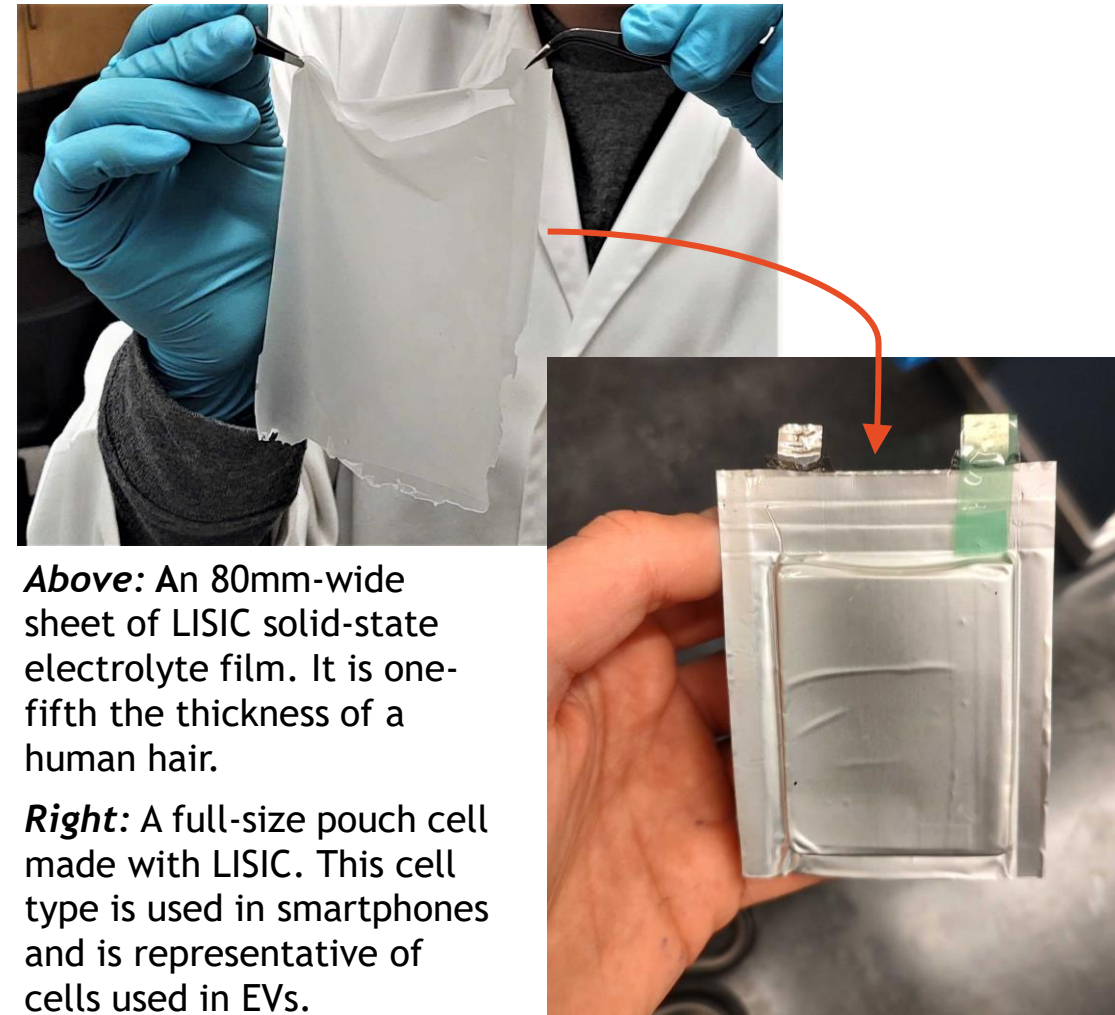
www.natrion.co

Nominated by: Koffman Southern Tier Incubator

Solid-state batteries (SSBs) are a promising development within the electric vehicle (EV) industry because they provide a safer alternative to conventional Li-ion batteries (LIBs). However, attempts to scale SSB production to the volumes required by mass-market EVs have so far proved unsuccessful due to inhibitive new process and supply chain requirements.

Natrion's new LISIC solid-state electrolyte material can be rapidly deployed on high-throughput battery gigafactory lines with minimal process or equipment modifications for safe, high, performance, and affordable mainstream market EVs:

- LISIC eliminates fire risk in batteries
- LISIC-using cells can achieve ≤ 30 -minute charging to 100%
- >50% increase in EV driving range on a single charge
- 30% reduction in material cost compared to current LIBs



Above: An 80mm-wide sheet of LISIC solid-state electrolyte film. It is one-fifth the thickness of a human hair.

Right: A full-size pouch cell made with LISIC. This cell type is used in smartphones and is representative of cells used in EVs.

“Solid carbon burial”

Carba’s proprietary technology converts biomass waste to solid char that is buried permanently underground

- **Low-energy:** the process uses <2% of the energy of other direct air capture approaches
- **High permanence:** char is physically and chemically stabilized underground for thousands of years
- **Better yields:** novel reactor design optimizes carbon yield to improve biomass utilization
- **Highly scalable:** modular reactors can operate anywhere and accommodate a variety of waste streams



Group 3 (12:30 – 1:06 pm ET)

Mars Materials, Inc PBC



aaron@marsmaterials.tech

<https://www.marsmaterials.tech/>

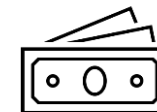
Nominated by: LabStart

- Mars Materials is commercializing NREL-developed carbontech, nitrilation, to produce acrylonitrile (“ACN”) from captured CO₂ and biomass.
- ACN, a \$12B commodity, is the primary input for acrylamide-derived (“AMD”) wastewater treatment chemicals (\$6B) and carbon fiber (\$4B).
- Compared to the incumbent process, Mars’ process eliminates price instability, petrochemical consumption, toxic by-products and safety concerns.
- Mars Materials has furnished sample material to all three global AMD manufacturers, as part of initial vendor qualification, and is currently developing its pilot-scale facility in the Bay Area.

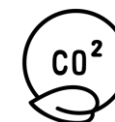
Mars Materials’ ACN



Price Stability



Utilizes Captured CO₂



Reduced CapEx



Fewer Process Emissions



Group 3 (12:30 – 1:06 pm ET)



Skylar Bagdon

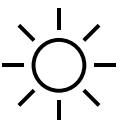
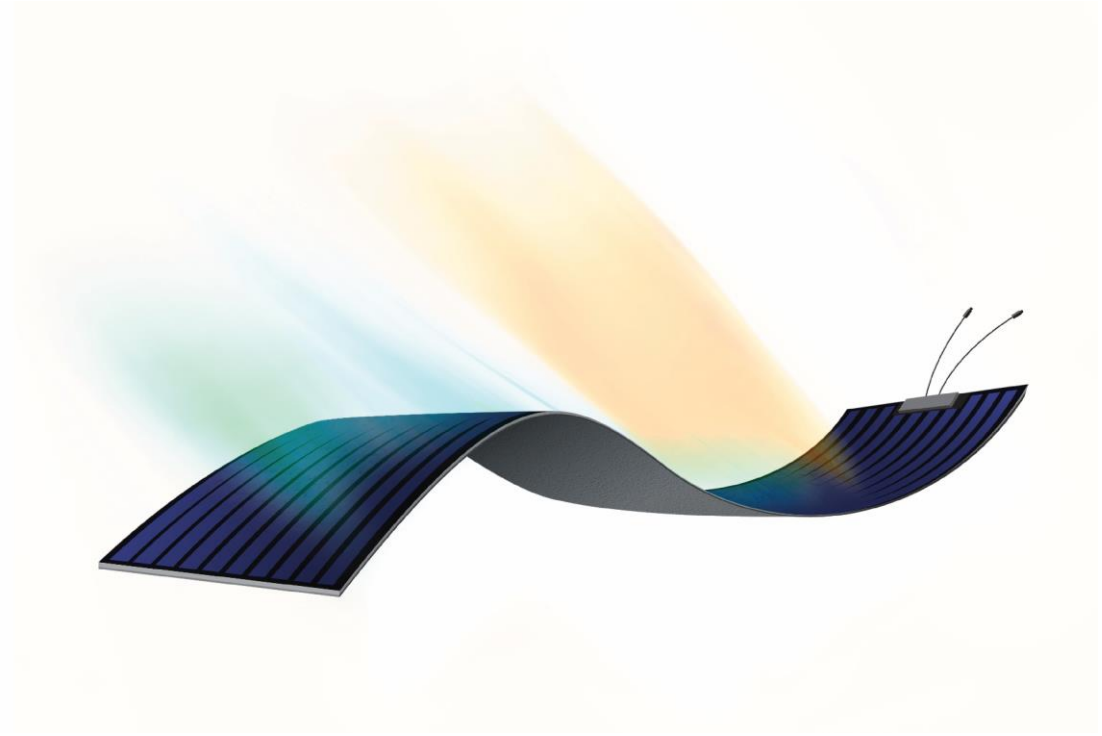
Skylar@verde-technologies.com

www.Verde-Technologies.com

Nominated by: IOT Conduit 

Verde is developing **thin-film flexible solar panels** that are **highly efficient** (up to 28%), **low-cost** (~\$0.20/W), and **10x lighter** than traditional rigid panels. Verde's panels can be **printed from liquid inks** at **existing coating factories** such as those used for newspapers. Verde has received **funding, awards, and technology** from the National Science Foundation, The US Solar Energy Technologies Office, and the National Renewable Energy Lab (NREL). Verde recently **won the Cleantech Open Northeast**, won the **Department of Energy's Perovskite Startup Prize**, **raised pre-seed funding from VCs**, and is now expanding their team, scaling manufacturing, and working towards executing their first rooftop pilot installation.

See Verde's video pitch [HERE](#).



OMC Hydrogen



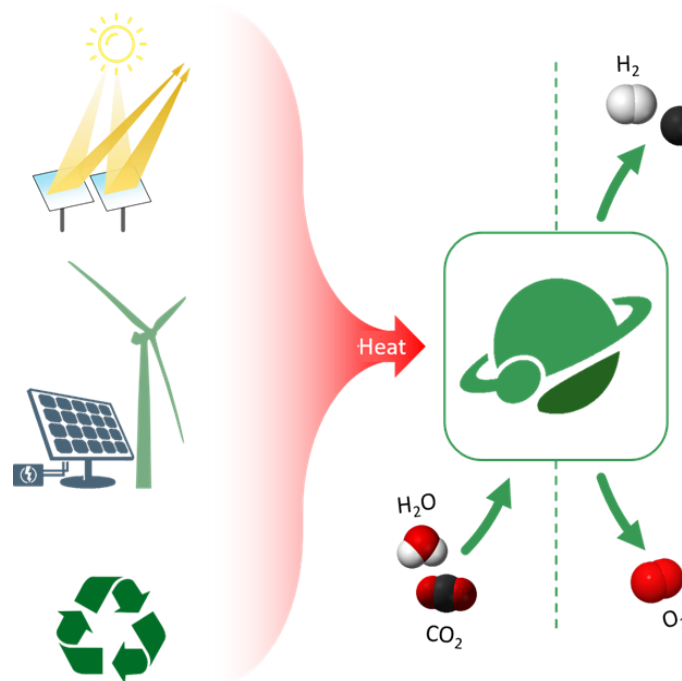
britt@omch2.com

<https://omch2.com>

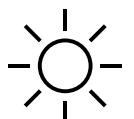
Nominated by: REACH Energy Accelerator

OMC uses heat from concentrating solar and renewable electricity along with low-cost, domestically common materials to simultaneously split both CO_2 and water into syngas, which can be upgraded into many valuable fuels and chemicals

- Far lower CAPEX and OPEX than competing electrolysis or reverse water-gas shift processes
- Scales well to integrate with existing industries
- Patent-pending active material and operating methods allow breakthrough efficiency levels, unlocking cost-effective products derived from concentrated solar power



Group 4 (1:45 – 2:30 pm ET)



Sunesta Solar

Daniel@SunestaSolar.com

SunestaSolar.com

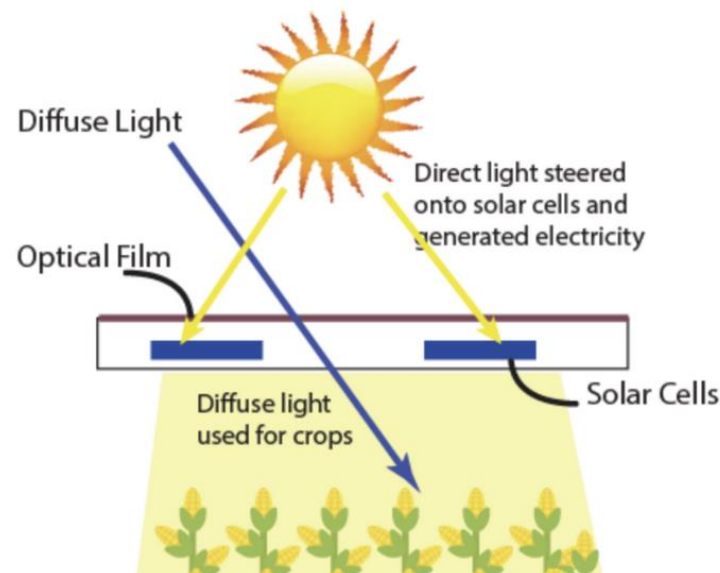
Nominated by: Pegasus Technology



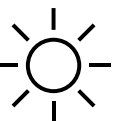
Our innovative solar module, designed with low-cost, light-steering optics, has the potential to revolutionize the way we produce both energy and food.

Benefits of Our Innovation

- 50% **D**ecrease in Water Usage
- 30% Increase in Plant Volume
- Extend Growing Season
- Protection from Weather
- Additional Harvests
- Generate Energy Revenue



Group 4 (1:45 – 2:30 pm ET)



SolTek Nano

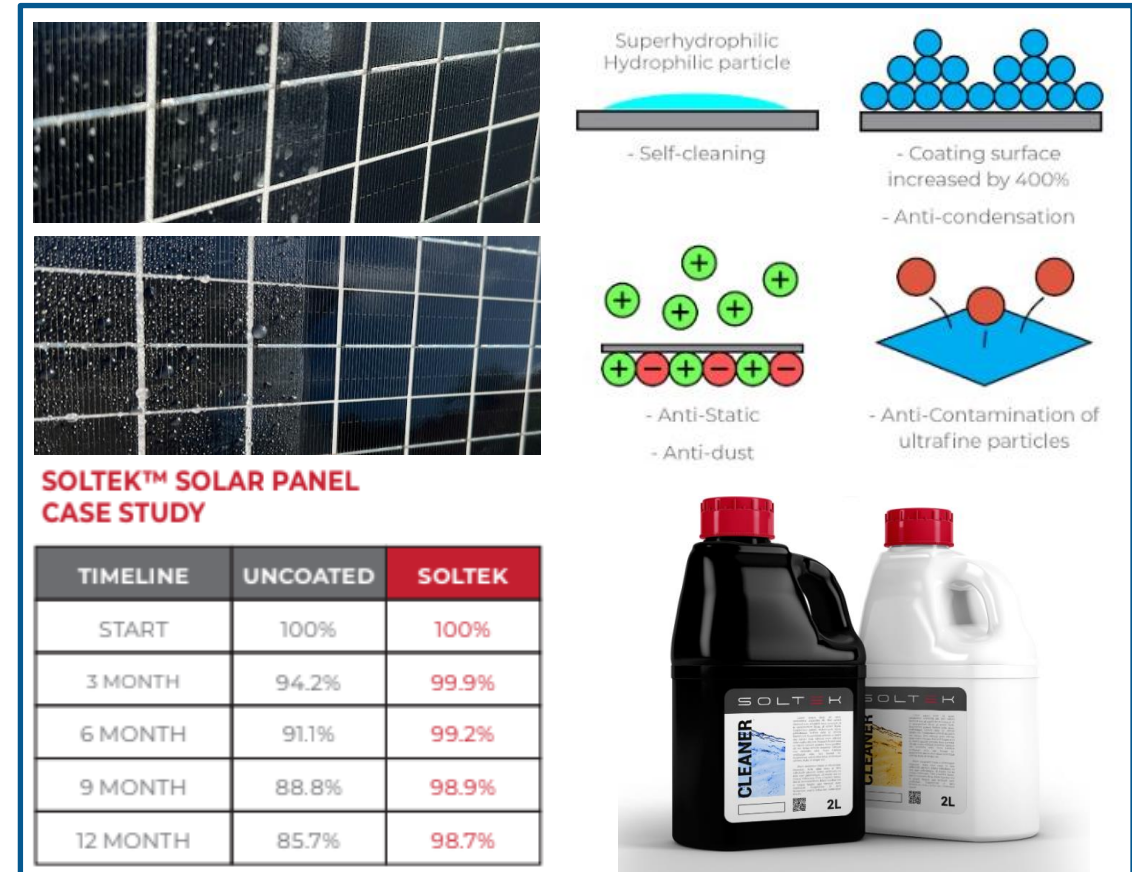
Contact Email: SolTek.Nano@gmail.com

Business Website: www.SolTekNano.com

Nominated by: Positive Deviancy – Embryia Accelerator

SolTek™ Nano is a nano-particle structure coating formula that is designed to be applied to solar panels to maximize efficiency.

- Coating acts as a barrier to reduce the accumulation of soiling on the glass while maximizing the amount of light transmitted to the panel
- Self-cleaning super-hydrophilic and photocatalytic properties to improve and maximize solar energy efficiency by up to 7%
- Anti-reflective properties improve light transmittance maximizing its power efficiency
- Anti-Static & Dust properties repel dust particles



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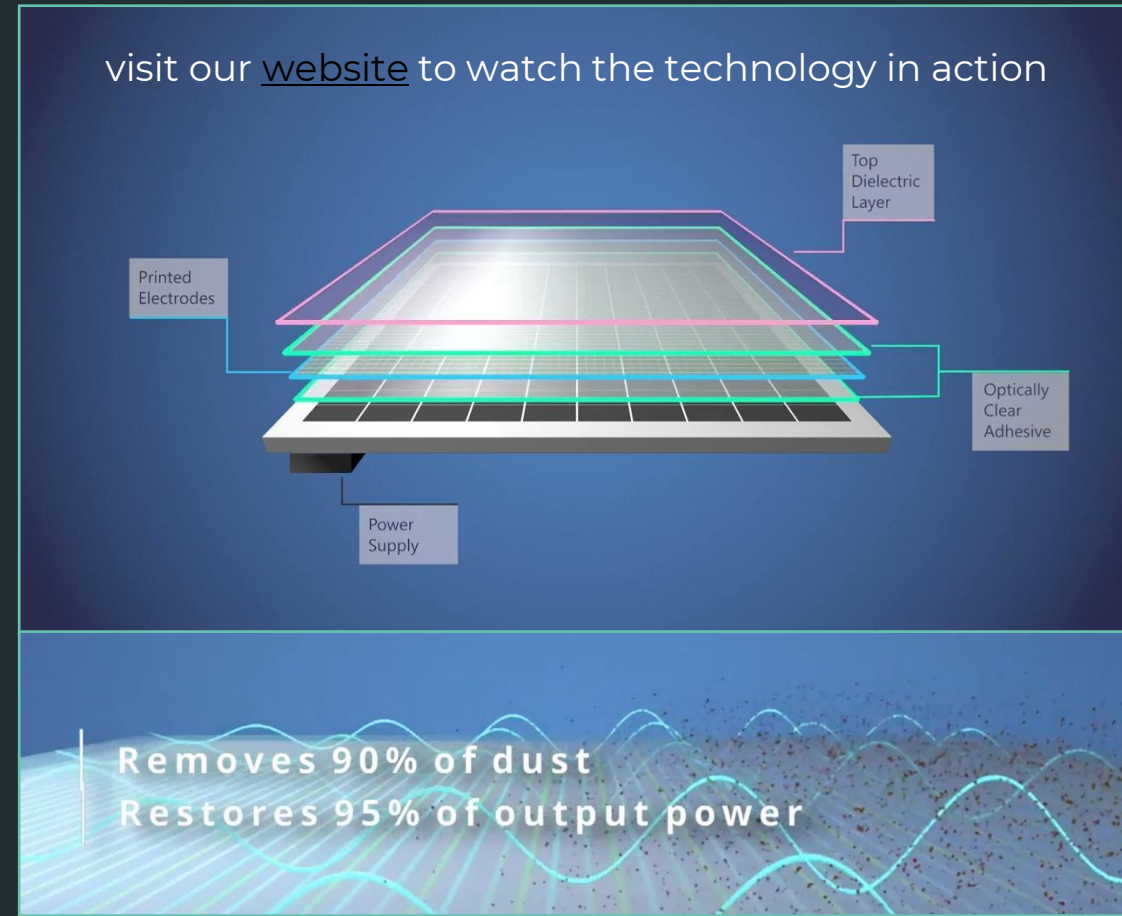
Email: admin@solclarityeds.com

Website: www.solclarity.com

Nominated by: FORGE (Greentown Labs)

Water-free, automated, non-contact solar cleaning

- Sol Clarity's patented technology, **Electrodynamic Screen (EDS)**, automatically removes dust and improves the energy yield of solar panels without using water for cleaning.
- The EDS charges dust with **static electricity** and sweeps it off the panel on-demand with a generated traveling electric wave.
- Our mission is to **advance the growth of solar** and **maximize sustainable electricity production**, fundamentally avoiding the resource conflicts that will develop over the growth of solar and the use of water for human sustenance.



Navia Energy Inc.



Contact Email: babu.jain@naviaenergy.com

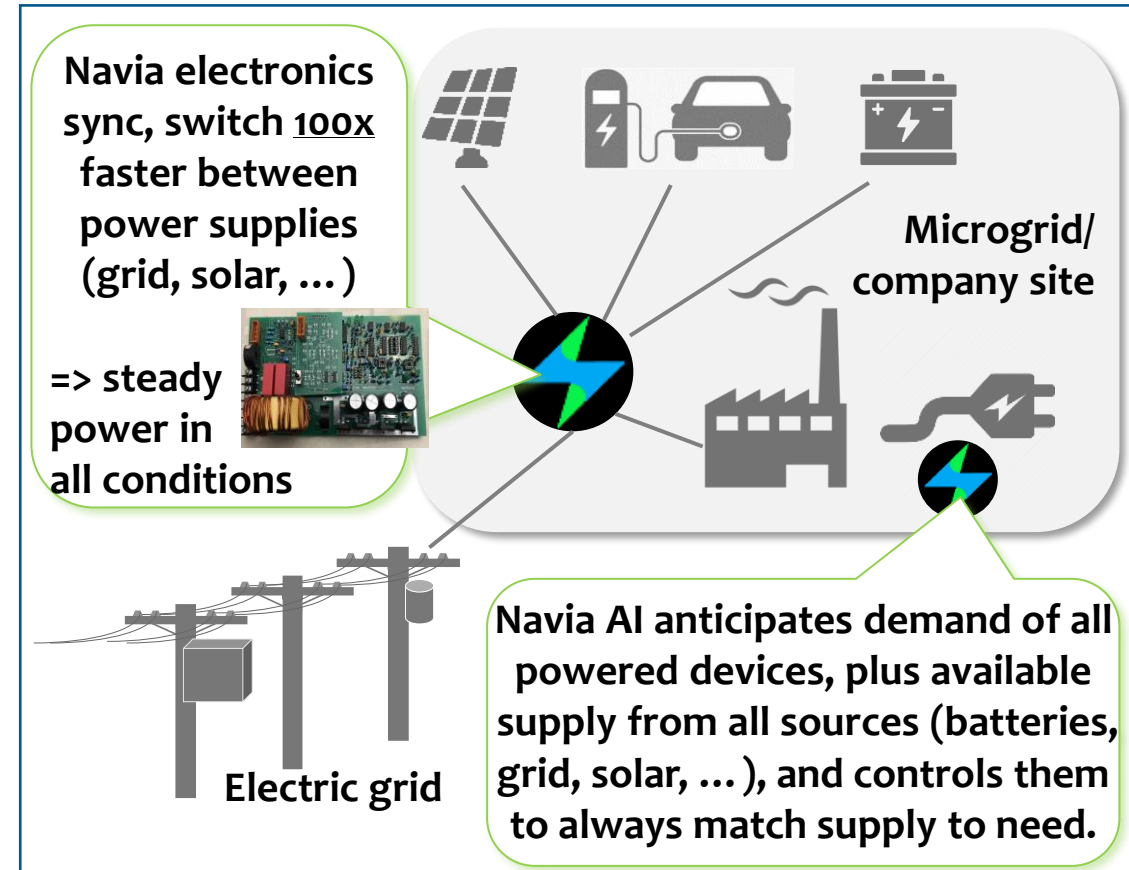
www.naviaenergy.com

Nominated by: LACI

Modern life needs electric power 24x7. **Navia ensures that power is ON every millisecond** as the use of green, variable energy (solar, battery, ...) grows. Navia hardware platform enables our AI to anticipate, match and plan energy sources, storage and consumption; it boosts electric grid stability & crisis readiness, cuts cost & carbon emissions, and speeds up electric vehicle roll-out & the transition to renewable energy.

Navia combines **1st principles-based re-imagined lean power electronics with software/AI, leveraging unique advantages:**

- **100x faster** sync/switch/match power need to any source
- **Serial founders:** 200+ yrs in energy, 25+ patents, \$\$\$M exits
- **2023 revenue** from U.S. Navy, India solar JV, 1st product
- **Fairer, faster, cheaper energy transition for all income levels**



BuildingLens Inc.



David@buildinglens.com

www.BuildingLens.com

Nominated by: (EPIC Prize Semifinalist)

“BuildingLens bridges the gap between people, technology, and the utilities supplying our energy by making edge devices smarter and keeping the utility meters spinning.”

TRACTION:

- The CEO grew up and is part of the community where BuildingLens launched.
- Converted Pilot into a **paying customer** AND **added four more** of their buildings to BuildingLens.
- Working with **3 Community-based Organizations** (CBOs) that serve disadvantaged and disabled people and **manage 1,750 buildings**.



David
Burchfield, PE,
CEM

Chief Executive Officer



Paul
Bursch

Chief Technology Officer



Teshome Jiru,
Ph.D., CEM

Chief Research Officer

Milestones

Year 1 – 50 Buildings, AirLens - V1, EnergyLens in Beta

Year 2 – 150 Buildings, EnergyLens in V1, 1 Utility

KPIs

100K – MRR, Installed in 200 Buildings, 1 Utility Contract

Funding Requirements

\$1.5M for a 2-year runway.



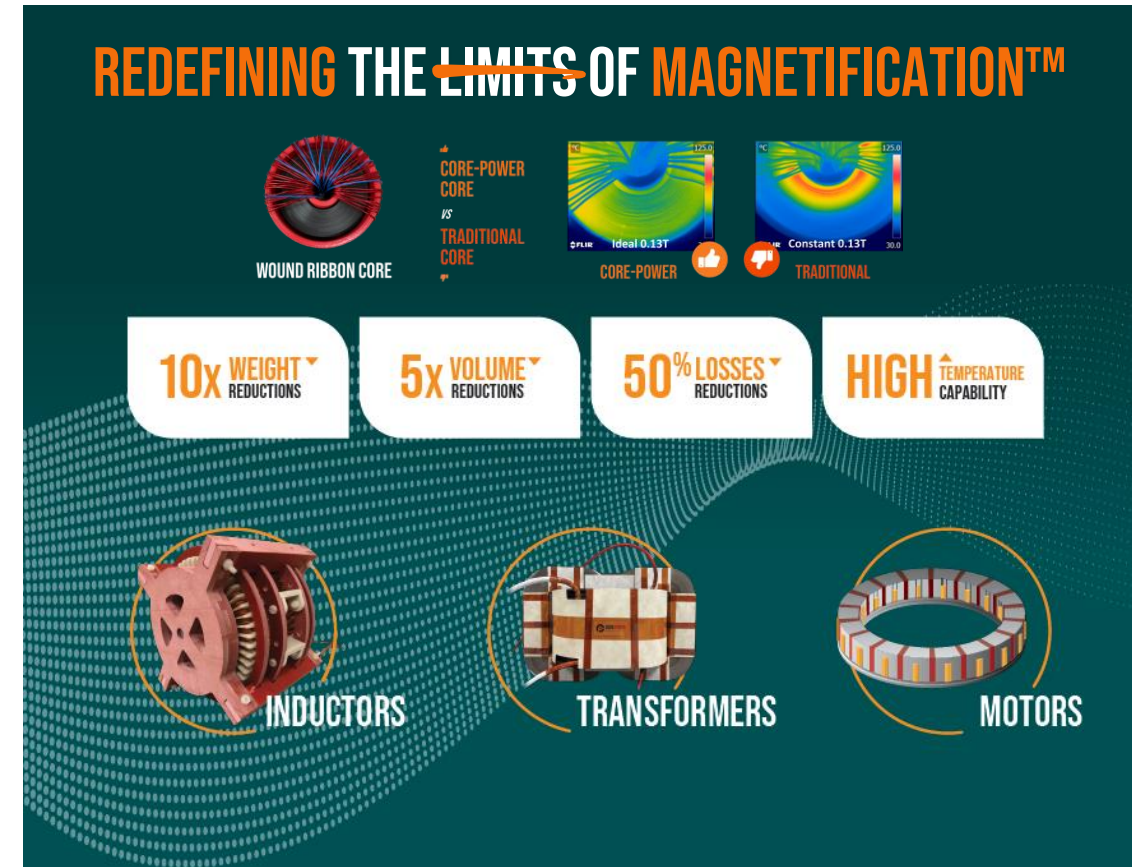
CorePower Magnetics

Contact Email: info@corepowermagnetics.com

Website: corepowermagnetics.com

Nominated by: Evergreen Climate Innovations

- CorePower Magnetics, designs, optimizes, and manufactures high performance electric motors, inductors, and transformers that are 10x smaller, lose half as much power, and can withstand next generation operating conditions.
- Its patented technology and components enable electric vehicles to travel farther and redefine the operational limits of the power grid to accelerate renewable adoption.
- Next round will enable installation of pilot motor facility and key hires for motor market, building on recent \$5M in non-dilutive funding from ARPA-E SCALEUP award.



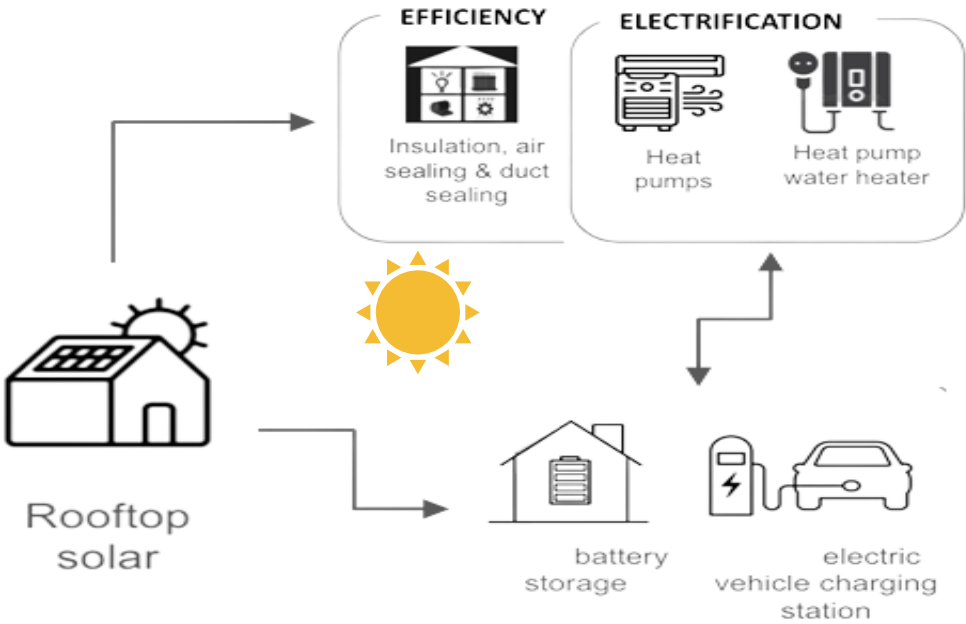
HARDWARE + SOFTWARE ALLOWING ANYONE, ANYWHERE ACCESS TO CLEANTECH



ASK: Gemini is seeking investment to improve the hardware to software integration

Feasibility Study for a customized behind-the-meter microgrid solution that utilizes bi-directional EV charging

01



02



Certified M&V report for building energy management companies through autonomous, remote, and continuous monitoring.



SOLUTION: Creating opportunities for rural and disadvantaged communities by reducing the training required to perform investment grade energy audits and expanding jobs in low-income areas impacted by the energy transition.



Contact Email info@linebird.net

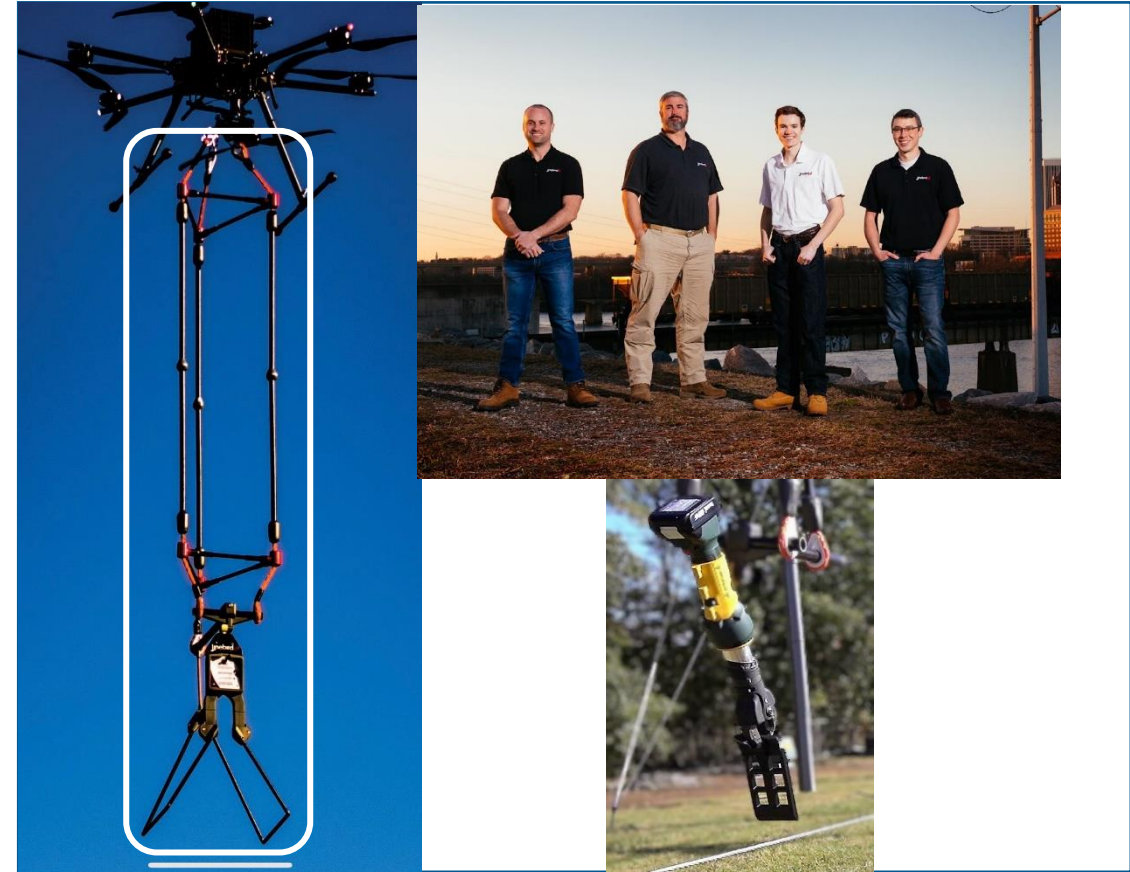
<http://linebird.net>

Nominated by: Dominion Energy Innovation Center

Linebird is a light manufacturer of Unmanned Aerial System (UAS) payloads, tools and equipment for performing hands-on work on live power lines.

We make overhead electric infrastructure more accessible to those who own and work on it, by increasing worker safety and productivity while reducing operational costs and carbon emissions as well as barriers to entry into the utility workforce.

This comes at a crucial time in the industry when the grid needs an enormous amount of work to transition to a net zero future. First adopters began flying missions on T&D systems in 2022 and are ramping up in 2023.





miket@brashpower.com

www.brashpower.com

Nominated by: ClimateHaven (New Haven, CT)

- BRASH is developing a novel micro combined heat and power (mCHP) system to drive the energy transition to a renewable energy future and strengthen grid resiliency.
- High efficiency room heat, hot water and electrical power from 1 combustion cycle; to operate on hydrogen, renewable NG, etc.
- Homeowners compensated for surplus power sent to the grid.
- Estimates are that global mCHP market size to reach \$8B by 2029.
- Makes stronger case for intermittent energy sources like solar by generating electricity at night when solar power is dormant.
- Recently achieved controlled demonstration of heat/power generation (proof of concept).
- Patented technology; \$303K in investment to date

Argyle Earth (Low-Temp WHP)



Driving Industrial Decarbonization with Low-Temp Waste Heat to Power

www.argyleearth.com – info@argyleearth.com

Nominated by: Arrowhead Center / New Mexico State University

Technology: Argyle Earth is developing a system for converting low-temperature waste heat into electricity for less than \$0.08 / kWh. Solution is 28% more efficient than current state of the art at low-temperatures (<450F).

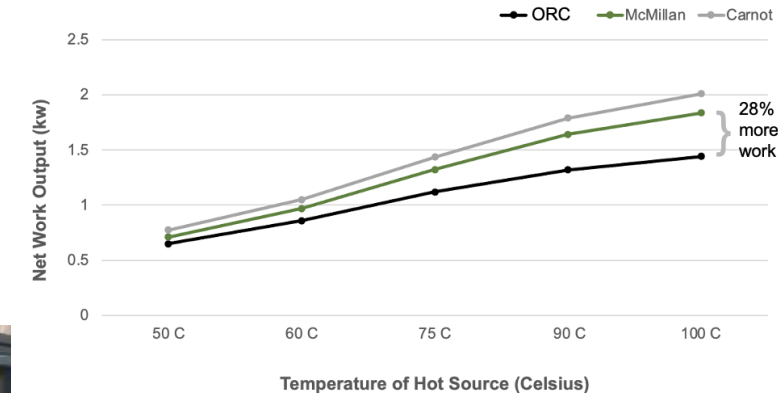
Business Model: Our "as-a-service" solution is designed for faster adoption by being small-scale and behind the meter, so it is fast and easy to implement.

Initial Target Market: We are targeting food manufacturers in California and New York, which represent a \$1.6 billion market opportunity. We then plan to expand to other manufacturing segments with low-temp waste heat,

Impact: Over 10 yrs. the scale of impact is estimated to be

- 4,500 WHP installations
- 1,800 GWh of electricity generated
- 800,000 tons of CO2 avoided

Comparison of Heat Engine Models across temperature differentials
(ambient = 25°C, using R134a)



Partnerships:

- Sandia
- SoCalGas
- NYSERDA
- Cornell COE Food & Ag
- Arrowhead Center



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We look forward to seeing you at the EPIC Showcase Pitch Competition.
If you have not already, [register here!](#)