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ENERGY INVESTMENT VILLAGE

The finalists: Green tech start-ups are innovative, viable, and investment ready

GREEN ENERGY AFRICA™ SUMMIT

The **Green Energy Africa Summit (GEAS)** has selected ten compelling local clean-tech projects as finalists in our **Energy Investment Village project.** They are motivated and ready to pitch for investment.

The **Energy Investment Village** is a partnership with the **Saldanha Bay Innovation Campus (SBIC),** an initiative of the Freeport Saldanha development zone, and advisory firm the **Research Institute for Innovation and Sustainability (RIIS).**

The finalists were chosen from a field of entrepreneurs and start-ups and will have the chance to present to **potential investors** at a pitching event on **5 October during the GEAS.**

“Green Energy Africa Summit is about connecting South Africa’s growing demand for innovative green energy with workable, bankable, local solutions. The **Energy Investment Village** helps facilitate this, and ensures good, viable ideas are not left behind.” –

Paul Sinclair, GEAS Vice President, Energy

“The pitching event allows investors, entrepreneurs and start-ups to find one another.

There are compelling, innovative and investment-ready clean energy initiatives out there, which can deliver attractive returns.

It’s a **win-win for all industry players.”** –

Kaashifah Beukes, Freeport Saldanha CEO

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> “Proudly pioneering the green hydrogen industry in South Africa.”

Keren Energy

Keren Energy is the first green hydrogen producer in South Africa. Their Proof of Concept plant is completed and running in Vredendal, Western Cape. They have started the feasibility study on their commercial plant in VanRhynsdorp, Western Cape. The Proof Of Concept site has a 100kW photovoltaic solar system installed and this renewable energy will be used as the primary energy to produce green hydrogen.

The VanRhynsdorp site is fully permitted. Keren Energy aims to be the first commercial green hydrogen producer in South Africa.

Impact

- GH2 can be used by logistics companies by converting their fleets from diesel trucks to H2 trucks
- Big mines can convert their current fleet of mining trucks from diesel to hydrogen
- Hydrogen can also be used in the manufacturing of green steel products

Solution:	Green hydrogen
Development stage:	Startup (Registered and trading / Research and development)
Website:	www.kerenenergy.com
Contact person:	Weyers van Rensburg
Email:	weyers@kerenenergy.com
Investment ask:	> R50m

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SeaH4
SUSTAINABLE BIOFUELS

> "Biofuels generated from farmed algae, supporting South Africa's net zero CO2 emissions and rural communities' development."

SeaH4

SeaH4 will produce biofuels from algae, using three well established technologies: farming of algae, biogas production, and gas processing. Their bio-LNG will leverage existing fossil fuel infrastructure.

Initially producing bioLNG as bunker fuel for the maritime sector and harnessing the team's combined 60 years of experience in this sector. Long term production of biodiesel and SAFs.

Impact

- Save 40.000t CO2e reduction per year (for a single plant) compared to burning diesel
- Enable a range of related industries to develop in the same area, using by products of the process
- Providing sustainable jobs to impoverished communities, who otherwise have turned to poaching of marine resources

Solution:	Biofuel
Development stage:	Start-up (Registered and trading / Research and development)
Website:	www.seah4.co.za
Contact person:	Johannes Bochdalofsky
Email:	jb@seah4.co.za
Investment ask:	< R10m

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HYDROFUEL SOLUTIONS(PTY)LTD
WE BELIEVE IN A HYDROGEN FUTURE

> Developing commercially viable green hydrogen.

Hydrofuels

HydroFuels Solutions aims to build and develop a hydrogen production infrastructure and to deliver clean renewable energy projects in different provinces in South Africa.

The Plasma Waste Gasification is one of the innovative technologies that can and will mainly produce green Hydrogen, green Methanol, green Kerosene and Electricity from biogenic sources as well as waste weedstock.

Impact

- Provide clean energy by using less water, energy and land needed in electrolysis
- Opportunity for Municipalities or private companies to use their waste as a source of low carbon energy
- Reduces waste currently being stored in landfills and converts it into energy for power generation

Solution:	Biofuel
Development stage:	Start-up (Registered and trading / Research and development)
Website:	www.seah4.co.za
Contact person:	Johannes Bochdalofsky
Email:	jb@seah4.co.za
Investment ask:	< R10m

Impact-free Water
wave powered desalination

> Translating wave energy to restore a scarce and precious resource - fresh water.

Impact Free-water

Impact Free–Water has developed a wave energy pump that uses wave energy to pressurise and pump seawater for the purposes of seawater desalination and electrical power production. Based on the client needs, the configuration of the implementation allows for a focus on fresh water, high volume sea water, or electricity.

Once installed, the only input required is the sea itself, and other than for an annual service, or any shore-based value add services, there are no costs.

Impact

- Provides electricity that is both environmentally friendly and more consistent than wind or solar
- Unlike other renewable energies, offshore wave energy is 24/7
- No land consumption, and thus can be used near major centres such as coastal industrial zones

Solution:	Biofuel
Development stage:	Start-up (Registered and trading / Research and development)
Website:	www.impactfreewater.com
Contact person:	Neil Parker
Email:	neil@impact-freewater.com
Investment ask:	< R10m

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> A solar energy solution for buildings that lack suitable roof space.

Slideluvre

SlideLuvre has developed a unique double-sided |solar slats that keep on generating energy even when in shade. It uses only high-efficiency SunPower solar cells and could yield up to 80% compared to rooftop solar energy.

The double-sided solar slats are also of significant benefit in reducing peak daily and seasonal demand loads, and could be used in tandem with rooftop solar to improve early morning & late afternoon generation profiles.

Impact

- A four-storey building in Cape Town reported a 42% drop in energy consumption and solar energy generation
- Over the Solution's lifetime of 30 years this adds up to 10 gigawatts electricity saved and generated and a 9.6 kilotonne CO2 saving

Solution:	Solar Energy
Development stage:	Pre-growth (Registered and trading, / Break-even)
Website:	www.slideluvre.com
Contact person:	Marlene Badenhorst
Email:	marlene@slideluvre.com
Investment ask:	<R50m

BRAYFOIL TECHNOLOGIES

"Designing the future of offshore wind."

Brayfoil Technologies

Brayfoil Technologies is designing the future of wind turbine blades – biomimicry-inspired compliant structures that change shape like bird's wings to enable larger turbines and lower costs of energy. The blades can generate peak power in operation, to drastically decrease storm loadings, thereby increasing the device lifespan and decreasing the cost of the components and support structures. The patented technology can be built into large wind turbine blades to reduce unnecessary loads, enabling larger, more efficient, more reliable and cheaper-per-MW devices. The first pilot turbine is currently being installed in Stellenbosch, Western Cape.

Impact

- Up to 24% decrease in operational loads, causing less wear and failure
- Performance increase in unstable winds
- Up to 90% lower storm-case loadings, preventing damage

Solution:	Turbine Technology
Development stage:	Registered and not trading (Undergoing research and development)
Website:	http://www.brayfoil.com
Contact person:	Matthew Bray
Email:	matt@brayfoil.com
Investment ask:	<R50m

> “Environmental pollution management begins at community level.”

PWK Waste Management and Recycling

PWK Waste Management and Recycling provides efficient and cost effective solution to waste management streams services as well as hazardous waste, through the collecting of recyclable waste from both commercial and domestic entities.

Work is currently being undertaken on the recycling of used oil from the informal motor mechanics in the Vhembe District, Limpopo.

Impact

- Ensures the environmental regulations are adhered to such as the extended producer responsibility regulation
- Create jobs, and eradicating poverty through waste collection and recycling

Solution:	Recycling & Waste Management
Development stage:	Pre-growth (Registered and trading, / Break-even)
Contact person:	Susan Kone
Email:	kone.susanl@gmail.com
Investment ask:	< R1m

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OCEANERGY

> “Making possible a mobile wind power plant on the open ocean.”

OCEANERGY (Pty) Ltd

Oceanergy has developed a Kite Fuel Ship technology, which is a ship-based mobile wind powerplant, to harvest wind energy on the open ocean, far from land. Smartly navigated, according to the wind forecast, they find a permanent and strong wind, resulting in a multitude of power and energy to harvest.

The Kite Gas/Fuel Ship is a renewable energy source, with integrated H2 conversion and storage, and logistics unit feed-in to H2 terminals, alternatively LNG or ammonia-terminals. Calculations show that the Kite Gas/Fuel Ship can harvest up to 160 times more wind power per annum than a land-based wind turbine.

Impact

- Environmentally friendly and operates at high production capacity factor levels (2 x current competitive technologies)
- Fuel production on the open ocean, no depletion of scarce resources such as water necessary for electrolysis
- Operations outside the Exclusive Economic Zones (EEZ), no geopolitical risk and no conflict with near shore areas

Solution:	Offshore Wind Energy & GH2
Development stage:	Start-up (Registered and trading / Research and development)
Website:	www.oceanergy.com
Contact person:	Tim van der Steene
Email:	vandersteene@oceanergy.com
Investment ask:	<R50m

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ATLANTHIA
(PTY) LTD

> Building South Africa's green hydrogen economy.

Atlanthia (Pty) Ltd

Atlanthia has developed an extensive and financially viable project for the production of GH2 and GNH3 to be located in the Saldanha Bay Industrial Development Zone (SBIDZ). Solar, wind and battery storage (BESS) will supply electricity to the hydrogen electrolysis (20MW), desalination, air separation and green ammonia forming processes, via the production of GH2 and green nitrogen. The pre-feasibility study, which was completed in 2021, indicated economic viability for export and favourable local conditions for the adoption of GH2/GNH3 in South Africa's hard-toabate (eg, steel, cement & glass), transportation fuels (eg, marine, aviation and heavy trucking), clean fuels and chemicals sectors.

Impact

- Substitute the use of fossil-based electricity in its entirety with electricity from renewable sources
- A catalyst for the development of green value chains including green steel, cement and citrus production for local and EU markets

Solution:	GH2 and GHN3
Development stage:	Registered and not trading (Undergoing research and development)
Contact person:	Fergus Feltman
Email:	feltmanf@atlanthia.co.za
Investment ask:	> R50m

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Zimi Charge (Pty) Ltd

> Charge your electric fleet anywhere, with a single app!

Zimi Charge enables drivers to access e-mobility as a viable option for their daily commute, as well as for delivery networks looking to transition to electric fleets. The Zimi Charge app connects people, their cars, and charging stations. They are the first and only EV charging app available in the app stores in South Africa that can be used to charge your car.

You can charge your car at any Zimi charging station on the network with a single app with no need for multiple access cards. You charge your car with 100% renewable energy procured from energy trading partners. It is 10X faster than home charging, and costs more than 40% less than filling up with fuel.

Impact

- Reduces carbon emissions by replacing fossil fuels used for EV charging with renewable energy sources
- Providing a suitable environment for more consumers to buy an EV by reducing two of the major barriers - price and range anxiety

Solution:	Electric Vehicle Charging
Development stage:	Registered and not trading (Undergoing research and development)
Website:	www.zimicharge.com
Contact person:	Michael Maas
Email:	michael@zimicharge.com
Investment ask:	< R10m

2022 SUPPORTING PARTNERS

ORGANISER
The Energy Investment Village, in partnership with Saldanha Bay Innovation Campus and RIIS.

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