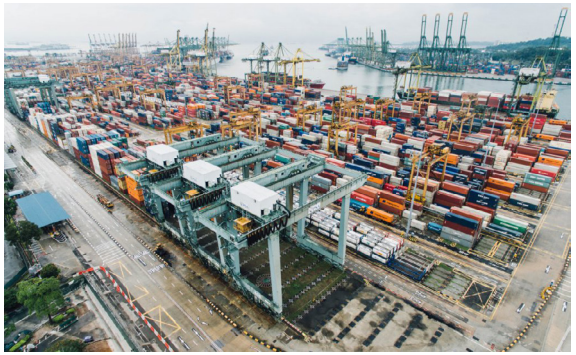
BlueNode

Data (Carbon) Visibility for the Global Supply Chain

Halifax, Nova Scotia, Canada
www.bluenode.ca



Problem

Maritime supply chain data systems are dated and disconnected. Unreliable data impedes cargo visibility; impeding operations, and compliance. Deficiencies imperil public safety and failing to optimize constraints such as decreasing CO2e.

Solution

BlueNode offers artificial intelligence software to improve decision making to enable improved throughput, operations, compliance, ESG reporting across supply chains; aligning the flow of information with the flow of trade goods.

Business Model

Target Customers

- Business model includes marketing to primarily to ports & terminals, shipping lines, and government.

Channels

Word of mouth, white papers and advertising industry outlets, trade shows, conferences

Potential Revenue Streams

- scaled pricing software as a service yearly subscription @ $200K 4 large customers

Ocean Impact

The Oceans are the biggest supply chain corridors on the planet where decisions are using too little information that is often late and error prone.

BNSuite decision support software for marine pollution response implementations with 6 ports around the world using analytics for:

- maritime supply chain optimization,
- dangerous goods & essential commodity tracking,
- risk mitigation, and
- CO2e analysis, reporting, and decision support.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

In mid Q4 2022/Q1 2023: complete release of BNSuite 2.0 and complete carbon model tool v 1.5. Initiate automated onboarding to reduce implementation time. Update UI to new functionality.

Three Greatest Needs in Next 12 Months

Q2-23: BNsuite integrate Carbon Tool; begin rail/truck modal optimization tool; Q3-23 V3.0 of BNSuite - risk/optimization function; automated onboarding tool. Q4-23 complete and integrate rail/truck model optimizer.

Industry Information

Shipping is irreplaceable as the carrier of world trade. The capacity of seaborne transportation to move goods and materials from where they are produced to where they will be consumed underpins contemporary trade, business operations and consumer experience globally.

Shipping/Maritime Supply Chains need to optimize efficiency & improve sustainability & effectiveness. This redesign requires accurate & timely data and reporting to enable improved prediction and informed decisions.

Technology & IP

BlueNode, Inc. has complete freedom to operate and owns all associated intellectual property associated with all technology solutions it offers, including those described in this application.

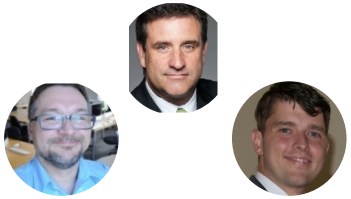
BlueNode is currently working with intellectual property lawyers investigating both business patent and technology patents. Currently, all intellectual property is protected as trade secrets.

Team

Louis Beaubien
CEO

Grant Wells
COO

Richard Pannell
CTO



TRABUS

Ripplego

First AI-Based Voyage Planning System for Inland Waterways

San Diego, CA, USA
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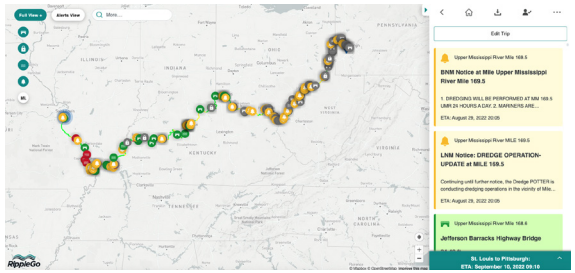
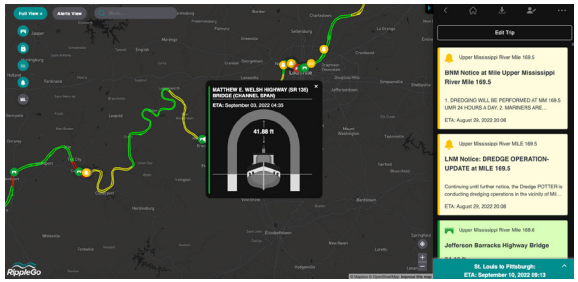
@ Trabus_Tech





Problem

Maritime transportation data sources are not optimized for real-time decisions affecting voyage planning and intermodal supply chain logistics resulting in wasted time, lost revenue, late deliveries, congested harbors, and nonoptimal loads.

Solution

RippleGo is an AI-based voyage planning tool which predicts ETAs, river levels, bridge air gap clearance, while monitoring river traffic conditions, lock status, and marine safety info to optimize both vessel utilization and economic efficiencies.

Business Model

Target Customers

- Barge Operators
- Commodity Owners
- Ports, Supply Chain and Insurance companies
- Gov't agencies

Channels

B2B through subscriptions, integration partners/VAR, one-on-one sales & trade shows

Potential Revenue Streams

Software as a Service via:

- Subscriptions
- Integration partners/VARs
- Local-based advertising
- Enterprise partnerships

Ocean Impact

RippleGo will improve efficient intermodal/warehousing support to make ports more efficient and sustainable. Ships and barges are greener and more cost effective than rail or truck with a potential to save more than $7B annually.

However, current tools do not optimize waterway transit. Each hour of idle time costs $749/hr resulting in $44M wasted each year" (USDA report) RippleGo will improve port management logistics and situational awareness with accurate and optimized vessel scheduling.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

Currently beta testing MVP with 5 barge companies. Integrating with 3 software firms for immediate sales.

Next steps: Enterprise Dispatcher System and Transoceanic-River Transit Optimization tools.

Three Greatest Needs in Next 12 Months

1. Launch aggressive sales and marketing operations
2. Product enhancements
3. Scale pipeline aboard and complete foreign patents.

Industry Information

The Maritime Industry is $169B industry (2020) with US Market as largest (6.65% CAGR). Maritime info market: $1.6B by 2026; increasing 9% annually.

While the maritime industry has grown over recent years, better coordination between maritime assets is of critical importance. Capabilities are needed to assist in planning voyages on the waterways.

RippleGo can digitize the waterways with prospects in US, Latin America & India.

Technology & IP

Patented AI-based framework and tools (domestic and international). No similar capabilities exist for "brown water" maritime industry.

Hours of voyage planning now compressed to seconds. Product roadmap includes dwell times, detection of nefarious activity, and intermodal synchronization. No competing product that combines forecasts and real-time information in voyage planning.

Team

Arthur Salindong
CEO

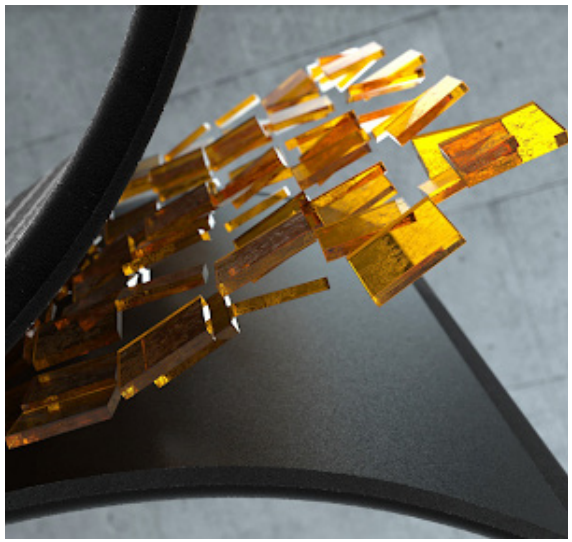
David Sathiaraj
Chief Data Scientist

Joseph Celano
VP of Product Management

Lios

Smart Acoustic Material

Dublin, Ireland
lios-group.com
sound-bounce.com
linkedin.com/company/liosgroup



Problem

We live in an increasingly noisy world.

Traditional acoustic materials are thick, heavy and ineffective. Increasingly stringent noise regulations and a drive towards sustainable materials is driving demand for new materials.

Solution

SoundBounce is an advanced acoustic material that reduces noise and vibration more effectively than existing materials, particularly at low frequencies. It is 4X thinner, non-toxic, has a low environmental impact and is recyclable.

Business Model

Target Customers
Acoustic material integrators, OEMs in:

- Power generation
- Automotive
- Home appliances
- Aerospace
- Construction

Channels
Licensing model - using established materials manufacturers to supply market leading OEMs.

Potential Revenue Streams
Chemical partners manufacture on licence, and OEM partners fund joint development & licence end use.

Ocean Impact

Noise pollution in the ocean has dramatically increased in the past 50 years, causing devastating damage to ecosystems.

Noise caused by vessels, sonar, and seismic tools impedes the communication and survival of sea life. The drone of commercial shipping lanes is altering ocean life behaviour causing chronic stress, changing migration and dive patterns, and leading to demise. SoundBounce has a low environmental impact, durable, non-toxic, and recyclable, making it a viable solution for ocean life.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development
Next phase is pilot production. Testing to date has demonstrated stability of the active material and feasibility of the product design. Pilot production addresses the increased scale of the technology.

Three Greatest Needs in Next 12 Months
Currently fundraising for scale up and pilot production. Need a pilot production partner with relevant scaled manufacturing expertise. Expansion of Lios team to include more project engineers and production engineers.

Industry Information

The acoustic materials sector is highly consolidated. The small number of industry leaders are highly competitive, with considerable R&D spending.

Our market spans the chemical, automotive, construction, aerospace, and home appliance industries. Prospective customers are large multinationals seeking new acoustic technologies for a competitive edge in their field.

Technology & IP

Possess substantial IP assets. Use a multi-pronged IP strategy combining patents and know-how to make SoundBounce challenging to replicate. Patents granted in Europe, the USA, Australia, and Hong Kong. Filed further patents to cover working with industry partners. Formulation, fabrication, structure, and composition of SoundBounce is managed as a trade secret. SoundBounce is Trademarked.

Team

Rhona Togher
CEO

Eimear O'Carroll
CTO

Ultan O'Raghallaighl
Commercial Director

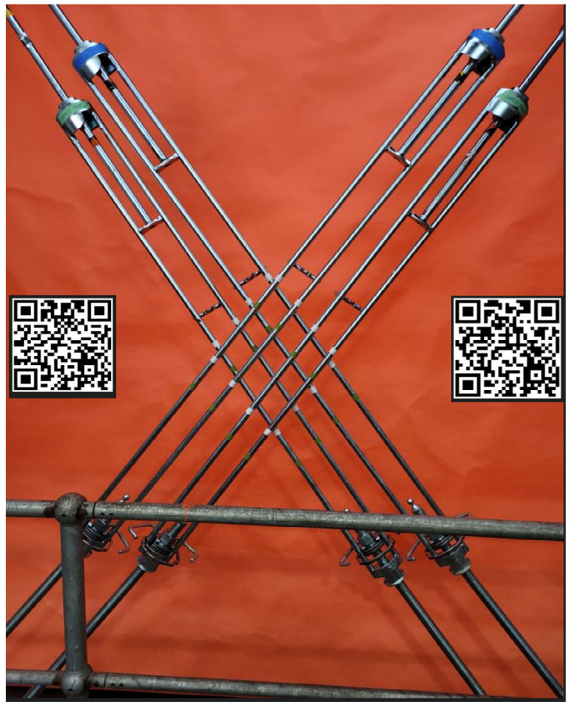
OCEAN EXCHANGE

MODALINTA

Modalinta

SafLash: Safe, very fast, practical ships lashing

Singapore
modalinta.com



Problem

Lashing causes 40% of port injuries and prolongs time in port. SafLash eliminates idle time. Containerships cuts port stays by 2.5 hours, other classes by 30 minutes, saving millions of tonnes of fuel each year.

Solution

SafNet launches and stows automatically cutting >30 minutes from a stay. SafLash is 3x quicker, 60% less effort and safer.

Last line to first box in 8 minutes. Last box to labour ashore eliminated. Both are fitted during a normal port stay.

Business Model

Target Customers

- SafLash: Top 20 Container shipping operators
- SafNet: All Cargo vessels over 900 tonnes

Channels

- SafLash: Direct offer with incentives from Top 8 Terminal Operators
- SafNet: Direct Sale to vessel

Potential Revenue Streams

- SafLash: Free to vessel + small maintenance charge
- SafNet: Sell direct

Ocean Impact

- Social License: Remove source of 40% of injuries in Port
- Pollution: Eliminate 24.2 million tonnes of CO2/ann
- Open dockwork to a wider demographic
- Save the industry ~$6.3 Bn/annually
- Make world trade more efficient

Solution Roadmap

TRL Level - 8

Immediate Next Steps in Development

- Certify Design Nov
- Funding complete Dec
- Net Prototype Dec
- Sea Trials Q1 2023 (New Zealand)
- Singapore based trials July 23

Three Greatest Needs in Next 12 Months

1) **People:** Hire, train and empower the trials team for Singapore. 2) **Production** support for start-up of Canada joint venture. 3) **Formalise deal:** to lock in the major Terminal Operators our Funder and the main shipping lines.

Industry Information

85% of goods go by container ship. Lashing is mandatory, manual, dangerous and causes most idle time in port.

Fixing lashing will save billions, cut pollution in port and at sea and prevent a major cause of container loss.

We are positioned as partners to the Port and Shipping Industry. We have excellent traction with our target market, mainly through affiliate introduction. We have a partnership with the world's leading lashing company, strong relationships with port operators and shipping lines.

Technology & IP

- Lashing has multiple patents in two families
- Net is Patent pending
- Deck management algorithm patent in draft
- AI based injury avoidance algorithm will be patented

We plan to license incumbent manufacturers to acquire capacity.

Retrofit is a new and larger segment and allows greater scale in manufacture.

Team

Robin Bean
Founder & Inventor of SafLash

David McNaught
Business Development

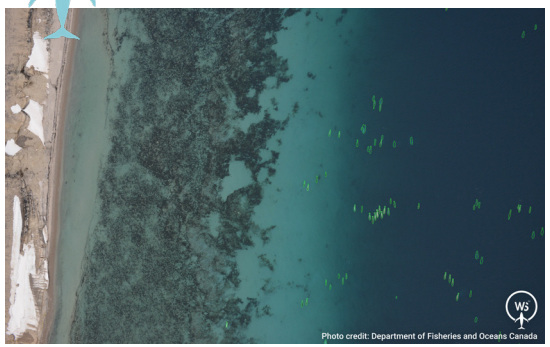
Alexander Bean
Intern & Net Co-Inventor

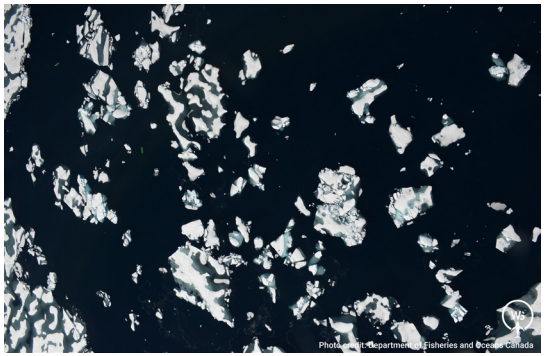
OCEAN EXCHANGE

Whale Seeker

Marine Mammal Detection from Imagery Using Ethical AI

Montreal, Quebec, Canada
whaleseeker.com
linkedin.com/company/whaleseeker/
@Whale_Seeker





Problem

Maritime industries are increasingly in conflict with whales. Reliable whale detection is needed for meeting sustainability goals, regulatory compliance, and understanding overall ocean health. Current methods are slow and unscalable.

Solution

An AI-based system that complements human expertise in order to quickly and accurately detect whales from aerial imagery. We work with diverse ocean stakeholders to integrate our technology into innovative whale blue carbon initiatives.

Business Model

Target Customers
Maritime transport and energy, government and regulators, environmental consulting, conservation

Channels
Business to business, business to government, collaboration with research and nonprofit

Potential Revenue Streams
Image analysis service for marine mammal detection, bespoke forward-facing automated monitoring

Ocean Impact

We create accessible, reliable and scalable whale monitoring tools for growing whale populations, informing conservation policy, and reducing negative impact.

We are spearheading initiatives to recognize the carbon sequestration value of whales. Our democratisation of whale data lowers the barrier for diverse ocean stakeholders to take conservation action. As a Certified B Corp, we place the ethics of data collection, labelling and usage at the forefront of our technology development.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development
1. Scale AI bulk image analysis tool 2. Expand our service to new regions and species 3. Pilot real-time detection using infrared imagery 4. Collaborate on developing whale carbon accounting system

Three Greatest Needs in Next 12 Months
1. Funding for scaling: expanding our team and hardware for scaling processing capacity 2. Visibility and mentorship for reaching new clients 3. Collaborators for real-time pilot projects and hardware partners

Industry Information

Aerial data is used extensively for ocean wildlife management. The status quo is manual revision, which is slow, unstandardized, and non-auditable. We are the only firm developing AI exclusively for whale detection.

The timely delivery of survey results is essential for making important operating decisions, particularly when whale location data are rapidly needed for dynamic decisions, such as for fisheries and shipping lanes management.

Technology & IP

Whale Seeker is the sole proprietor of all background IP required to develop, maintain, use and deploy our AI tools. All IP derived from the development of our solutions is also Whale Seeker's property. We publish in peer-reviewed journals to increase trust in our systems, use trade secrets whenever possible, and will consider patents for specific technological advancements.

Team

Emily Charry Tissier
Co-Founder & CEO

Antoine Gagné
Co-Founder & CTO

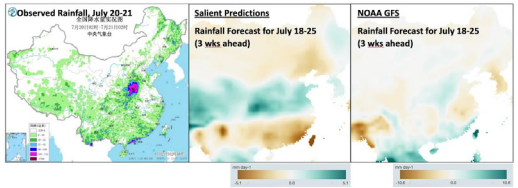
Bertrand Charry
Co-Founder & Lead Biologist

Salient Predictions

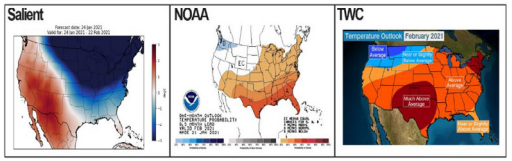
Ocean Intelligence for Superior Long-Range Weather Forecasts

Falmouth, MA, USA
salientpredictions.com
linkedin.com/company/salient-weather
@ salientpredict

Salient correctly predicted the July 2021 flooding in China 3 weeks ahead while NOAA predicted drier conditions. Salient also correctly predicted the current 2022 drought in China.



Salient anticipated the February 2021 Texas Freeze one month ahead whereas NOAA and The Weather Company predicted warmer than normal conditions.



Problem

Regular weather forecasts are limited to 10 days, yet many business and societal decisions would benefit from accurate forecasts weeks, months and seasons ahead.

Solution

Salient is using new insights into the important role of the ocean in our climate system and the latest in Machine Learning tools to deliver superior weather forecasts at 2 to 52 week lead times.

Business Model

Target Customers
Enterprise customers in:

- Agriculture
- Energy
- Insurance
- Supply Chain

Channels
Our weather forecasts are supplied on an Applications Programming Interface (API) to subscribers.

Potential Revenue Streams
Revenue to date = $488,000 from Agriculture, Energy and Insurance customers.

Ocean Impact

Wind forecasts over the ocean are inaccurate because of the lack of in-situ observations. Better wind forecasts will help improve navigation and the scheduling of expensive vessels.

Weather is the fuel for the renewable grid and improved wind forecasts will lead to the ability to better anticipate the power output of offshore wind farms.

Wind farms are best located in windy places, but they cannot be built when it windy, so better forecasts will help with construction and maintenance.

Solution Roadmap

TRL Level - 9

Immediate Next Steps in Development
Salient wants to develop accurate long-range ocean wind forecasts using records from meteorologial buoys of the Woods Hole Ocean. Inst. and our proprietary forecast engine based on Machine Learning.

Three Greatest Needs in Next 12 Months
1) Hiring the right people to service expanding customer base. 2) Expand our sales and marketing team. 3) Continue customer acquisition in our key industry verticals and expand sales to existing customers.

Industry Information

Salient Predictions is a weather prediction company in the Sub-seasonal to Seasonal forecasting range. This is defined as 2 to 52 weeks. While there are several companies in the short term prediction space (1-2 weeks) the forecasting space from 2-52 weeks is largely ours, since no one has been able to display the skill that we can on these time scales.

Customers:

- Energy: Avangrid, Orsted, Enel.
- Agriculture: BASF, Space-Time Labs.
- Insurance: Zurich

Technology & IP

1. Proprietary software using unique ocean - land teleconnections.
2. Proprietary Machine Learning Software.
3. Land surface Hydrology model licensed from Ken Westrick as condition of employment.

Team

Matt Stein
CEO

Ken Westrick
Head of Energy & Water

Anthony Atlas
Head of Ag. & Supply Chain

OCEAN EXCHANGE

Nabrawind Technologies

Modular Bottom Fixed Structure for Offshore Wind Turbines for Deep Waters

Pamploma, Spain
nabrawind.com
linkedin.com/company/nabrawind-technologies-sl
@nabrawind

Problem

Offshore accelerated growth based on current bottom fixed solutions have to tackle with limited installation vessels, ports and wind farms with deep waters.

Solution

The solution consists of a modular jacket (able to reach 120m water depth) whose components are logistic-friendly, quickly assembled in the port using maintenance-free bolted joints and transported and installed using a standard pontoons.

Business Model

Target Customers

- offshore wind farm developers

Channels

Direct interaction with customer for:

- homologation
- tendering (later)

Potential Revenue Streams

We will participate in the tenders for the large offshore windfarms to provide our goods/licenses.

Ocean Impact

The current exploitable surface with bottom-fixed structures would be doubled with the Large Modular Jacket. This would allow a significant reduction of CO2 emissions, limiting warming of the waters, acidification, oxygen reduction, etc.

On the other hand, the innovative installation process avoids the construction of new large welding factories in the harbors that are converted into simple outdoors assembly surfaces, with minor surface and impact in the harbor coastal systems.

Solution Roadmap

TRL Level - 3

Immediate Next Steps in Development

In 2022-2023 the preliminary design of the solution will be completed and the laboratory test executed: submerged maintenance free bolts will be tested and installation process validated in tank tests

Three Greatest Needs in Next 12 Months

1. to complete the test campaign for maintenance free connections,
2. to complete the tank test campaign to validate the installation process and
3. activate first commercial channels

Industry Information

Current offshore substructures (monopolies and jackets) are currently manufactured in large harbor-based factories. The size of these facilities usually limits the maximum size (and therefore depth) of the substructure. Additionally, the investment of these factories is very high.

Bottom fixed substructures are currently limited to 70m depth, and uses scarce and expensive installation vessels, so the industry looks for solutions for deeper waters and simplified installation.

Technology & IP

Nabrawind Technologies has applied for 22 patents, 3 of them applicable for the Large Modular Jacket:

- WO2015150594 - System and method to self install onshore/offshre towers
- WO2021084143 - Modular transition piece for wind turbine towers
- PCT/ES2021/070644 (w Ingecid) - System to transport and install an offshore superstructure

Team

Eneko Sanz
General Manager

Ion Arocena
Programs Manager

Blackfish Engineering

Decarbonizing Offshore Wind Marine Operations
Enabling Crew Transfer Vessel Offshore Charging

Bristol, UK
blackfishengeering.com
linkedin.com/company/blackfish-engineering-ltd

Problem

Decarbonization of wind turbine marine operations is essential to achieve global net zero targets. Electric vessels struggle to have required range so offshore vessel charging is necessary to enable to industry to develop.

Solution

An offshore charging solution installed on a wind turbine, enabling wind turbine operational vessels to charge batteries whilst working offshore. The solution uses existing turbine infrastructure to enable charging using renewable power.

Business Model

Target Customers

- Owners & operators of offshore wind farms, crew transfer vessels and ports

Channels

Direct supply to owners & operators of offshore wind turbines, crew transfer vessels and ports.

Potential Revenue Streams

- Hardware lease & sales, installation & commissioning, after sales service & support, data analytics.

Ocean Impact

In-air on-turbine charging is the only sustainable, cost effective, renewable energy solution that integrates with existing infrastructure, with no impact on ocean and human health.

Enabling electrification of vessels will

- improve air and water quality due to reduced emissions,
- conserve resources by using locally generated renewable electricity, and
- enable wind and other industries to achieve net zero targets.

Solution Roadmap

TRL Level - 5

Immediate Next Steps in Development

(1) Harbor trials of manufactured hardware - 4Q 2022. (2) Offshore installation and operation of prototype 2Q 2023 (3) development of follow-on solutions for other OSW vessels.

Three Greatest Needs in Next 12 Months

(1) Identifying and engaging initial customers, (2) Offshore technology demonstration to validate the solution in the right environment (3) Certification and regulatory approval of the new technology

Industry Information

Offshore Wind is growing exponentially and global installed capacity is estimated to be 1000 GW by 2050. By 2030 US emissions from marine operations alone could be as high as 127m tons of CO2. Decarbonization is essential.

The sectors that we specialise in (Wind, wave, tidal) have enormous potential to be the backbone of enabling the world to achieve net zero carbon emissions, but the engineering challenges of doing this are huge. As a result, Blackfish are providing innovative services and solutions to play our part in the energy transition.

Technology & IP

Our patent protected solution uses a charging system installed on a wind turbine, using the turbine generated renewable power.

Crew Transfer vessels connect safely without needing personnel interaction and can charge in operational downtime. The single cable connection to the vessel is managed using an adaptive tension control system, with integrated emergency release.

Team

Jon Powell
CEO

Tim Warren
COO

Ioan Smallwood
CTO

BeePlanet Factory

Energy Storage Systems Based on 2nd Life Li-Ion Automotive Batteries

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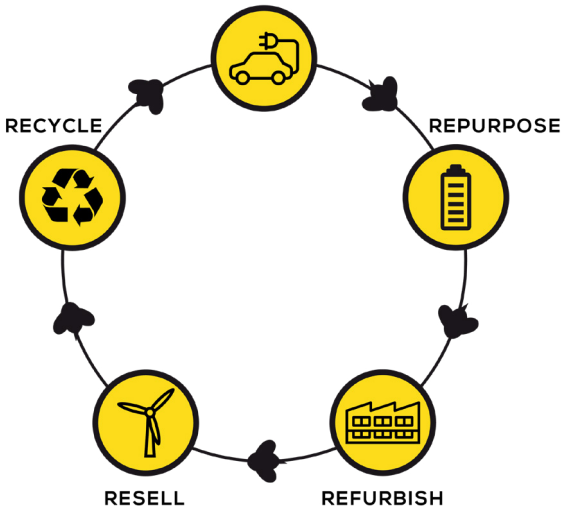
beeplanetfactory.com
linkedin.com/company/beeplanet-factory



Problem

In the next years, millions of depleted Li-Ion batteries that will be extracted from electric vehicles. We can give many of them a 2nd life in stationary energy storage systems before their final recycling process.

Solution

We recover and select depleted Li-Ion batteries from electric vehicles. Once the batteries have been selected, we build DC energy storage systems with our own BMS (Battery Management System) and our own EMS (Energy Management System).

Business Model

Target Customers

- Utility companies,
- Emobility operators
- PV solar installers

Channels

B2B: we focus on selling energy storage system through a few distributors or large clients

Potential Revenue Streams

- Hardware sales
- In future we will evolve to a subscription model of "battery as a service"

Ocean Impact

- **Circular economy:** we use depleted batteries as our raw material, avoiding extraction of new materials.
- **Decarbonisation:** our batteries present a lower carbon footprint. We reuse the depleted batteries in the same market as produced.
- **Electrification:** We optimize solar PV installations by increasing the self consumption rate.
- **Electric mobility:** we contribute to accelerate the adoption of EVs. We help to deploy faster EV charging infrastructure.

Solution Roadmap

TRL Level - 9

Immediate Next Steps in Development

1. Develop software platform to adapt business model to "battery as a service"
2. Develop larger solutions in the range of 2 MWh to 10 MWh

Three Greatest Needs in Next 12 Months

1. Hire SW developers
2. Invest in SW platform
3. UL certification for US Market

Industry Information

In 2021 over 7 Millions of electric vehicles were sold worldwide. These batteries will be eventually discarded from their use in electric vehicles but many of them will still offer an SoH (State of Health) of 70 to 80%, which make them suitable for their reuse in a 2nd life application in stationary energy storage systems.

The global second life EV battery market was valued at USS 252.2 Mn in 2021. It is estimated to advance at a CAGR of 44.7% from 2022 to 2031, reaching a value of US$ 9.93 Bn by the end of 2031.

Technology & IP

- 1 international patent for a fast selection process for depleted batteries (PCTES2021070590 "Fast ion-Li batteries characterization")
- Own BMS (Battery Management System) technology
- Own EMS (Energy Management System) technology

Team

Jon Asin
Co-Founder & CEO

Agustin Idareta
Co-Founder & COO

Agustin Idareta
CTO

C2C-NewCap

Eco-Friendly Energy Storage Technologies Based on Hybrid Supercapacitors

Lisbon, Portugal
c2cnewcap.com

Problem

The existing battery solutions for heavy vehicles are pollutant and expensive in the long term. Pb-acid batteries are the only cost-effective solution today but: they need frequent replacement, contain toxic Pb; and do not ensure cranking.

Solution

An energy storage system for heavy-commercial vehicles (fully compatible with the truck industry, tailored in voltage and size) that integrates a battery coupled with GO-START, our proprietary supercapacitor (SC) specifically designed for engine cranking.

Business Model

Target Customers

- End-users (truck fleet owners)
- Distributors

Channels

- B2B, currently based on direct sales and distributors.

Potential Revenue Streams

- Direct sales
- Distributors

Ocean Impact

Our solution directly helps to decarbonise an energy-intensive industry, transportation of goods.

It reduces waste production (extending the lifetime of batteries) and fossil fuel consumption (limiting idling), does not use critical raw materials and reduces the use of lead.

The adoption of GSE will efficiently lower the CO2 emissions of the commercial heavy-vehicles in 11%, having a direct impact on air quality, especially in loading/unloading areas such as harbours

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

- Initiate development of Pb-free solutions

Three Greatest Needs in Next 12 Months

1. Conclude investment round (on-going) to scale-up production and accelerate commercialization
2. Increase of product portfolio with lead-free solutions and add-ons
3. International commercial activity

Industry Information

More than 70% of all EU consumer goods are distributed by trucks, 97% powered by diesel. The land transportation industry is one of the most CO2 emitting sectors. Strategies for truck decarbonisation include mass electrification (not expected for 20 years) and alternative fuels.

Trucks use unreliable Pb batteries. During resting periods, the driver can use the battery's energy, facing risk of dead start or keep the vehicle idling, causing up to 11% more CO2 emissions and up to 7000€/year in fuel.

Technology & IP

C2C has been the exclusive licensee of Instituto Superior Técnico (IST)'s PCT/PT2013/000049 patent since 2016.

The original patent (2013), within a research project led by IST, was the basis for creating C2C as a spin-off. In 2020 we acquired the patent WO2014/011722 from JME Inc (US). We are currently drafting a patent for a newly developed SOS functionality.

Team

Rui Pedro Silva
CEO

André Mão de Ferro
CTO

KineticCore

Next Generation Non-chemical Energy Storage

Loveland, CO, USA
kineticcore.com
linkedin.com/company/kineticcore/

Problem

Marine transportation electrification & pollution reduction requires high power shore/port charging. “Boosting” traditional shore/port power with a utility grid upgrade is expensive & disruptive. An economical alternative is required.

Solution

Kinetic Batteries offer the best combination of cost and high-power for shore-based DC fast charging with existing power access to rapidly expand electrified marine transport for port & coastal pollution reduction.

Business Model

Target Customers
Customers (including shore-based eMarine) that need Peak Load Management for high power applications.

Channels
- Integration partners
- Distributors
- Direct website order access

Potential Revenue Streams
- Business-to-Business sales
- Licensed manufacturing
- Monitoring & service support

Ocean Impact

About 70% of the global population live within 50 km of a coast or port, and reducing maritime pollution can greatly improve air & water quality for Billions of people, as well as reduce global climate change.

Electrified maritime transportation is a critical step to removing up to 70% of this pollution which accounts for 3.5%-4% of 50 billion tons of air pollution per year.

Making “eMarine” charging accessible, convenient & affordable will accelerate this global pollution reduction capability.

Solution Roadmap

TRL Level - 5

Immediate Next Steps in Development
3rd party technology demonstration and full system prototype

Three Greatest Needs in Next 12 Months
1. Adequate funding to complete project up through TRL-6 pilot deployment
2. Electrical Engineering lead with power and control systems expertise
3. Matching KCS with Strategic Partners for pilot deployment + cost share

Industry Information

Shore based eMarine fast charging essentially has two options: 1) upgrade power through utilities; or 2) boost existing power w/ an energy storage system (ESS). If upgraded utility power is unavailable there are two ESS options available for high-power, 4-hour or less applications: flywheels and Li-ion batteries.

KCS is preparing to enter the 4-hour or less energy storage market with an industry leading energy storage capability matching Lithium-ion battery deployed prices while offing up to 50x lifecycle cost reductions.

Technology & IP

KCS offers an evolutionary leap forward in non-chemical energy storage, creating a deployable, cost-competitive alternative to large scale Li-ion batteries.

With wide power throughput and nearly unlimited charging cycles, KCS Kinetic Batteries offer an exceptional range of operational flexibility. US and worldwide patents offer critical IP protection & strategic partner market entry opportunities.

Team

Dr. James Clegern,
President & CTO

Dr. Dmytro Kuksenko
Chief Structural Engineer

Ryan Nelson
Bus. Dev. & Electrical Eng.

C-Quest Pacific

Linking Direct Ocean Carbon Capture to the Carbon Capture Utilization and Storage Value Chain

San Diego, CA, USA
cquestpacific.com

Problem

Increasing CO_2 levels warm the atmosphere and oceans, and shift ocean pH toward higher acidity. This shift decreases the survivability of marine species critical to ocean food webs and increases the risk of cascading biological collapse.

Solution

Direct Ocean Carbon Capture (DOCC) leveraging proven technology developed through DOE funding. DOCC is the most scalable and cost-effective way to increase carbon capture markets with a verifiable solution.

Business Model

Target Customers
Downstream links in the CCUS value chain, such as Mitsubishi Heavy Industries and Chevron.

Channels
Touchpoints are institutional; we partner with municipal, industrial & logistical incumbents.

Potential Revenue Streams
Revenues from CO_2 tax credit, beneficial use (CCUS), carbon offset credit; and desalinated H_2O.

Ocean Impact

The oceans are the most significant source for carbon capture. Every ton of carbon removed from the oceans will be replaced with one ton of carbon from the atmosphere.

C-Quest's DOCC process is an opportunity to directly impact climate change and reduce ocean acidification, relieving substantial stress on marine environments. Ports and innovators developing liquid CO_2 infrastructure are integral to achieving a scalable solution facilitating the move to a global CCUS market.

Solution Roadmap

TRL Level - 7

Immediate Next Steps in Development

- retrofit the existing facility in Hawaii
- demonstrate DOCC and desalination at scale
- optimize the process.

Three Greatest Needs in Next 12 Months
C-Quest estimates $1M is required to optimize the DOCC process, develop detailed capex and O&M assumptions, secure site and off-take agreements for the first commercial location and establish liquid CO_2 sales and distribution.

Industry Information

A $2T CCUS TAM with 35% growth YoY is projected by 2040. Current technology-based CO_2 removal solutions will account for 15-25% of the market by 2030.

No scaled suppliers of environmentally captured CO_2 exist in the market. Institutional investors, however, are preparing to invest directly into Compliance and Voluntary carbon markets creating an estimated market size of $900B by 2035.

Technology & IP

C-Quest leverages proven technology as the engine room, creating a pure CO_2 feedstock for downstream processing in the CCUS value chain. The Company's unique advantage as an infrastructure developer with substantial experience executing large-scale infrastructure projects positions it to deliver a turnkey, environmentally-sound solution for CO_2 removal. A process patent application is developing.

Team

Mark Lambert
CEO

Jim Crabtree
COO

Richard Barrera
Bus Dev. & Executive Assistant