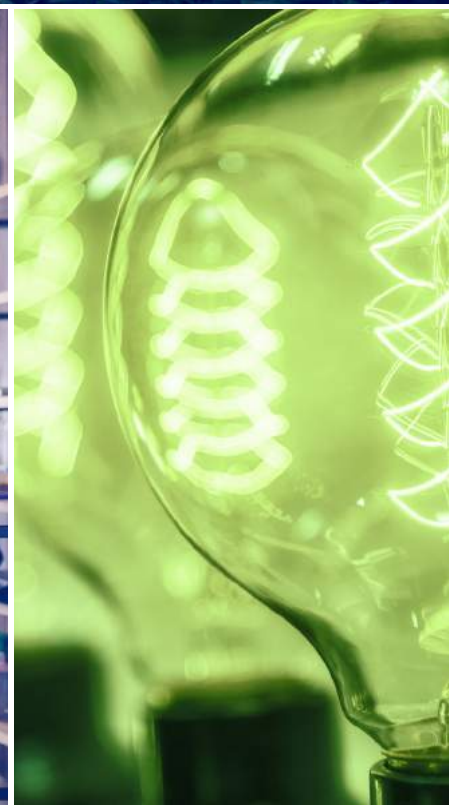


# Top30 Climate-KIC Start-Ups

CLIMATE IMPACT BATTLE  
SLUSH, 30 November 2017 HELSINKI



Climate-KIC is supported by the  
EIT, a body of the European Union







What is Climate-KIC?

Climate-KIC is a pan-European innovation agency working to accelerate the transition to a prosperous and inclusive climate-resilient society and a circular, zero-carbon economy. Our role is to catalyse deep decarbonisation and strengthen climate resilience through innovation. We believe that tackling the causes and effects through innovation in all areas of human activity will unlock healthier future economies and societies.

No one organisation can solve climate change alone. To mitigate emissions and help societies adapt to climate change we're going to need a climate innovation pipeline of great ideas and the right network of partners to bring them to scale.

Climate-KIC convenes Europe's largest network focused on transformative climate innovation. We bring together business, academia, research and government to create the critical mass of global scaling of climate solutions.

Climate-KIC is active in 25 countries. Our national centres deliver Climate-KIC programmes and projects, create local innovation ecosystems, and bring the most influential climate innovation partners from their regions in our European network.

# Table of Content

Introduction	2
Adaptive Balancing Power	4
Aeropowder	6
Aqua Robur Technologies Brill	8
Power	10
CAALA	12
ChemAlive	14
Chrysalix Technologies	16
Crosslux	18
Cubbit	20
CustoMem	22
Delft-IMP	24
Ducky	26
EchoJazz	28
Enerpaper	30
Enjay	32
Gazelle Tech	34
HeatVentors	36
Heliac	38
Kosynier	40
MASH Biotech	42
Nüwiel	44
Parametric Support	46
Power Whale	48
SolarMonkey	50
Solatom	52
Sustanalyze	54
TRC	56
Trucks On The Map	58
Trunkrs	60
Twipes	62



To achieve a low cost and efficient energy transition towards a carbon neutral world, new storage technologies are required. Adaptive Balancing Power has developed an innovative energy storage system and a new business model for stabilizing electricity grids. After 8 years of research, the company was founded in August 2016 as a spin-off from Darmstadt Technical University. In 2017, the first large scale pilot will be commissioned and in 2018 Adaptive will build Europe's largest Flywheel installation.

**Industry:** Energy Storage.

**Product:** Flywheel Energy Storage as an upgrade for existing power generation assets.

**IP:** Proprietary Outer-Rotor-Flywheel Technology, Software for Energy Storage Systems.

**Customers:** Utilities and Power Plant Operators.

**Business Model:** Hardware and Software Sales and Service.

**Market:** Global, starting in Central Europe.

**Status:** Piloted Europe's biggest Flywheel installation in the UK (1MW) and a pilot in Ireland (500 kW).

**Grants & Support:** EU Horizon 2020, Climate-KIC, German Government, EON Agile, Entega.

**Company:** Darmstadt, Germany - 11 Employees.

**Investment Opportunity:** €2M in Q4 2017 to bring the product to market.

## Technology Features



Flexibility and Scalability



Unlimited Cycle-Life



Environmentally Friendly Materials



Cost Leadership

**Grid stability demand to thrive on global scale.** Up to now conventional power plants offered system services required to stabilize the electricity grids (so-called control reserve). Wind turbines and PV installations are not able to provide them. On the contrary, their intermittent generation has a destabilizing effect on grids. As conventional power plants are being shut down due to regulatory and economic reasons, the demand for alternative solutions is growing in Europe and North-America. Asia is expected to catch up and become the largest grid stability market by 2025. The global demand is expected to grow at a 24% CAGR and reach 24 GW by 2025.

**Adaptive's product FlexPower is a turnkey solution for providing grid stability.** Adaptive developed an unprecedented outer-rotor flywheel system together with its own grid balancing software. In this area, there is no other economically viable storage system available. Adaptive's technological advance makes FlexPower the unmatched value proposition against any batteries solutions. By using a modular system, FlexPower is easily tailored to fit the customer's requirements. To ensure scalability, Adaptive has opted for a lean structure with a dedicated European supply chain.

**Adaptive's technology benefits from a strong home market for its product launch.** Targeted customers in the central European entry market can generate up to 200% of additional annual revenues by integrating FlexPower in their existing assets. The strong commitment of German strategic partners demonstrates the traction. Following its expansion across Europe (Estimated SAM exceeding € 2.5 bn. by 2025), Adaptive starts the Roll-Out-Phase in the North American interconnected grid market, followed by Asia. Additional market upsides are in Microgrids, the Mobility sector (Truck and Rail) and in Uninterruptible Power Supplies.

**A versatile team for a new technology.** The four founders, Dr. Hendrik Schaede, Nicolai Meder, Sebastian Golisch and Christian Schäfer, all with deep insights into the technology itself and its market, have known each other since 2012. Led by Hendrik Schaede, the group achieved the world's first functional demonstration of the technology in 2013 at Technical University Darmstadt. The team is supported by an experienced Advisory Board. The company owns the know-how and IP on the flywheel and its integration, the freedom to operate is given.

Enabling  
Renewables -  
Adaptive  
offers unique  
energy storage  
solutions

Contact: [Hendrik.Schaede@Adaptive-Balancing.de](mailto:Hendrik.Schaede@Adaptive-Balancing.de)

Adaptive Balancing Power GmbH | Frankfurter Str. 100 | 64293 Darmstadt, Germany



Millions of tonnes of waste feathers are generated by the global poultry industry. AERPOWDER are developing feather based insulation materials. The goal is to enable local manufacturing of sustainable products all around the world, wherever there are feathers.

#### TARGET MARKET

##### Thermal packaging for recipe kit deliveries

Thermal packaging for delivery services are predicted to be worth \$14 billion by 2020. Specifically, our products will be used in the recipe kit/fresh produce delivery service sector, which is growing rapidly and expected to be worth \$5 billion by 2025. The costs of the products are kept competitive by being derived from an abundant waste resource.

#### TRACTION AERPOWDER

##### Trialling MVP with customer

AERPOWDER was contacted by a major UK recipe kit delivery company. Trials have been completed demonstrating that the product provides superior thermal performance to existing solutions, keeping items cooled for up to 10 hours longer. Successful manufacturing trials have been completed, and several thousand units can be produced.

#### BUSINESS MODEL

##### Direct B2B sales

Approximately 1 tonne of feathers will generate €7,000 worth of revenue. Value will be passed back to the poultry processes, as well as to the end customers. The product will initially be sold directly to businesses, however wider distribution channels will be exploited at later date. Ultimately, the technology will be licenced out to interested parties.

#### PARTNERS

##### Expertise across industries

Stephen Woodgate (Former head of the World Rendering Organisation) and Gregor Anderson (Cold Chain Packaging Expert at GSK) are key advisors. Industrial partners include Cargill, an international leader in poultry production, as well as a manufacturing facility in Europe. Other supporters include the Mayor of London, Tata Steel, Citi Group and Echoing Green.

#### VISON

##### World leaders in feather materials

Beyond thermal insulation, other uses include acoustical insulation, structural packaging and panelling. This would lower the use of synthetic materials, and allow sustainable products to be locally manufactured and used all around the world, wherever there are feathers.

## Rethinking waste feathers



#### THE PROBLEM WITH FEATHERS

The world produces 3.1 million tonnes of waste feathers from the poultry industry every year. Current disposal options are limited, with poultry processors paying roughly €40/tonne for its removal, after which feathers are converted into a low-grade animal feed. This problem will worsen, as poultry will become the world's most popular type of meat by 2020.

#### THE SOLUTION:

##### Feather based insulation

AERPOWDER are developing sustainable insulation materials derived from feathers. With a patent pending, feathers are converted into sheets of materials which demonstrate best in class thermal performance for natural insulation materials. The materials also lower the impact of using non-renewable resources to create synthetic insulation.

#### FUNDING RAISED

£200,000 has been raised primarily through equity free awards and grants (Mayor of London's Low Carbon Award, Innovate UK, Climate-KIC, Echoing Green). This funding allows a runway of 12 months to secure first sales.

#### INVESTMENT OPPORTUNITY

Following the first sales, a funding round of £250,000 will be initiated (mid-2018). This funding will expand manufacturing capabilities and the team appropriately. Projected revenues are €3 million in 3 years.

Ryan Robinson (Co-Founder) | [ryan@aeropowder.com](mailto:ryan@aeropowder.com) | AERPOWDER LTD, InnovationRCA,  
Royal College of Art, 20 Howie St, London, SW11 4AY, UK



# AQUA ROBUR

## QUICK FACTS

**Company:** Aqua Robur Technologies AB,  
Holtermansgatan 1B, 411 29 Gothenburg, Sweden.  
Corp. ID SE-559027-6423.

**Majority owners:** Entrepreneurs & Chalmers Ventures.  
Industries: Fresh water distribution, irrigation & district cooling.

**Business model:** Up front payment for hardware (3 000 USD) and a SaaS model for digital part (39 USD/month).

**Status:** Paying customers since Q3, 2017, technology at TRL 6.

**Investment Opportunity:** €700 000 by the end of the year.

**Headcounts:** 4,5 FTE.

**Forecast:** Full scale commercialization by Q2, 2018 and cash flow positive by Q1, 2020.

**Customer:** Short term: water utilities.

**Long term:** Industrial actors selling solutions to water utilities.

**Key Team Members:** Niklas Johansson, CEO. A purposeful growth strategist with a great rapport with Aqua Robur's customers and partners. Niklas holds a MSc at the Chalmers School of Entrepreneurship and a Bachelor's degree in Industrial Engineering and Management from Chalmers. Martin Holm, CTO. Has unique skills when it comes to turning customer demands into brilliant products. He holds a MSc in Product Development and a BSc in Mechanical Engineering, both from Chalmers University of Technology.

## The Problem

Water scarcity and ageing water infrastructure are fast-growing global issues. In 2050, regions which accounts for 45% of the global GDP will suffer a lack of 40% of the water need or more (Global Water Intelligence, 2017). Today, 20-30% of produced fresh water is lost due to leakage in the water pipelines. Public water pipelines are designed to last no more than 100 years but current renewal rates are around 0,4-0,5% in many countries. On top of this, water utilities lack effective & efficient tools for collecting information about their pipelines in order to get data driven investment decisions. In order to detect leakages and water with poor quality today, wireless measurement systems are being installed throughout the pipe network. However, the greatest hinders to this development is lack of proper power supply and efficient wireless communication for the remotely located devices. Today's solutions are expensive and inconvenient.

## The Solution

Bringing everything together - Aqua Robur Technologies presents the next generation of IoT system which is a selfpowering sensor platform with build in state of the art LoRa-WAN wireless communication. The product is placed at various places along the water pipeline to detect deviations regarding water flow, pressure and other parameters. The energy harvester unit is a patentpending technology transforming a small part of the energy in the water flow into electricity and external sensors are easily connected to the Infinity Hub. Collected data is either visualized at Aqua Robur's dashboard or transferred to the customers current system for visualization and analysis via an API. The Infinity Hub is developed to meet the needs of the modern remote measurement strategy, which strives towards real time data transfer and high sensor density. The great benefits of Aqua Robur's technology are that sensors can be placed anywhere in the network and collecting real-time data during a very long time, 8 years+, which stands in contrast to the battery powered solutions which can run for a couple of months with a similar setup. The system is now adopted by several paying customers in Sweden.

## The Market

The European market for sensors & automation/control in the municipal water sector is 5,2 USD yearly (Global Water Intelligence, 2017). The length of the pipeline network for drinking water in the Europe region is more than 4 500 000km in total, equal to 710 turn around the equator. A moderate setup would indicate on a sensor node every 10km which would give a market of 450 000 units in total with a value of 1,7 billion USD with a product value of 3 000 USD (Aqua Robur, 2017).

Self-powered sensor platform to detect water leakages and support renewal of public water pipeline networks

## New emission of shares

1) Execute internationalization strategy.

2) Validate all parts of the newly added digital part of the value offering.

3) Industrialize technology, currently at TRL 6. Investment opportunity is €700 000, valuation TBA.



**Industry:** Battery systems.

**Key IP:** Three patent applications concerning intelligent energy management for electrochemical energy storage devices.

**Product:** Hardware and software for battery control and management systems that extends the cycle life of batteries by up to 60%.

**Status:** Prototypes built and tested, conversations with partners for pilot project underway.

**Company:** Located in Oxford, UK. 4 full time employees.

**Funds raised:** £120,000 (Climate KIC, Oxford University Challenge Seed Fund, Oxford Sciences Innovation).

**Funds committed:** £220,000 (Innovate UK, Climate KIC Accelerator Stage 3, Shell Technology Ventures).

**Investment opportunity:** £180,000.

**Team:** Christoph Birkel, DPhil, CEO Carolyn Hicks, MBA, CFO Damien Frost, CTO Adrien Bizeray, DPhil, Head of Software.

**Forecast:** Commercial pilot in 2018, first sales in 2019, 2022: break-even, expected EBITDA >£22M, expected gross margin 12%.

#### The Problem

State-of-the-art lithium-ion (Li-ion) batteries are expensive and lose their ability to hold charge as they age. This is, to a large part, due to the way that conventional batteries are connected and controlled – their performance and lifetime are limited by the weakest cell in the pack. Once the weakest cell no longer holds enough charge, most battery packs become useless and are discarded. This is the reason for high lifetime cost and large amounts of battery waste – more than 50% of cells from discarded battery packs are still useful.

#### Brill Power's solution

We have developed battery control and management technology, which fully utilizes the available capacity of each cell in a pack. Initial results show that we are able to extend the cycle life of a multi-cell Li-ion battery by up to 60% while retaining a higher energy storage capacity than conventional battery packs. We have so far filed three patent applications and will protect our software through copyrights and embedding on microcontrollers. Current industry leaders focus on active cell balancing with low balancing currents, whereas our technology enables complete energy management, which unlocks the benefits of longer life, improved reliability, safety, and faster charging.

Revolutionising  
energy storage by  
making batteries  
live longer,  
perform better  
and cost less

#### Business Model

Our first product will be a printed circuit board (PCB) supported by specialized battery control software, which ensures optimal utilization of every cell in a pack. The product is modular and can be integrated with any size of battery pack for both stationary energy storage and electric vehicle (EV) applications. We will supply our first product to battery system integrators for stationary storage applications at an expected price of £10 per 500W of power. Our solution will allow the owners of grid-scale batteries to generate 60% more revenue from grid services thanks to the extended asset lifetime. We expect to miniaturize our technology before entering the EV market. Product margins are anticipated to be 50% for stationary storage applications and 30% for EVs. Our technology will enable OEMs to match the lifetime of the vehicle with the lifetime of the traction battery, avoiding the need for costly battery replacements.

#### The Market

Our first target market is grid-scale energy storage. This market is estimated to reach a size of \$1B globally by 2019, growing by 33% annually. We will enter this market by developing a pilot system in partnership with a battery system integrator for small to medium sized grid-connected energy storage systems. We are currently in the process of formalizing a partnership to that end. We anticipate the completion of the pilot in 2018 and first sales in 2019. We expect to enter the EV market in 2022, which is estimated to reach a size of \$250B globally with an annual growth rate of 42%. Supplying our technology to one manufacturing line of EVs, which produces 200,000 vehicles per year, will generate an expected revenue of £200M.

#### The Team

Our team has both technical and business expertise, combining 15 years of research experience in Li-ion batteries and power electronics by three recent Oxford DPhil graduates with the business acumen of an Oxford MBA graduate.

#### The Vision

We want to unlock the true potential of Li-ion batteries for any application. By delivering a platform technology for complete energy management we will help save an estimated 2.3 million tons of CO2 equivalents annually and generate an expected profit of >£22M by 2022.





**Industry:** Construction, Computer-Aided Design Software, energy consulting.

**Company:** We are a German GmbH with 4 founders and 7 additional team members.

**Status:** As of Oct. 2017 our SaaS is available for download. With €50.000 we are currently testing marketing channels.

**Traction:** Our Beta-Version of the SaaS is being used by >50 pilot customers. So far we have done 3 paid energy consulting projects and we have 2 more in the pipeline (>€20.000 revenue).

**Partnerships:** Bosch ST, DGNB, IBRauch, Werner Sobek Group, Bauhaus-University Weimar, ETH Zürich, TU-Munich.

**IP:** CAALA builds on the doctoral thesis of Alexander (defensive publishing). Our algorithms run only on our servers and cannot be accessed by outsiders.

CAALA and the name of our methodology PLCA are registered trademarks.

**Videos:** <http://bit.ly/2ysMr1Q> (User story).  
<http://bit.ly/2xOEK0a> (Software).  
<http://bit.ly/2hyaoOa> (Pitch).

**Current investors:** Federal Ministry for Economic Affairs and Energy, European Social Fund, Government of Upper Bavaria, Climate-KIC, own capital.

**Investment Opportunity:** So far we have invested €150.000 in CAALA and have another €150.000 to go. We are looking for €300.000 for 10% shares. We are BAFA Invest accredited.

**Summary:** Architects need an energy consultant in every project in order to get a construction permit (that is mandatory). CAALA's goal is to provide this service and disrupt the energy consulting market by digitizing the energy consultant through our SaaS-onestop solution.

**Vision:** We are fuelled by the vision of creating software, which transforms architecture and thus the construction industry into a front runner in the battle against climate change and are looking for like-minded investors to make CAALA the go-to tool for energy consulting.

**Pain:** Today architects in the early planning phase lack information on the energy performance of their building design. They depend on energy consultants who need weeks to give feedback on the energy performance of the building design & fulfilment of regulations, due to laborious manual data inputting and only come on board once major design decisions have already been made. All this leads to inefficient processes and suboptimal building designs. Product. With CAALA (SaaS) architects can calculate and compare thousands of building variants with regards to energy demand, CO<sub>2</sub>- emissions, investment and operational costs within seconds. Architects can also get the mandatory energy performance certificate for their project through our digital energy consulting service (platform).

**Solution:** With CAALA architects receive real-time feedback while designing the building. In this way, the building is energetically optimized right from the beginning and not later in detailed planning stages when changes are expensive and difficult to implement.

**USP:** Workflow integration and usability without expert background knowledge as well as speed (calculations are done in <1sec) are our key differentiators. The gathered price information entered by our users continues to improve the quality of price predictions (big data, machine learning) and leveraging our 1st-mover advantage.

**Market:** €3b market in Europe. Germany (€500m) is an ideal market to start CAALA since it is highly fragmented, quality and transparency are major concerns for our users and regulations become stricter at an accelerated pace. Key facts: There are 13.000 energy consultants doing 400.000 projects per year.

**Customers (GER):** 75.000 architectural offices are relevant for CAALA. We focus on the ones using 3D CAD software in the early planning phase (ketchup and Rhino): >15.000 offices (~20% share) growing at ~20% p.a.

**Business model:** SOFTWARE: SaaS (€30/month, freemium): Real-time calculation of the energy demand of a building over the entire life cycle. Verification of compliance with energetic guidelines. ENERGY CONSULTING: Faster and more cost-effective certification of compulsory energy efficiency regulations (Per project: ~€1.500-€4.500).

**Team:** Our diverse team of 11 consists of a post-doc at ETH Zurich in sustainable construction, an executive MBA in Innovation, a Senior IT-Architect, a published architect, a PhD in AI, two energy consultants and an experienced marketer among others.

#### Forecast:

2018: 160 paying software users and 120 consulting projects (~€200.000 revenue).

2019: 700 paying software users and 800 consulting projects (~€1.6m revenue).

2022: 6.500 paying SaaS users, ~9% of all architectural offices and 10.000 energy consulting projects (2,5% market share).

**Impact:** The construction industry is responsible for 40% primary energy use and 36% of the EU CO<sub>2</sub>-emissions. CAALA, if used on every building, can save ~18% of all EU CO<sub>2</sub>- emissions as well as short and long-term costs (~30%) for building owners.

**Contact:** Sebastian Dominguez, [s.dominguez@caala.de](mailto:s.dominguez@caala.de), +49 176 963 646 08.

Energetic pre-  
dimensioning in  
real time



#### ChemAlive Investor Summary

We offer software that uses machine learning and quantum chemistry to model reactions, improve yield and generate new chemical leads. We seek CHF 1 million to democratize access to chemical modelling by providing a 1000-fold increase in efficiency of chemical discovery via a SaaS cloud-based platform that is usable by non-experts.

#### Problem

In Big Pharma it takes over 12 years to bring a new drug to market and costs over \$1 billion. Promising leads are found to be toxic very late in the development cycle leading to inefficiency in drug development and overall R&D ROI of less than 5%. In the organic materials space, industrial chemical processes remain un-optimized and costly to improve.

#### Solution

Our software brings machine learning and big data to the chemical and Pharma industry, allowing them to model accurate reaction metrics for the design, prediction and understanding of chemical processes. We achieve this using custom databases to design new drugs, materials and repurpose molecules across-domains. Discoveries using our software show an ROI of up to 9:1 and we have demonstrated chemical approaches to tackle climate change at scale.

#### Underlying Magic

The new science behind our software, its computational speed and its SaaS cloud-based implementation has the potential to make chemical modelling available to hundreds of thousands of non-expert chemists. We have freedom to operate and our proprietary IP is protected.

#### Market Size


The chemical R&D market across pharma, materials and fine chemicals is \$260 billion p.a., with 8% spent directly on computation. The proportional spend on computing tools is expected to double by 2020. Globally, over 800k chemical professionals would benefit from applying ChemAlive software in their daily work.

#### Competition

Competitors use legacy approaches that are incompatible with on-cloud computations. Whereas our cloud-based quantum modelling solution provides super-computing power to every user, so that ordinary chemists can more accurately define new chemical structures.

#### Traction / Plan

2017 is the first year of operations, with 4 contracts and revenue to date of CHF 100k. In addition, we are active in 3 pilot projects. We have deployed our beta module on-line with 30+ institutions trailing the interface. We have been awarded a Swiss government grant worth 750k that will start in Jan 2018 which will be used to expand the scope of applications of our product suite.



Empowering the chemical community through barrierless access to quantum mechanics

#### Team

Together, the leadership team has over 50 years experience in Computational Chemistry. We come from UCLA, Oxford, ETH, UniBasel and EPFL with commercial experience in finance, management consulting and chemical development. Including parttime team members and collaborators, the whole team comprises over 12 PhD professionals.

#### Financing

We have secured CHF 320k FFF and a further CHF 500k in non-dilutive funding, including from Climate-KIC. We have been awarded a CHF 750k grant for development work and are seeking a 20% equity investment of up to CHF 1 million to accelerate our market penetration and further develop our product suite.

#### Business Model

1) We license our software per module, per user, per month. A typical package would cost CHF 20k-50k per institution per year.

2) Consulting services provide additional revenue at a day rate of CHF 2k per person.

3) In the mid-term we are also targeting research collaborations and anticipate IP licensing fees of between CHF 300k and 5m per agreement.

ChemAlive SA | 10 Avenue de la Gare | CH-1003 Lausanne | Switzerland

To find out more, contact us: [info@chemalive.com](mailto:info@chemalive.com)

[www.chemalive.com](http://www.chemalive.com)





Sustainable  
Solutions  
From waste  
wood to value

**Industry:** Chemical.

**Key IP:** 3 patents, 2 concerning the use of low-cost organic salt solutions for the separation of the main wood components lignin and cellulose and a 3rd patent for the application of the solutions towards heavy metal containing wood waste.

**Product:** A robust and flexible process for the production of low-cost cellulose and lignin from any type of woody material, including heavy metal contaminated waste wood.

**Customers and Business Model:** Chemical, pulping and waste management industries. Sales of solvent, process design packages and licences.

**Status:** Technology scale-up to the 500L scale underway (TRL 4-5). MoU signed with potential customer, testing of various end applications underway.

**Company:** Spin-out from Imperial College London (ICL), UK. 2 FTEs.

**Current Funding Raised a total of £316k:** Royal Society, Climate-KIC, ICL, Royal Academy of Engineering, EU (non-diluting), £35k convertible loan from Imperial Innovations.

**Investment Opportunity:** £400k in 2018 to accelerate process & business development and grow engineering team. Finalise pilot plant blue print.

**Key Team Members:** Dr Florence Gschwend, COO PhD in the technology, Forbes 30under30 Europe Dr Agi Brandt, CSO Inventor and academic at ICL, Start-up business manager Dr Jason Hallett, Scientific Advisor Chemical Engineer, world expert in organic salts and sustainable chemical technology.

**The Problem:** High feedstock and processing cost are hindering large-scale production of renewable chemicals and fuels. Typically, raw material cost (e.g. corn) is the main cost driver, contributing ca. 50% of the final product cost. At the same time, only 50% of waste wood is recycled in the industrialized world, with the remainder sent to landfill or incineration, contributing to environmental pollution and incurring high disposal fees. A main problem for the recycling of this wood fraction is the presence of heavy metals from paints and preservatives.

**Our Solution:** Our proprietary and innovative technology uses a novel type of low-cost solvents called ionic liquids (ILs). They enable conversion of unwanted waste wood into a decontaminated and very cheap raw material for producing inexpensive and sustainable chemicals, materials and fuels, while recovering heavy metals in a useful form. The technology offers unprecedented flexibility and cost advantages, as it can treat different types of woody materials in a one-size-fits-all process with lower capital and operating costs than competing processes.

**Market:** The potential value held in currently nonrecycled wood in the EU is around £5bn, which could be unlocked by turning it into a raw material for the chemical industry using our technology. The main product from our process, cellulose, is a raw material for the bioplastics and biofuels industries, with global markets of £26bn (estimate, by 2024) and £40bn (2016), respectively.

**Traction:** We have validated our process extensively on the lab-scale. Various results are published in highly cited academic papers. We successfully tested waste wood from two major European waste management companies. We have signed an MoU with a major Scandinavian pulp producer who is looking for a new use of their 1mt of saw dust produced every year.

**More Information:** Get in touch via email [info@chrysalixtechnologies.com](mailto:info@chrysalixtechnologies.com) or visit [www.chrysalixtechnologies.com](http://www.chrysalixtechnologies.com). You can also follow us on Twitter @ChrysalixTech.





**Industry:** Construction market.

**Product:** Photovoltaic glazing.

**Customers:** Real estate developers, architects, builders.

**Status:** Industrial proof of concept.

**Company:** Based in the South of France, near Aix-En-Provence, 20 FTEs.

**Current investors:** Founders, business angels, regional funds (3.2M€ in total).

**Investment opportunity:** 40M€ in 3Q'2018 to build a manufacturing unit.

**Key Team Members:** Marc Ricci, President - 25 years' experience in Production and Sales in Microelectronics.

Pierre-Yves Thoulon, COO - 30 years' experience in R&D and technology management (Computer hardware and software).

Hervé Rivoal, CTO - 35 years' experience in Microelectronics and Photovoltaics, former technical director of NEXCIS.

Éric Tomalak, Director of Production - 30 years' experience in Microelectronics and Photovoltaics.

Daniel Lincot, Scientific Advisor - Research director at CNRS, Director of IRDEP, 35 years' experience in thin-film photovoltaics.

**Forecast:** Cash-flow positive in 1Q'2020. Projected yearly revenue from 2020 on: 80M€ with 50M€ EBIT.

**Urban environment:** A dire need for local, clean, and renewable energy. With 70% of the world population predicted to live in cities by 2050, and the increasing density of urban landscape, the availability of building-embedded, non-polluting energy sources becomes critical, often reinforced by local regulations (e.g. European directive 2010/31/EU). As of today, the only zero-carbon emission, easily deployable technology in such an environment is photovoltaics. Yet, as high-rise buildings become the rule, there is very little space on roof surfaces to install standard panels.

**The response:** A semi-transparent photovoltaic glazing. With similar thermal, mechanical, and optical characteristics, Crosslux's glazing can be substituted to standard glazing to turn huge façade areas into solar power plants. The electricity produced can be directly used by the building. In sunny areas, we show that the energy generated can fully meet a state-of-the-art building's basic needs.

**Crosslux's solution is unique:** With complete control over the manufacturing process, we can bring at once significant energy production, unprecedented visual comfort to the building occupant, architectural design capabilities, low cost manufacturing, and very low carbon footprint. Crosslux's technology results from 25 years and 100M€ of R&D investment, and is protected by worldwide patents and secret industrial know-how.



Zero-energy buildings at hand thanks to Crosslux's photovoltaic glazing

**A high-demand, fast-growing market:** Building Integrated Photovoltaics (BIPV) is a readily international market, with strong growth, and forecasted at multi-billion USDs as soon as 2020 (already well above \$1Bn today). It is regionally segmented, with little cross-region competition (glazing is heavy and fragile, and not easily transported), and therefore well suited for fast expansion. Crosslux focuses on zeroenergy and other prestige buildings (which represent more than half the market size), a segment offering comfortable margin perspectives, with prices well above \$600/m<sup>2</sup>, decreasing but slowly. The product is prescribed through real-estate developers and architects, and actually sold to the construction company in charge of the façade.

**Traction:** With 3.2M€ already raised since the creation of Crosslux in 2011 and another on-going round for 2M€, Crosslux will finalize a reduced-size pilot production line in the first half of 2018. This will be used in partnership with international players such as Bouygues Construction or the Mortenson group (USA) to demonstrate the capabilities of the product on actual buildings in real-life scenarios. More opportunities are being discussed in South America, South-East Asia, and China. Other large corporations have shown interest for the technology, in the construction market, but also for completely different applications.

**Investment opportunity:** Crosslux is now seeking 40M€ in 3Q'2018 to finance a manufacturing facility suited to the market with a capacity of 200.000m<sup>2</sup>/year, which will be operational in 2020 and run at an annual 80M€ revenue for a 50M€ EBIT. A soft commitment has already been obtained from a large French investor for 2/3 of the total amount. This first industrial phase prepares the transfer of the technology to an industrial partner that will be able to replicate the manufacturing model worldwide with larger unit throughput (up to 1M m<sup>2</sup>/year). This operation should take place in 2022, and represents a possible exit scenario for Crosslux's early shareholders.

**More information:** For additional information or to set-up a meeting to present the detailed opportunity, please contact Marc Ricci (marc.ricci@crosslux.com, +33 662 05 14 24) or Pierre-Yves Thoulon (pierre-yves.thoulon@crosslux.com, +33 633 39 75 76).

Crosslux SAS – 1200 Avenue Olivier Perroy – Bâtiment F – 13790 Rousset – France  
SAS au capital de 255.497€ | RCS Aix-en-Provence 533 199 030 | contact@crosslux.com





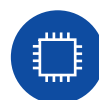
**Problem & Solution:** The Cloud is built over an inefficient centralized architecture. A paradigm where one data-center serves millions of users does not exploit inter-connectivity of nodes, and is therefore expensive, both for the wallet and for the environment. Web farms around the world consume about as much as Brazil, and these costs are transferred both to Users (~100\$/Year/TB for cloud storage) and Companies (web services are expensive, ex. CDN ~6 \$/c/ stream GB). Cubbit is the first data-center that does not need any centralized server farm.

Cubbit is an IoT device that leverages on existing inter-connectivity infrastructures to crowd-source the first distributed data-center: from one web farm for all, to small servers in everybody's home or office. Our technology changes the way we experience the Cloud. Users get the first forever-free Cloud Storage, while companies can count on cheaper and boosted Web Services, such as content-delivering (CDN), cloud computing, hosting.

#### Business Model



1) We offer forever-free Cloud Storage to acquire new Users (people and SMEs).



2) Each user grows our distributed data-center with bandwidth, storage and CPU.



3) Then we monetize - by selling web services enabled by our crowd-sourced data-center.

#### Cubbit is

- A forever-free Dropbox for Users and SMEs.
- A cheaper & boosted AWS for Companies.

#### Benefits

**Free Cloud:** Stop paying someone else to store your data and memories. Extend your space just by plugging your unused hard drives.

**Safety and Privacy:** Cubbit end-to-end cryptography ensures a military level of data security. **24/7 Syncing:** Cubbit handles your file transfers at your place even when you get offline. **Cost leadership:** Cubbit's distributed data-center can count on zero infrastructural costs. **Proximity:** Nothing solves latency better than having a server in users' homes and offices. This opens new possibilities to data management for gaming, streaming and content delivery. Cloud Storage, introduced in 2007, is in its growth phase. In 2016 it was worth \$23,7B, and CAGR to 2020 is expected at 28,20%. Though, the premium conversion rate is stuck at 4% with our Free Cloud model, we want to have on the industry the same impact that Hotmail had twenty years ago as the first e-mail service with no fees for the final users.

**Cost leadership:** Cubbit's distributed data-center can count on zero infrastructural costs. **Proximity:** Nothing solves latency better than having a server in users' homes and offices. This opens new possibilities to data management for gaming, streaming and content delivery. Among the market of Web Services, Content Delivery Network (CDN) services were sold for \$6.05B in 2016 and are expected to grow to 2021 at 30.9% CAGR. Netflix, the king of streaming, is estimated to spend ~70% of its revenues in CDN. They are now building their own edge infrastructure. We are creating, for free, a more permeated network that is rentable by all other players in the industry.

#### Traction

We have just been selected by the leading Italian Telco for its open-innovation program. We are studying how to embed our technology into the millions of consumer home routers they manage. Cubbit technology has just been proofed by our Alpha Test, that involved 48 proto-Cubbit activated in 4 European cities. Our team has been able to raise €115k equity-free. We won the Italian National Prize for Innovation 2016 and we have run an acceleration program with VC partner Barcamper Ventures in spring 2017.

#### Roadmap

We are looking to close a Seed Round of €450k by February 2018, to sustain the launch in Open Hardware that we plan just after our public Beta Test, expected to start by Jan 2018. We are already involving the 542 European FabLabs to engage the Makers communities for the Beta Test. In the meanwhile, a B2B strategy is carried out through our corporate contacts, also ranging to insurances and multi-utilities industries.

#### The Team

The 4 co-founders have complementary backgrounds on business and tech development and work at the company since its foundation in July 2016. Key figures:

**TECH** | Marco Moschettini, co-founder, full stack developer coding innovative software for 10+ years; Lorenzo Posani, co-founder, data scientist and theoretical physicists at École Normale Supérieure Paris; Alessio Paccioia senior back-end developer and software engineer; Alessandro Fai front-end designer. **BUSINESS** | Stefano Onofri and Alessandro Cillario, co-founders, are on the Italian startup scene since 2015, when they launched the Start-up Day event at the University of Bologna, now the largest annual event of young entrepreneurship in Italy. Alena Harbatava, international experience in management consultancy and Euenio Piraccini, specialized in Entrepreneurship at Bocconi University, work with the founders as business developers. **ADVISORS** | Niccolò Sanarico. CTO dPixel, Milan, ITA | Hitendra Patel. Managing Director IXL Center, Boston, USA.

Main Contact | Stefano Onofri, CBO | stefano.onofri@cubbit.net | +39 3337126645

Cubbit srls | Via San Vitale 39, 40125, Bologna (BO) | VAT CODE 03562001200 | www.cubbit.net

Participating at CLIMATE KIC | stage 2

The first  
serverless  
data-center



**Stage:** Seed Stage.

**Raising:** £1.5m (secured £500k grant/potentially SEIS & EIS eligible).

**Location:** Innovation Hub, Imperial White City Campus, W12 0BZ, London No. of employees: 5 FTEs, all in London.

**Industry:** Biotech production of materials.

**Key IP:** One patent (PCT 27th May 2017) covering the production process, two additional product composition patent filings being prepared and >10 documented trade secrets on process parameters.

**Product:** CustoMem granular media (CGM) is a customisable, selective adsorbent media. During the unique production process, added functionality is designed to tackle hazardous industrial chemicals with 10x better efficiency than existing ion exchange resins and Granular Activated Carbon (GAC).

**Customers and business model:** 6 potential commercial field trials have been requested by major players in 2016 including one of the world's major airports and a top tier global wastewater treatment operator. Potential customers include airports, oil & gas facilities, military bases and firefighting training centers. A field trial leads to media sales with recurring revenue and more identical customers getting involved. 65% profit margins predicted.

**Status:** 3 lab testing trials done to date, 6 potential field trial sites identified, heads of terms agreed for lab based feasibility trials with major UK airport and German field trial projected to start by Dec 2017.

**Current investors:** Worshipful company of Armourers & Brasiers company provided a convertible loan of £25k alongside £500k of non-dilutive funding.

**Key team members:** **Henrik Hagemann, CEO:** Royal Academy of Engineering Enterprise Fellow, most award winning Imperial College London (QS Top 8 uni, world) engineer of the 2010s, 3 years experience in bioengineering commercialization. **Ben Reeve, CTO:** 7 years experience within bioengineering production, award winning scientific team leader. **Shayne Petkiewicz, Bizdev manager:** UC Berkeley graduated engineer with 2 years lean startup experience. **Wen Li, Lead Chemist:** 6 years research experience, world class chemist. **Amanda You, Chief Scientist:** 6 years biomaterials research experience, award winning materials expert. **Advisory board:** Steve Gluck, 37 years at Dow Water as adsorbent expert and world class water sales expertise, John Banyard, former R&D Director at Severn Trent Water and Richard Philpott, 20 years entrepreneurship experience.

**Forecast:** Cash flow positive by Q3 2020. By Q4 2022, the company will exit for £200m valuation via trade sale. Two conversations about exits have already entered confidential stage with \$bn companies.

## Sustainability Tools for the 21st Century

**The Pain:** Brita type filters, called Granulated Activated Carbon, are used to remove organics in industrial water treatment. GAC insufficiently meet the need for removal of the most carcinogenic chemicals in industrial water. The pain is that EU have imposed regulations on 26 of these substances found in water, which are extremely difficult to remove and toxic. Of the 26 priority hazardous substances, there is one which is found in 90% of EU citizens' blood and that GAC has 1% efficiency of removal. It's PFOA, used as a firefighting foam, an irreplaceable chemical. It's a real killer, it causes cancer (US EPA 2015).

**CustoMem's solution:** Our breakthrough is our way of producing granules that capture what others fail to remove, we call it 'targeted binding of pollutants'. We make customised materials, which can tackle any of the relevant 26 priority substances chemicals. We call it 'engineered polymer production' which means we are in the business of producing granules.

**CustoMem's unique advantage:** The production makes granules that can be customised to target the most hazardous substances under the right industrial water conditions. This means we can make tailored materials that suit the relevant of the 26 priority substances.

**The Market:** We are first targeting PFOA in EU and US airports, a \$1.6bn market. After that we go for larger £10bn PFOA market predominantly found in EU and US. Beyond that, we go with our ability to customise, to capture 25 other priority substances, a market worth \$30bn globally.

**Traction:** CustoMem's initial testing for the airports segment has been successful: we have shown >10x better performance at capture of PFOA than GAC or specialist adsorbents. This means customers would get CapEx savings of 2x lower costs and 10% lower OpEx if using CustoMem's offering. There are 1720 airports in EU and US, each of which is worth \$900k, total worth of \$1.6bn. CustoMem is the winner of >5 science & entrepreneurship competitions, including first runners up at the world's biggest synthetic biology science competition at MIT in 2014, iGEM.

**More information:** For additional info or to schedule a meeting to discuss the opportunity, please contact [henrik@customem.com](mailto:henrik@customem.com) or check [www.customem.com](http://www.customem.com)





Better  
Batteries  
through  
Nanocoatings

Delft IMP sells coating equipment to lithium-ion raw material providers and battery manufacturers.

**Product:** Equipment to enhance the performance of battery materials, reducing costs of lithium-ion batteries by up to a factor 5.

**Customers:** Raw material suppliers battery integrators, car manufacturers.

**Status:** 300 kEuro commercial turnover since 2016 in validation studies together with major global players, secured pilotscale validation with customers.

**Company:** Founded December 2015, located in Delft, The Netherlands, spin-out of Delft University of Technology.

**Current capabilities:** 1 M Euro invested in three company-owned coating systems for material validation projects and two coating systems for pilot-scale up.

**Investment opportunity:** 1 M Euro in March 2018 to come to first commercial equipment sales in 2019.

**Key team members:**

**Dr. Bart van Limpt, company lead** - 2nd startup, 10+ years product development experience, 8+ patents.

**Prof. Jacob Moulijn, strategy** - 3rd startup, 700+ publications, experienced industry consultant.

**Dr. David Valdesuero, scale-up lead** - PhD on technology scale-up.

**Ir. Aris Goulas, project lead** - 6+ years experience on technology.

**The Pain:** Current demand for electric vehicles cannot be met by global material supply of for example cobalt and nickel, leading to increased prices and prohibiting a global move to a green economy. Cheaper, more readily available materials are available, but currently do not meet the performance demands in both the required lifetime as in the battery capacity.

**Delft IMP's solution:** By coating battery materials with a nanometer thin coating we have proven that we can enhance the lifetime of inexpensive battery materials such that they become viable for using in automotive applications, effectively decreasing costs for lithium-ion battery manufacturers by a factor 5. Our patented equipment is unique in handling the quantities needed for the large megafactories (> 1 Tonne / hour processing), at a cost that is a factor 10 less than our main competitor. Revenue is generated through 70 % margins on equipment sales, as well as through licence revenues on products & technology. Customer lock-in is through a servicing model integrated in the licence.

**Market:** The market for lithium-ion raw battery materials is worth approx. 3 Bn Euro at > 140 000 tonne material/ year, which will grow to 500 000 tonne material / year in 2025. Main growth is in China, where our technology is patent protected. By 2025 Delft IMP's coating equipment will be an integral part of battery production megafactories, coating 20 % of all raw battery materials. After establishing ourselves in the battery market we expect to expand to fuel cell and lighting applications where nanocoatings also provide a strong benefit, unlocking another 8 Bn Euro market.

**Traction:** Currently we are engaged with all major players in the raw battery material market, and have commitment for pilot-scale coatingvalidation with key players.

**Contact:** Dr. B. (Bart) van Limpt, CEO

Delft IMP B.V. / Molengraaffsingel 10 / 2629 JD DELFT / The Netherlands

Phone +31 6 28760728 / Web <http://delft-imp.nl> / Email [info@delft-imp.nl](mailto:info@delft-imp.nl)



**Ducky AS:** Located in Trondheim, Norway.

**Key Team Members:** **Mads SIMONSEN** – CEO Engineer with 7 years' experience in product development in the oil industry.

**Silje SOLBERG** – UX Manager with 6 years' experience in complex user centred development.

**Bogdan GLOGOVAC** – Biologist with 8 years' experience in environmental communication.

**Christian ALFONI** – Lead Software Architect and Developer with 10+ years' experience.

**Key Advisor:** Per Espen Stoknes, Author and Professor - Psychologist and Economist (Ph.D) [www.stoknes.no](http://www.stoknes.no).

**Core Partners:** Climate KIC – Europe's largest public-private innovation partnership focused on climate innovation NTNU – Norwegian University of Science and Technology.

**Customers And Business Model:** Large corporations, recurring software licensing fees.

**Problem:** Companies struggle to execute their Corporate Social Responsibility (CSR) Strategies and lack tools to quantify and communicate sustainability efforts. Ten years ago, only about a dozen Fortune 500 companies issued a CSR or sustainability report. Now the majority of companies not only issue reports but consider sustainability a core part of making their business profitable and becoming or staying market leaders. In addition, in Europe there are new directives in place that make non-financial reporting mandatory (Directive 2014/95/EU).

**Ducky's Solution:** Ducky utilize web technologies to encourage individuals to live more sustainability. It is designed for corporations to engage their customers and employees in their sustainability strategy on a large scale. Ducky disseminates and applies the latest climate research to raise awareness and educate individuals. Users can easily visualize and quantify how their daily activities impact their carbon footprint and get personalized advice on how tolerable lifestyle changes will reduce their footprint. We deliver three services; Ducky Business, Ducky School and Ducky Data. Ducky Business and Ducky School engages employees and students using a time limited challenge in which users compete in teams to save the most CO2 emissions by logging everyday sustainable activities. Ducky Data provides climate information services to companies to inform and engage customers in sustainable choices when purchasing goods.

**Benefits:** Ducky facilitates the execution of a company's sustainability strategy and builds it into their core business by:

**1. Strengthening Environmental Profile** – Through effective communication, delivering concrete actions of CSR strategy and engaging customers. Successful CSR strategy implementation has the potential to increase revenues up to 20% and to enhance the firm's brand and reputational value by 11%<sup>1</sup>.

**2. Improving Employee Engagement** – Ducky Business increases employee awareness, productivity, retention and attracts new top talent. 86% of workers believe it is important that their own employer is responsible to society and the environment.

**3. Meeting Reporting Requirements** - Ducky enables large corporations to continuously measure and document the company's sustainability activities.

## Sustainability tools for the 21st century



**MARKET AND STATUS: Unique Approach:** The Ducky services are the result of a user centred innovation process, involving researchers in climate psychology, climate communication and climate data, as well as designers, developers and extensive user testing.

**Team:** The Ducky team consists of 13 highly skilled and dedicated coworkers, covering all aspects of the business. [www.ducky.no/about](http://www.ducky.no/about)

**Market Size:** The fortune 500 companies in UK and US alone spend over US\$15 billion dollars annually on CSR activities<sup>3</sup>. The overall picture portrays a generally strong willingness to pay for CSR measures globally. In Norway alone there are more than 600 corporations (250+ employees), whereas in the EU there are more than 44 000 corporations. With mandatory environmental reporting being introduced in the EU in 2017, the regulatory environment is a key business driver for Ducky. The market for Ducky School is approximately 450 high schools in Norway alone.

**Traction - Development: 2016:** 5 pilot projects with 4 companies - IKEA Norway, Yara, Enova and Trøndelag County. Avg. contract value ~500 000 NOK. **2017:** Finalized our off the shelf services. In total 23 000 hours at a value of 11 MNOK have been invested by Ducky employees. Signed contracts with Elkjøp Nordic, EC Dahls and two schools. Currently there are 10 offers in final stage. Expected total value of ~5 000 000 NOK.

**Growth projection: 2018:** 5% Norwegian market share, 15 MNOK. **2019:** 15% Norwegian market share, 45 MNOK **2020:** 30% Norwegian market share, 90 MNOK+ Enter EU.

**The Askw:** After successful development of Ducky services through pilot projects, we now see a significant increase of inquiries for our services. Therefore we need 9MNOK in order to scale up our sales force, increase market awareness and continuous platform maintenance to support an increasing customer base. This also includes moving from project pricing to scalable subscription models.

**Contact:** [bogdan@ducky.no](mailto:bogdan@ducky.no), +4746374435

1. Chava, S. 2014. Environmental externalities and cost of capital. Management Science, 60(9): 2223-2247 | 2. Ipsos MORI. 2008. Engaging employees through corporate responsibility. Retrieved from [www.ipsos.com/sites/default/files/publication/1970-01/loyalty-erm-engaging-employees-through-corporate-responsibility.pdf](http://www.ipsos.com/sites/default/files/publication/1970-01/loyalty-erm-engaging-employees-through-corporate-responsibility.pdf) | 3. Smith, A. 2014, October 12, 2014. Fortune 500 companies spend more than \$15bn on corporate responsibility. Available: <https://www.ft.com/content/95239a6e-4fe0-11e4-a0a4-00144feab7de>





# ECHO JAZZ

EchoJazz, turn  
plastic into  
something  
fantastic

**EchoJazz** is a swiss company, that provides high-performance acoustic absorbers for offices, retail, restaurants, hotels etc. to improve speech intelligibility, wellbeing, concentration and performance. The panles are made out of recycled PET (Plastic) bottles and can be customized to fit your project design and needs.

**Industry:** Interior fit-out industry.

**Product:** High performance acoustic absorber made of upcycled PET bottles.

**Customers:** Real estate developers, builders and furniture manufacturers.

**Influencers:** Architects and interior designers.

**Status:** Operational since August 15'.

**Company:** Based in Luzern, Switzerland, 6 FTEs.

**Current investors:** founders Investment opportunity: 2.5M€ in 4Q' 2018 to build European manufacturing unit.

**Key Team Members:** **Sven Erni, CEO:** 15 years experience in business development in corporate interior architecture and fit-out industry. **Christoph Nadelhaft, COO:** 16 years experience in corporate finance and project management at UBS.

**Forecast :** By the end of 2020 ECHOJAZZ upcycles 30M PET bottles, generating 3M€ in net profit.

**The problem:** Trends in corporate real estate promote an increasing demand of open space office space that are not fit to provide the user with the level of privacy demanded. Existing acoustic absorbing products are inflexible in its application and can implicate health hazards due to high VOC (Volatile organic compounds) and emerging fibers that cause lung damages. Most existing products are not using post consumer content in manufacturing and are not recycled.

**The solution:** By upcycling of 74 PET per sqm, ECHOJAZZ manufacturers acoustic absorbers that are more ecological, robust, lighter and flexible in its application than any other comparable product.

**Uniqueness:** The material looks and feels like natural wool felt with the outstanding properties of thermoplastic: the material is easily trimmed, screwed or die-cut. ECHOJAZZ offers a unique range of 20 colors. It manufacturers over 200 ready-made products in its facility in Switzerland and consults architects and interior designers with customized solutions applying algorithmic description of designs allowing the precise adaptation of the design and acoustic effect to spatial conditions on site.

**The market:** The interior-fitout-acoustic market is divided into acoustic building materials that are fix-installed by the builders, as well as the flexible and modular acoustic products supplied by the furniture companies. ECHOJAZZ can serve both industries at the same time. In a typical open-plan office, budgets for acoustic absorber products (ceiling, walls, partitions) hold account for 150–250€ per sqm depending on the level of sophistication. With 8.3M sqm transacted in Europe in 2016, the total market volume for acoustic products accounts for at least 120M€.

**Traction:** ECHOJAZZ focuses on the European market, distributing its products through a network of acoustic consultants and resellers. A diverse and large client network of MNCs with estimated sales totalling >2.5 M€ in 2017.

Contact: [sven.erni@echojazz.com](mailto:sven.erni@echojazz.com)





Producing better  
cellulose insulation  
material at lower  
cost and less  
investment

**Industry:** Energy saving with building thermal insulation material.

**Key IP:** International patent covering nine claims on both product, production process and installation process. Further patents are pending.

**Product:** The only Cellulose insulating material in reel, with the best performances in the world as Thermal conductivity and density, with very low LCA.

**Customers:** Distributors of building materials, installers, ESCOs, building builders, real estate funds.

**Status:** company founded in May 2016, material produced and tested at the end of 2016. Machine ready in May 2017.

- One distribution contract signed for Italy, under signature for France. 30 installations done so far.

- CE mark of product obtained.

**Company:** Located in Turin, Polytechnics Turin Incubator. 4 FTE.

**Current investor:** Founders (€ 100k in total).

**Investment opportunity:** 2,5 M€ to accelerate sales.

**Key team member:** Davide Contu CEO, experience in start-up. | Giandomenico RE CFO, experience in strategic consultancy.

**Forecast:** by 2020 yearly revenue 31Mio €, EBIT 7Mio €.

**The Pain:** Cellulose flakes for thermal insulation are produced today in dedicated plants with a relatively high fixed investment required. Base material is recycled newsprint with a significant percentage (>15%) of blank paper. Boron salts are a product with several hazards and are required to provide flame retardant and anti mold properties. Material is stored in plastic bags of relatively low density with high transportation cost. Final installation activity requires one dedicated resource, working in a dusty environment, to continuously refill a blowing machine.

**Enerpaper's solution** is based on reels of 100% recycled paper impregnated with specific chemicals, and produced by outsourced paper mills. Material is provided in high density reels. Those reels are flaked during installation through a dedicated blowing machine. Enerpaper's innovative approach allows substantial improvements in each part of chain of value: **a)** high scalability with strong reduction of capex associated, leveraging on paper mill industry with relatively "infinite" capacity and high margins; **b)** -50% chemicals with elimination of boron salts and residual inks; **c)** strong reduction both in storage (-80%) and in transportation needs; **d)** up to -40% workload reduction for refilling and improvement of workplace health; **e)** -40% material with better thermal insulation of more than 10%, thanks to optimized density; **f)** -30% of overall production costs; **g)** 50% reduction of LCA (CO2) thanks to the lower density.

**Traction:** Marketing activity launched by Italian Distributor in December on Edilportale (specialized magazine). In the first 3 days after publishing over 590 contacts for request of information by a wide range of players of building sector (installers, architects, construction companies etc).

**Partnership:** Three Papermill producers and two distributors (Italian and French).

**More information:** For additional information please contact Davide Contu at mobile number: +39 338 6020830 or via email: [davide.contu@enerpaper.com](mailto:davide.contu@enerpaper.com)





Energy recovery for commercial kitchen ventilation – born out of hundreds of customer requests, harnessing a natural force in a new and unique way.

**Industry:** Construction, Ventilation.

**Product:** Paradigm changing energy recovery unit, first ever designed to survive the grease and soot in commercial kitchen ventilation.

**Key IP:** Four patents, two with positive office action for Sweden and pending in PCT, another two pending in PCT.

**Customers & business model:** Sales of product @ ~70% margin and a monthly service agreement fee.

**Status:** First customer projects signed, one live; industrialization phase half finished.

**Company:** AB located in Malmö, 3 FTEs.

**Current investors:** SEED capital via Climate KIC.

Accelerator program (0,5 million SEK), first round financing with Interaktör AB and Energimyndigheten (Total 3,1 million SEK).

**Investment opportunity:** Second round financing geared towards take-to-market phase, total 15 million SEK.

**Key team members:** **Jesper Wirén:** 25 years market experience, one prior exit within the industry, entrepreneur. | **Nils Lekeberg:** M. Sc. Business Admin, former Marketing Manager Ford Sweden with responsibility for both sales and marketing. | **Bengt-Göran Karlsson:** M. Sc. Technical Physics, industry spearhead in heat pump know-how.

**Forecast 2018:** 50 units sold, cash flow positive Q3, FY turnover 25 million SEK, FY Gross Profits 17,5 million SEK, sales in three markets.

**Origins in customer pull:** Real estate owners miss out on tens of thousands of Euros every year because the abundant energy in the warm exhaust air from restaurants is not recovered at all. The professional real estate owner companies are well aware of this problem and how its solution could bring about huge monetary gain. Enjay's original founders Jesper and Nils were asked time and again if their air cleaning equipment could make the recovery of this energy possible and had to answer: No, sorry."

**The failed attempts of others:** At that point in time, attempts were made to deploy well established standard heat recovery units, like rotary or cross flow exchangers, and to protect them from grease and soot by using different air cleaning technologies – like the ones Enjay sold. However, none of these technologies are powerful and robust enough to do the job.

## Energy recovery in restaurant ventilation

**The unique Enjay solution:** A meeting with the largest technical consultancy firm in Sweden about three years ago made the two founders realize how huge the market is for a product that solves the heat recovery problem. They had the ventilation know-how, knew they had to think outside of the box and discovered that a powerful natural force, condensation, had never been used for this purpose. Enter Bengt- Göran Karlsson, technical physicist. Together, they carefully designed, empirically tested and finally constructed Lepido, the first heat recovery unit that reliably survives the hostile commercial kitchen environment with its grease and soot. Lepido is now poised to start recovering hundreds of thousands of kWhs from every commercial kitchen every year.

**The market:** There are approximately 1.5 million restaurants in the cold markets of Western Europe, and half of them are considered potential targets for Lepido. The current average estimate sales price is 40,000 €, entailing an initial market of 30 billion Euro. Furthermore, it is cold in America and Asia, too.

**Traction:** Enjay decided to install the full scale prototype at Burger King, the franchise that is considered a hopeless case by the whole ventilation industry. The full scale test has been running for a year and continues to deliver great results. Visiting the site with potential customers has been paramount in getting two of Sweden's largest real estate owners, Stena Fastigheter (8th largest) and Vasakronan (2nd largest), to sign contracts for pilotinstallations with a total invoice value of 1.9 million SEK. Enjay are also in the process of discussing with Fortifikationsverket (largest), ICA and Fortum, to name a few of the other potential customers in the sales funnel.

**Partnerships:** Enjay are ferociously courted by an undisclosed and still unsigned Swedish four billion SEK company in the industry, that want to utilize their multinational sales force to sell Lepido worldwide.

**More info:** Contact the founders directly,  
[jesper.wiren@enjay.se](mailto:jesper.wiren@enjay.se), / +46 (0)732-66 33 32 or  
[nils.lekeberg@enjay.se](mailto:nils.lekeberg@enjay.se) / +46 (0)733-66 33 41



Producing  
better cellulose  
insulation  
material at  
lower cost and  
less investment

**Industry:** Automotive.

**Key IP:** 2 french patents delivered and currently under international extension.

**Product:** Automotive Micro-Factories, and their vehicle consuming twice less energy.

**Customers and business model:** Licensing car micro-factories to emerging countries entrepreneurs and supplying spare parts.

**Status:** final vehicle ready for homologation in Dec 2017.

**Company:** Located in Bordeaux, France. 5 FTEs.

**Key Team members:** **Gael Lavaud** – Founder & CEO 15 years of automotive innovation.

**Emeric Bouteiller** – CTO mechanics 15 years of automotive competition mechanical design.

**Marc Duboc** – CTO composites 20 years of composites design and manufacture.

**Current investors:** Technostart (seed capital) and founders. Strong public support from EU KIC Climate, France (BPI) and Région (Conseil Régional Nouvelle Aquitaine).

**Investment opportunity:** 1.5 M€ in Q1 2018 for homologation, production launch and commercial development.

**Forecast:** Vehicle homologated in Q2 2018. In 2019, positive cash-flow. In 2020, 5M€ turnover and 10% net margin with 2 micro-factories and 300 vehicle/year.

**The pain:** Nowadays cars stands for 50% of air pollution in cities and 20% of world energy consumption. World car fleet will double in the next 20years, essentially due to growth in emerging countries. These countries currently use imported out of age cars because new cars are too expensive due to import taxes (up to 75%). How can we face this gasoline consumption increase with natural resources depletion ? How can we produce cars in these poorly industrialized countries?

**Gazelle Tech solution:** Gazelle Tech designs cars which consumes twice less energy and can be assembled locally in micro-factories made of containers. These microfactories are supplied by spare parts containers, avoiding expensive final products import taxes. They can be installed within few months, and are profitable over 100 cars/year.

**Aerocell composites chassis technology:** 75% of car energy consumption is due to their weight. That's why we developed a full composites chassis which enable our cars to be 2 times lighter while keeping comfort and security. Moreover this chassis is only composed of 10 parts which can be assembled within 1h without any tool. This is our secret sauce for competitive local car assembly.

**Market & competition:** Our 1st car is dedicated to emerging countries professionals for people transport such as taxi or authorities fleet. Their 1st cost center is gas consumption which directly impact their rentability. Consuming 40% less energy will enables them to save around 1000€/year, improving their air pollution in city centers. Competition is low on these markets because they are too small for big companies to install large factories in each country. Our factory installation cost is about 10 times lower. Partnering with local entrepreneurs enable us to take advantage of their local network to facilitate market penetration.

**Traction:** Partnership with car manufacturer for engine and software editor for crash. Currently under final negotiations for 2 pilot micro-factories in 2 different African countries in 2018.

**Contact :** Gael Lavaud - email : [gael.lavaud@gazelle-tech.com](mailto:gael.lavaud@gazelle-tech.com) - phone : (+33) 687 236 344



# HeatVentors

**Industry:** Energy efficiency.

**Product:** World first thermal energy storage for data centres and office/factory buildings.

- Benefits:**
- 20-40% energy saving.
  - 30-50% green-house gas emission reduction.
  - 90% space saving.
  - 0,5-3 years ROI.

**Status:** 5 years R&D, 2 prototypes, market ready product, working on the upcoming pilots.

- Pilot projects under construction:**
- Telecommunication site cooling at MVM.
  - Data centre cooling at IBM headquarter.
  - Office cooling at a NESTLÉ factory.

**Company:** Located in Budapest, Hungary.

**Current investor:** 100k EUR investment from MVM (biggest energetic company in Hungary).

**Key team members:** Rita Farkas (CEO) - Energy process engineer MSc. 5 years R&D experience in thermal energy storage system.  
Zoltán Andrásy (CTO) - HVAC engineer PhD studies 6 years R&D experience with phase change materials and thermal energy storages.

**Key Partners:** IBM, Nestlé, MVM, Hajdú, Naplopó, EU-FIRE

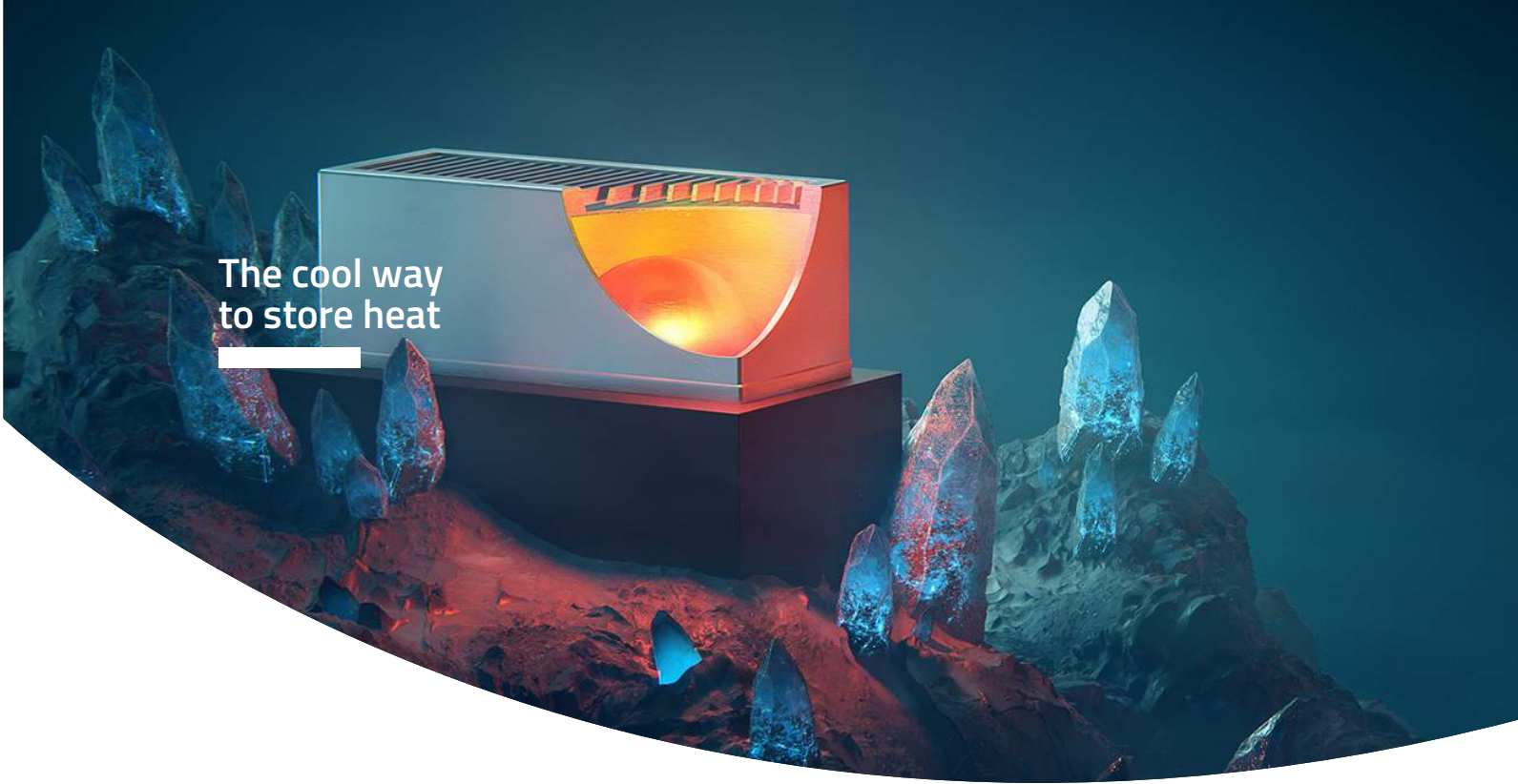
**Traction:** 14 international scientific publications won startup competitions (WSC, Nestlé Demoday, MVM Edison, Falling Walls, Climate-KIC Demoday) 112 PR articles/interviews.

**The pain:** 20 billion EUR worth of energy wasted in Europe every year because of none or not efficient thermal energy storage. It is not only energy, money, but a huge amount of green-house gas emission needlessly. This is mainly the pain of the office/factory buildings and data centres. Now we store heat in water buffer tanks, but they are too big, too expensive and not energy efficient enough, furthermore the maximum size is limited, that's why it is not possible to use them in data centres and large office/factory buildings!

**Our solution:** HeatTANK is our hardware innovation, a thermal energy storage tank based on phase change material technology. It can stores heat in almost 90% smaller size, can save 20-40% energy, can decrease the emission of greenhouse gases by 30-50%, with a quick ROI between 0,5-3 years. We have a pending patent and working on more, we have a 5 year know-how and an optimization algorithm (technical and price-value optimization as well), without it Heat-TANK wouldn't work optimally and ROI would increase remarkably.

**Our unique value:** For every system there is a design period, where we optimize more than 30 factors to the exact system (it is a quick process with our optimization software), order the parts and build the components into the system. Afterwards we monitor the system and if needed we optimize the operation further to get the most energy saving possible.

**Present state:** The research and development of HeatTANK started more than 5 years ago as a university project with many scientific publications and awards and 2 prototypes. From the beginning of 2017 are working on making the product from our strong know-how. We won many startup competitions and our product is ready for the market. Currently we are working on pilot projects with IBM, Nestlé and MVM (biggest energy supplier in Hungary) on data centre and office cooling. By the end of 2017 we will have the proof from the measured data on site.



The cool way  
to store heat

**Market:** 5 billion EUR is spent on thermal energy storages in Europe every year. This is expected to increase due to the fact that our solution can open the gates for larger scale energy storage (data centres, huge office/factory buildings). Our beachhead market is the cooling systems of data centres and office buildings in Budapest, Hungary. After the pilot projects we can spread HeatTANKs in the companies' networks who helped in pilots and also we can start projects at other companies, countries and continents. Later we can expand the market with the segments of heating-, renewable energy systems and industrial processes.

**Business model:** At the beginning it is simple: HeatVentors sells HeatTANK to data centre/office building owners. We will be cash flow positive by the middle of 2018. **Later we have more plans:**

1) Continue the beginning model and bringing the product to market by ourselves.	2) Bringing HeatTANK to market collaborating with distributors.	3) Licensing/selling the technology and know-how.
----------------------------------------------------------------------------------	-----------------------------------------------------------------	---------------------------------------------------

**Vision:** In 5 years there will be 1 million pieces of HeatTANKs sold. Depending on the business plan, either we or other distributor companies will sell this amount. We will start to work on our next product with thermal energy storage, possibly a product for general costumers. In 10 years we will have at least 3 more products ready for market.

**We are looking for** 150k EUR smart investment, beside the money we ask for help in understanding the market in other countries, we would like to get in touch with energetic companies and designer engineer offices and we are looking for costumers. Don't miss the chance to be part of a great team with a groundbreaking product and an important mission! Let's save the world together! :-)

**Contacts:** [heatventors@gmail.com](mailto:heatventors@gmail.com), [heatventors.com](http://heatventors.com)





Develops,  
manufactures and  
sells transparent  
foils and panels  
for Concentrated  
Solar Power

## EXECUTIVE SUMMARY

**Problem – Cost of Heat & Carbon Emissions:** Cost of heat from natural gas and biomass is ~€30–40 per MWh. Since heat is primary energy form for most processes this affects production cost of most goods globally. Further, the cheapest energy is in general based on fossil fuels emitting carbon and thus primary driver for climate change.

### Solution – >50% Cost Reduction, No Emissions:

Cost of heat instead at €5–15 per MWh. Heliac has developed a method for very large-scale production of lenses that focus sun light, hence generating heat. Expensive, mirror-based systems doing the same already exist and work well. Our solution replaces the mirrors, while leaving the rest of the system

untouched.

**Team:** Heliac comprises a diverse international team of 8 persons with senior skills in technology, entrepreneurship, internationalization and financing. Products are developed, produced, and launched in close collaboration with established companies and organizations such as Siemens, E.ON, AlfaLaval, Danapak, and Fraunhofer.

**Traction:** E.ON has bought a full-scale plant delivering 1.7MW district heating. This will be commissioned early 2018. Other potential customers asking for significantly larger systems are in the pipeline (presently totalling ~250MW = €50M).

**Business Model:** Two models are presently in play – defined by first customer and possible second customer:



a) **Selling panels & service.** With customers paying 50% when ordering this model yields relatively low capital requirements while service contracts ensure recurring revenue.



b) **Selling energy on long contracts.** Requires Heliac to finance the solar fields, but may be more attractive over lifetime.

**IP:** The basic technology and system design is patented. The production method for the light concentrating foil is protected as secret knowhow. It has taken 5 years to develop. We estimate skilled teams with strong financial backing will need at least two years to develop solutions with similar efficiency and economics.

**Climate Impact:** Since price is a major driver in the energy market we find it likely that others will be inspired by this new, inexpensive approach to harvesting and utilizing solar energy. It's therefore our hope that solutions like ours eventually will reduce global carbon emissions with at least 10%.

**Financials:** Heliac has raised €4M (€1.5M from private investors and €2.5M in grants). Expected revenue in 2017 is €0.5M. With present level of activity, we are funded through at least 2018.

**Ask:** Heliac can already today source all components in amounts able to meet demand at any size. Hence, fundraising is primarily organizational build-up for expansion within one or more of the possible application areas; district heating and cooling, desalination, process, and power production. Ask per application area is €5M.

**Perspectives:** Our production method is a generic platform enabling large-scale production of micro-structured polymers. This opens for other applications not mentioned in this summary. Further, a novel, low-cost heat storage system is being build and tested in collaboration with Siemens, Alfa-Laval, and Denmark's Technical University.

Contact: HELIAC | Savsvinget 4D | DK-2970 Hørsholm | Denmark | [www.heliac.dk](http://www.heliac.dk)





Reducing Co2  
and o2 Emission  
with Retro  
Electric Bike and  
Mopeds

**Industry:** Bicycles and mopeds.

**Product:** Handmade retro electric bike and moped.

**Customers and Business Model:** Retro vehicles owners, direct and sales via distributors and shops.

**Status:** Working prototype.

**Company:** located in Poland, 7 part time employees, 1 FTE.

**Current Investors:** Founders, crowfunding business angels, local authorities (310 000 eur in total).

**Investment Opportunities:**

1 mln eur in 2Q 2018 to produce 500 vehicles (ebikes and mopeds) and certify Kosynier as moped. Forecast – cash flow positive Q4 2019, projected turnover by the end of 2018 – 400 000 eur.

**Problem:** There are over 2 milion of retro vehicles in Europe. Every year emission standard are getting more strict. For the past 14 years emission of CO2 for motorbikes went from 13g/km to 1g/km. City authorities in Paris already banned vehicles owners which are over 10 years old to enter city limits. Oslo, Hamburg, Barcelona, Amsterdam are following this path. None of the retro vehicles which are over 25 years old meet any CO2 or NO2 emission standard, and it is impossible to estimate their climate impact. Current solution is to place entry bans for old vehicles.

**Kosynier's Solution:** Electric retro bike/moped. 100% electric free of any pollutions. Allowing every retro vehicle lover to use and enjoy it in every day duties without concerns when entering the city centers. With its top range of 100 km and speed of up to 25 km/h, can be sold to everyone as a regular bicycle. Its shape and design origins from the golden era of boardtrack bikes.

**The Market:** Sales of electric bikes in Europe has grown from 98 000 in 2006 to 907 000 in 2013. Germany and Netherlands in 2016 generated the sale of over 700 000 e-bikes with intention to grow.

**Traction:** Official sale of Kosynier will start 2nd quarter 2018. Team have developed working prototype. With the help of local authorities and busines angel, Kosynier Team raised over 200 000 eur necessary to start the production of first 50 bikes along with EU Certificate for e bikes. Kosynier presaled already 7 units to direct customers and is approached by distributors from England, Germany, Italy, Norway, France, Belgium with demand of 50 units per month.

**Partnership:** Ford Motor Company Poland supports the team from September 2017 in logistics and PR processes. Project is supported by 2 great Kosynier ambassadors: Rafal Sonik – winner of Paris – Dakar Race 2015 in ATV division and Marcin Gortat – Washington Wizard NBA player.

**Future:** Kosynier is working to raise the capital necessary for testing and certification process in order to be sold as a moped allowing higher speed of 45 km/h and produce 500 units for 2019 season. New, two versions of the bike will be presented to public in 4th quarted of the 2018.

Team Members: **Marcin Bielawski** – co-founder – over 10 years of experience in public relations in private television sector. | **Michał Bielawski** – co-founder – handcraft coordinator. **Mateusz Przysiał** – co-designer of Ferrari 488gtb interior. | **Marcin Tyminski** – over 10 years of experience with batteries and electric engine units. **Marek Wolny** - chief technologist with life time experience in manufacturing processes cooperating with VW, Man, Solaris, Volvo. | **Marek Deska** – welder and specialist in metal industry (working with Mercedes, TMobile, Orange supplier). | **Jakub Sikora** – salesman with 13 years of experience in automotive industry. | **Małgorzata Bielawska** – supply and logistics, responsible for logistics operation in the McDonalds and Starbuck supplier.

For more information please visit [www.kosynier.eu](http://www.kosynier.eu), email: [Jakub@kosynier.eu](mailto:Jakub@kosynier.eu), tel. +48 881 088 321





#### Industry

Maritime/Waste-to-Energy.

#### Technology

Pyrolysis processing equipment to produce Bio-oil and Gasifiers producing electricity.

#### Customers & Business Model

Production and supply of bio-oil for the maritime sector targeting purchase agreements with large shipping companies.

#### Status

Company launched in 10.2015. Oil produced from three abundant feedstocks and electricity from one feedstock. 100 tons of oil sold in India. Purchase agreements signed from two major shipping companies.

#### Company

Headquarters and R&D in Copenhagen Denmark. Manufacturing, containerization and testing in India (Chennai and Ahmedabad).

#### IPR

Knowhow on how to analyse feedstocks and how to conduct low cost pyrolysis without secondary reactions taking place.

#### Current Investors

Entirely publicly financed until this point. Company remains undiluted. Substantial donations made by the maritime industry to develop mobile feedstock testing laboratory.

#### Investment opportunity

5million DKK to purchase 3 reactors and set up a supply chain in Africa.

#### Key Team Members

CEO - J. Andersen: Serial Tech.

Entrepreneur, 10 years experience.

CTO - Prof. T. Howard: Mech.Eng.

CSciO - Dr. K. Chakravarty: Chemical Eng.

#### Forecast

Cashflow positive 4 months after investment. Year 1:

Gain maritime investment. Year 5: 500 reactors in operation; 0,6M tons of oil produced annually with 1,14 Billion DKK turnover.

#### The Pain

The maritime sector is due to a count for 17% of global CO2 emissions by 2050 if left unregulated, due to reliance on fossil fuel oil. Until now Sulphur emissions have been regulated in some shipping zones restricting fuel choices but further environmental regulation is inevitable. Large shipping companies are eager to move to bio-oil but this is currently unfeasible due to the following three factors:



The cost of bio-oil is too high and since fuel is often by far the biggest opex item for shipping companies, this is critical.



The global supply/availability of bio-oil is too low.



The acidity level of bio-oils are too high for ship engines.



## Bio-oil Supply for the Maritime Industry

#### MASH Biotech's Solution

MASH Biotech are capable of producing and selling bio-oil at a price per MJ competitive with the current fossil oils. The fuels meet the marine fuel requirements with low Sulphur, acidity number, viscosity and high flashpoint. When producing the bio-oil the reactor will also generate a bio-char, which will be replanted, sequestering huge amounts of Carbon. For every ton of MASH oil used by the shipping company, its CO2 footprint is reduced by 8 tons.

#### MASH Biotech's approach is unique

MASH Biotech have become experts in analyzing feedstock and developing low cost pyrolysis equipment to meet the requirements of the marine fuel market. The extremely low cost and compact reactors are designed to process 15tons/day of dried biomass. The reactor will fit into a shipping container and transported to the location of the feedstock. The oil generated will be delivered to the nearest port for bunkering. The feedstocks targeted are low value wastes that need to be dealt with and have the blessing of local communities to be harvested/bought and used. For the most expensive feedstock (0,5dkk/kg) the payback time for a fully utilized reactor is just 4 months.

#### The Market

The major shipping companies can purchase 10M Tons of fuel annually. Once gaining a contract with a major shipping company MASH who will agree to purchase all MASH produced oil, no further sales efforts will be required. Regarding biomass, the top 2 biomass identified will be able to meet the demand.

#### Traction

Fuel has been generated from 3 abundant feedstocks and sold for above 1,9dkk/kg. Large purchase orders for fuel have been gained from two major maritime companies. Fuel data sheets have confirmed the fuel to be compliant. One major company is currently analyzing a sample of the fuel. For the first target feedstock a 20% scale reactor has been successfully built and tested.

More information: For additional information or to schedule a presentation detailing the opportunity please contact  
Thomas Howard | [tom@mash-biotech.com](mailto:tom@mash-biotech.com) | +45 50 11 59 82.





## ABOUT

### Problem

Urban mobility contributes to 40% of all CO2 emissions caused by the road transport. It is not only aggravating climate change but also threatening the health of people living in urban centers.

### The Solution

For this reason package delivery companies are willing and committed to become more sustainable and even vehicle-free in urban centers.

## WHY NÜWIEL?

**Clean transportation solution:** zero emission, zero noise, zero pollution.

**Ease of use:** 1 second to connect to ANY bicycle or electric bike. No training required. A bike courier can start using the NÜWIEL-trailer instantly.

**Increased effectiveness** of existing infrastructure: x3 times more payload of existing cargobike (up to 200kg), no effort for the bike courier.

**Flexible size:** any type of transport box (EUR6, EUR1) to carry bulky, fragile and temperature sensitive packages.

## ADDRESSABLE MARKET

**Courier-Express-Parcel market** (CEP) is a global 304B EUR market growing at a CAGR of 5.78% during the period 2016-2020.

NÜWIEL's first market is express and parcel delivery in Germany with 5,8B EUR revenue pool for motorized transport vehicles. A DLR study reveals that 70% of motorized car trips can be shifted to cycling, which makes our addressable market 4B EUR.

## CURRENT STATUS / TRACTION

**Patent granted** on sensor design and control algorithm. **4 LOIs** and pilot projects with package delivery companies, including UPS and Liefery (Hermes Group). **3 working prototypes** built and tested.

**3 consecutive times** selected for the Climate KIC Accelerator program and Autobahn Plug&Play. **2 development contracts** pending. Collaboration to build a custom model of NÜWIEL-trailer. **1 of the 10 startups** worldwide selected for the IKEA Bootcamp Program.

## GO TO MARKET / MONETIZATION

There are three B2B revenue models that we aim to implement step by step.

DOWN PAYMENT	CUSTOM FLEET	SERVICE
Monthly fee of a standard trailer.	Direct sales of integrated trailer solutions.	Monthly fee for online tracking and fleet management.
2018	2019	2019

We start leasing standard trailers to SMEs to prove scalability and acquire early adopters. Once a standard trailer design is series ready, we go into integrated design solutions such as custom transport box, electronic lock system and other add-ons as well as offer services.

## FUNDING

**Total funds raised 500K EUR:** Heartbeat Investments (GE), founders, public funds (EXIST, InnoRampUp, Climate KIC), IKEA. **Investment opportunity:** 750K EUR in Q1/2018 to start pre-series production, product certification, acquire early adopters and generate 350K EUR in revenue through building sales infrastructure. **2M EUR** in Q1/2019 to start series production, hire 10 FTEs to accelerate sales and generate 3M EUR in revenue by end of 2019.

## TEAM

**Natalia Tomiyama, Finance & Marketing** (MSc in Mechanical Engineering/MBA in Technology Management) 5 years of experience in project management and market analysis for companies like Airbus and Jaguar. Natalia raised 4M EUR for developing the first Entrepreneurship Center in Hamburg. | **Fahad Khan, Product Development & Technology** (Double MSc in Aerospace Engineering) 6 years of experience in Design for Manufacturing and Rapid Prototyping in the aerospace industry. As a leading engineer, Fahad carried out complete design, manufacturing and testing of autonomous drone systems. | **Sandro Rabbiosi, Production & Sourcing** (MSc Production Management/MBA Technology Management) 5 years of experience in Production and Project Management at the Körber Group. Sandro redesigned two manufacturing plants improving their manufacturing efficiencies for the world's second largest forkliftcompany. | **Dr. Rainer Hoenig, Advisor & Investor** (Heartbeat Investments) 20+ years work experience in aerospace, energy and marine industries. Former managing director at Rolls-Royce Deutschland supports NÜWIEL with his expertise in strategy, engineering, supply chain and manufacturing. **+ additional 3 FTE's by now.**

Hamburg, Germany | Founded July 2016 | natalia.tomiyama@nuwiel.de | nuwiel.de  
| e-Powered Bicycle Trailer | Last Mile Delivery | e-Mobility

Clean urban mobility for packages in last mile



**Industry:** AEC (Architecture Engineering Construction).

**Key IP:** hard to replicate knowhow, leadership in the research on Architectural Design Optimization methods, first implementation of Swarm Intelligence in the architectural design (Cichocka, et al., 2017).

**Product:** SusMass™ (SUSustainable MASSing), the world's first AI-based online tool for building shape optimization aiming at maximization of their energy efficiency.

**Customers and business model:** Real estate investors – earning money on building and renting; dual payment method – per use and monthly subscription.

**Status:** Product do be launched in June 2018. 10 pilot projects completed for Mexican developers; Accor hotel group – in a negotiation for paid early access to the tool and collaboration on development.

**Company:** a spin-off from TU Berlin, Hardenbergstrasse 38, 10623 Berlin.

**Current Funding:** EXIST Business Start-Up Grant.

**Investment opportunity:** €100-250k in Q1 2018 to accelerate product development and marketing.

**Key Team Members:** Adrian Krežlik – CEO, a practising architect and a creative entrepreneur with 6 years of postgraduate experience. | Judyta Cichocka – COO,

researcher, Architectural Design Optimization Expert, project leader, tutor at the most renown conferences. [Agata Migalska](#) – CTO, an IT specialist with 9 years of experience in programming and team management, a PhD(c) in computer science.

**Forecast:** cash flow positively by Q1 2019. By the 2022 our services will rich 500 000 users and have yearly revenue of 10 million euro.

**The pain:** The real estate developers look forward to maximizing their ROI. This could be achieved by the reduction of maintenance cost of their investments. Maintenance cost stands for 80% of the total cost of the building in its life cycle and is a long-term consequence of the decisions made in the early design phase. The primary contributor to the costs of maintenance are power bills for lighting, heating and air conditioning. It has been proven that optimization of the shape of the building in the early design phase can reduce the energy consumption of the building (Mueller and Brown, 2016). Currently, in the majority of cases investors have to rely on architect's gut feeling – an architect chooses several options by hand. An investor has no guarantee that their investment is the most profitable that they can achieve.

## Smarter architecture for sustainable cities

**Parametric Support Solution:** On the contrary to traditional architectural “guess and check” practice SusMass™ is going to employ Architectural Design Optimization (ADO) to evaluate the whole landscape of options and choose the most energy efficient one. Employing methods from AI will optimize the geometry of the building so that the outcoming shape guarantee the optimal shape for minimal building envelope (minimal heat gains and losses) with maximum floor area.

**Parametric Support's approach is novel:**

A) We are first to introduce multi-objective optimization based on Swarm Intelligence into the AEC sector.

B) We guarantee to find the best performing (the best value proposition) design solution – enrichment of ROI.

C) We help investors to reach the best ROI by the skillful design in early design phase.

**The market:** Parametric Support operates in the global construction market which generates a revenue of 10 trillion €. Our target customers are real estate investors developing office buildings and hotels. We estimate that we have around 20k of target customers around the world with more than 10 000 projects a year.

**Traction:** At the moment we are funding from the EXIST stipendium. We have a prototype of SusMass™ tool. We plan to launch it in June 2018. At the moment we earn money on providing trainings in ADO for professionals. Organizing 2-3 trainings a month we generate profit of 10 000€ a month. We completed 15 pilot projects with Mexican architects and developers. We have 2 contracts in the negotiation.

**More information:** For additional information or to schedule a presentation please contact Judyta Cichocka: [judyta.cichocka@parametric.support](mailto:judyta.cichocka@parametric.support) | Hardenbergstrabe 38 10623 Berlin, Germany | [www.parametric.support](http://www.parametric.support)

N. Brown and C.T. Mueller. "Design for structural and energy performance of long span buildings using geometric multi-objective optimization." Energy and Buildings, vol. 127, pp. 748–761, 1 September 2016.





# POWERWHALE

BY FAIRHYDRO

Local electricity  
production by  
floating  
hydropower  
generator

**Industry:** Clean energy.

**Key IP:** A patent concerning novel turbine technology in a floating generator.

**Product:** A mobile floating power generator for slow and large rivers.

**Customers and business model:** Owners and operators of pontoons and fixed boats. One time fee of the device and recurring maintenance fee.

**Status:** Prototype is being built in Q4 2017 to be working at a pilot customer in Budapest.

**Company:** Located in Budapest, Hungary. 2 FTEs.

**Current investors:** Climate KIC Grant 2016 and founders.

**Investment opportunity:** €150K in Q1 2018 to employ sales representatives and start manufacturing.

**Key Team Members:** Dénes Hajtó CTO Naval engineer, inventor, 15years of experience in designing and building boats and floating harbours. | Gábor Törő Business Developer Management consultant, 20 years experience of building and managing innovative companies.

**Forecast:** By the end of 2020, 2000 PowerWhale generators sold, revenue €10 million, profit €3 million.

**The problem:** The large European rivers are used for generating electricity only by huge dams that stop the river. We miss the opportunity to harvest the constantly flowing hydrokinetic energy for local and decentralized electricity production.

**PowerWhale solution:** An innovativ mobile and floating electricity generator. Dimensions are 1m x 1m x 1,5m. Power production is 0,8 kW in 7/24 at an average river speed. The PowerWhale generator can be simply tied downstream of floating pontoons or fixed boats along the riverbanks. The generated electricity can be used locally or sold to the grid.

**PowerWhale is unique:** Instead of a traditional water wheel it spins a sequence of blades that move on triangular shaped tracks. While most of the blades are working under water critical moving parts of the PowerWhale and the generator module are above the water level which makes maintenace easy. This new and effective way of transforming hydrokinetic energy is protected by a patent. PowerWhale's advantage to other renewable energy sources is its predictable production. It can work 24hours a day and 365 days a year.

**PowerWhale is unique:** Instead of a traditional water wheel it spins a sequence of blades that move on triangular shaped tracks. While most of the blades are working under water critical moving parts of the PowerWhale and the generator module are above the water level which makes maintenace easy. This new and effective way of transforming hydrokinetic energy is protected by a patent. PowerWhale's advantage to other renewable energy sources is its predictable production. It can work 24 hours a day and 365 days a year. We have 11 large rivers In Europe. We use about 9000 kilometres of these rivers for commercial and recreational boating. There are more than 9000pontoons and fixed boats tied to the riverbanks. More than 3000 of these use electricity and pay for it.

**Traction:** The prototype will be ready by the end of October. A fixed boat that rents out offices in Budapest already offered to test and possibly buy the first turbines.

For more information please visit [www.kosynier.eu](http://www.kosynier.eu), email: [Jakub@kosynier.eu](mailto:Jakub@kosynier.eu), tel. +48 881 088 321





## Solar Monkey

**Product category:** Software and services for cleantech.

**Mixed team with strong technical background:** Jan Pieter Versluijs, CEO MSc TU Delft, founded and sold multiple SME's, senior consultant at Newton Europe before starting Solar Monkey with Mels. | Mels van Hoolwerff, CFO & HR: MSc TU Delft, graduated on the modelling of solar power output. | Tino de Bruijn, CTO MSc TU Delft, 10+ years experience in developing software, graduated from Industrial Design on creating a user friendly electronic health record application. **4 Software Developers and 2 Business Developers who highly believe in our mission!**

**Current investors:** Innovation Quarter and private fund of €300K total, accumulated public funds of ~€250K.

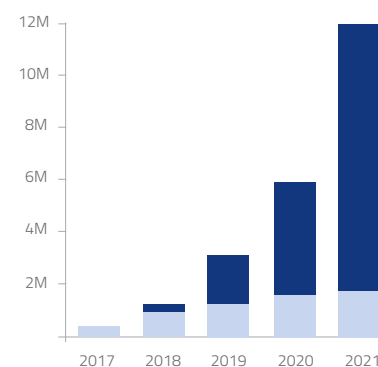
**Investment opportunity:** €1.5 mln for international expansion. Looking for a partner that can help us accelerate international growth (EU, UK, North America & Australia).

**Strong Partner network:** TUDelft, Utrecht University, Climate-KIC, Topsector Energie, YES!Delft, KNMI.

**Solar Market Growth comes with many Challenges:** To facilitate growth that can meet sustainability targets, solar energy needs to become more affordable, attractive and available. Prices of hardware have dropped significantly, but there is still much to win in decreasing design and acquisition costs.

Many installers work with old fashioned tools that require expensive preliminary site visits. Although solar energy is a hot topic that draws much interest from consumers, many are still hesitant to invest and on average 8 offers go out for a single sale. Hence installation companies seek innovation to increase efficiency and their unique selling points.

Revenue forecast (NL & Int.):



## Enabling Solar to become the world's leading power supply

**Solar Monkey Software: Efficient Design and Monitoring** With Solar Monkey's web-based software installers can design a solar system remotely within a minute. A unique combination of aerial imagery and LiDAR height data enables very accurate, automated calculations and custom, substantiated quotes. Installers decrease their total cost of acquisition by ~25%, gaining a competitive advantage. We are in the process of fully automating the design of PV systems, eliminating more manual labor and generating higher volumes of offers. To further establish trust from consumers we offer a guaranteed energy yield and support after-sales by monitoring installed systems, making solar more secure and attractive. In the process large amounts of data are gathered, enabling new future business models regarding the integration of solar into smart grids.

**Technological Advantage:** We have the knowledge and skills to process aerial imagery and height data necessary for automated solar design and monitoring. This is currently freely available in The Netherlands, and is becoming more accessible worldwide. Our technological advantage in processing this data gives us a head start in areas where it becomes available.

**Market Continues to Grow:** The installed base of PV worldwide has grown from 30 GWp to 400 GWp in 8 years and is predicted by the IEA to have grown tenfold by 2050. In The Netherlands 120k solar systems are installed annually, for which over 600k designs are made. Solar Monkey's target in NL is to facilitate 100k systems designs (€400k revenue) and monitor 9,000 systems (€1M) per year. Solar Monkey seeks to expand to six other countries with a total addressable market of €150M and obtainable market of €12M that we aim to achieve by 2021.

**Loyal and Growing Client Base in NL:** Since the product launch in June 2016 our client base has grown to over 75 installers, including the best-known Dutch energy supplier. In addition we have an integration with the Dutch largest wholesaler of solar system parts as an extra sales channel. To date our client retention has been 100%. In total we have facilitated 40,000 solar system designs and monitor over 1000 systems. We operate at a run rate of €300k annual revenue (70% recurring) and have displayed an average month-overmonth growth rate of 10% in 2017.

For presentations and more information contact JP at [janpieter@solarmonkey.nl](mailto:janpieter@solarmonkey.nl) or +31 614 974 734





**Industry sector:** CleanTech.

**Company:** Offices and factory located in Valencia (Spain).

**Product:** The first pre-assembled plug&play solar system for industrial heat.

**Climate impact:** Every module saves 9 TCO<sub>2</sub> /year.

**Key IP:** Patent concerning the transportable design and the selfdeployment system.

**Customers:** Industries with thermal processes: fermentation, pasteurization, cooking, drying, dyeing, chemical reaction, etc.

**Revenue model:** Turnkey model.

**Module price:** 10k€/module.

**Average project:** 8 modules/project.

**Forecast:** Cash-flow positive by Q3 2019. By 2021, 711 modules installed, yearly revenue of 11M€, and gross margins of +43%.

**Key Team members:** Miguel Frasquet (CEO) MBA and PhD in Solar Energy, 6 years' experience in managing solar projects for industrial applications. | Raul Villalba (CFO) MBA at London BS, 7 years' finance experience within solar companies, consultant firms, and a cleantech VC. | Juan Martinez (CTO) MSc. Mech. Eng, 6 years' experience in designing and manufacturing industrial equipment in aeronautics. | Dr. Daniel Villalba (Advisor) U.Stanford, U. Massachusetts. 44 years' experience in the energy sector. COB Atlantica Yield (ABY- NASDAQ).

**Investment:** 320k€ - Lanzadera, ClimateKIC, IVACE and founders.

**The pain:** Two thirds of the energy consumption in the industry is thermal energy, which is produced with expensive and polluting fossil fuels. In the case of heat intensive sectors, like food processing for example, thermal energy can represent more than 70% of the overall production costs, squeezing their margins and their competitiveness. Industries looking for solar energy alternatives, find that current technologies are only competitive at large scale (over 5MW), making them unviable for most industrial applications.

**Solatom's unique approach:** Solatom offers industries a viable alternative to traditional solar projects, producing pre-assembled modules which, connected together, form a solar plant. These modules are transportable, and can therefore be fully built in a factory, as opposed to traditional designs where the whole solar plant must be built on site. This approach takes advantage of infactory series production, cutting production costs by 65%. As a result, Solatom enables industries using fossil fuels, to cut their thermal energy costs by up to 37%, with less than 3 years payback.

**How is it possible:** Our design uses mirrors that follow the sun to concentrate the sunlight into a receiving tube where steam or thermal oil is heated up to 300°C. All components are assembled in our module which has the same size and transportability of a standard goods container. Once assembled, every module is calibrated and tested before being shipped, avoiding costly on-site construction and commissioning. All modules forming the solar plant are easily connected to the client's production process becoming operative just one hour after the delivery.

**Market:** According to the EU-JRC, thermal energy consumption in south European industries mounts to 19.000 M€ and grows by 7% each year. Our initial beachhead market is formed by food industries located in south European regions with a high price of fossil fuel (above 4c€/kWh), this represent a market of 89M€. We have started in the Spanish market (200 companies c. 14M€). Internationalization will start in 2019, by shipping modules built in our factory in Spain.

**Traction:** Concept proven with pilot. Two projects sold to industries in the last three months. Five more in the pipeline (+430k€). Invested by Lanzadera (startup accelerator owned by the biggest supermarket chain in Spain, with access to a 240 food factories network).

**We are looking for:** 470k€ investment. During 2018, we seek an international Business Angel with experience and contacts in the industry sector, and 170k€ investment in order to further develop our distribution channel. The remaining 300k€ will be used to industrialize the production during 2019.

Plug & Play  
modules  
vs On-Site  
construction

**Additional info:** For further detail regarding the project and the investment opportunity please contact:  
Miguel Frasquet - CEO [miguel.frasquet@solatom.com](mailto:miguel.frasquet@solatom.com) / +34 661540866

# SustAnalyze

Accelerating  
profitable, safer  
and sustainable  
chemicals &  
materials

**Customers:** Chemical-Material manufacturers and Brands who make products such as apparel, toys, electronics.

**Product:** Simulation software platform delivering integrated decision support.

**Status:** 1st version of product launched.

**Company:** Located in Utrecht, Netherlands, founded in 2015. 5 FTE.

**Current investors:** STW, ClimateKIC, Rabobank, Techstars-SAP, Own funds.

**Key team members:** Dr. Akshay Patel, CEO, PhD on

the topic and experience in chemical development. **Deboprio Ghosh, CTO**, Experienced technology architect. | **Tibor van Melsem Kocsis**, Sales Extensive enterprise sales experience. | **Prof. Martin Patel, CSO**, Extensive research and industry experience on the topic.

**Monthly burn:** 10K EUR.

**Revenue in 2017 till now:** 55K EUR.

**Forecast:** 300K EUR revenue by end of 2018 By 2022 company will have 40 million EUR in yearly revenue and EBITDA margins of +70%.

**Summary:** For brand owners and their material/chemical manufacturers, who are under pressure to bring new products to the market, our simulation software platform speeds up development cycles by upto 100x leading to:

1) reduction in brand risk.

2) manufacturing cost reduction.

3) revenue increase with profitable, safer and sustainable products.

**Pain:** Brand owners and their material/chemical manufacturers face huge complexity in bringing products to the market that are technically viable, profitable, safer and sustainable. The existing way of dealing with this complexity is based on experience/gut feeling driven decisions taken in a siloed process which leads to a really long time-to-market and extremely high failure rate with new materials innovation projects.

**Solution:** The simulation platform, born out of Akshay's PhD research on the topic, combines proprietary and public data to help customers run multiperspective iterations faster than ever before at early stages of R&D. These faster iterations help reduce R&D timelines and costs as a baseline. More importantly they make it possible to rapidly commercialize products that profitable, safer and sustainable leading to revenue boost.

**Business model:** Software license fees, data sales and report sales.

**The market:** Near term: 1 billion EUR | Long term with product vision: 40 billion EUR.

**Traction:** Successful paid pilot with customers that include Fortune 100 global apparel brand.

**Partnership with SAP:** Collaborating with SAP to leverage their customer network and data in their existing systems to deliver significant additional customer value.

For more information or to schedule a meeting detailing the investment opportunity contact  
Akshay, [adpatel@sustanalyze.com](mailto:adpatel@sustanalyze.com), +31 644232526 | [www.sustanalyze.com](http://www.sustanalyze.com)



**Product:** Technology able to recycle fiber reinforced composite waste, transforming it into high quality fiber, fuel and energy.

**IP:** PCT patent and industrial secret.

**Company:** Located in Barcelona (Spain).

**Key Team Members:** **Oriol Grau, CEO:** Degree in Business Administration, MBA. 15 years' experience in management. | **Ruth Castellar, CFO:** Master Degree on Account Management and Management Control, 19 years' experience in management. | **Felix López, COO:** PhD in Chemistry. 25 years' experience in researching and developing. | **Olga Rodríguez, CCO:** PhD in Chemistry, specialized in Materials. 13 years' experience in researching and developing recycling technologies. | **Ferran Grau CTO:** Industrial Design Engineer; Co-author of several patents. 17 years' experience in industrial researching and developing.


**Forecast:** EBIDTA positive by 2019, with sales of 861,000€. After internationalization in 2021 the EBIDTA will achieve 5M €.

**Problem:** Fiber reinforced composites, mainly composed by fibers and resins, are widely used in many applications (wind blades, boats, planes, some cars...) and its use is increasing 12% every year. However these materials, besides these good characteristics, have three main problems. Composites are causing a high environmental impact, they are very hard to recycle and a high management

cost. Composites producers pay a high price mainly due to the high prices of the carbon fibers. Waste generators pay high management cost (700€/Tn waste), and they are not complying with the European Union's recommendations on circular economy. That's the reason why composite materials are nowadays dump in landfills, wasting a valuable resource and causing a global environmental problem.

**Solution:** TRC, S.L. offers a technology providing a valid environmental management alternative for composites, using a unique process (R3FIBER). R3FIBER can manage the waste at a lower price, 34% cheaper (460 €/Tn), avoiding the dumping into landfills, and transforming this waste into products. On the other hand, thanks to this tech, TRC can provide composite companies, fibers with a lower price than the commercial ones, at least 25% lower (5,600 €/Tn carbon fiber), and with good performance, >70% of the initial mechanical properties, up to 90%. These recycled fibers avoid the production of new ones, reducing the carbon footprint.

**Climate Impact:** The use of this tech will save a high amount of CO<sub>2</sub> to the atmosphere, avoiding the manufacturing of new fibers. In 5 years TRC tech will save 26 MTons of CO<sub>2</sub> to the atmosphere.



**Transforming recycling composite waste into recycled fibers, fuel and energy**

**The Market:** With an annual growth of more than 12% and a global market of 2.5 billion euros, composites are one of the materials of the future. Companies pay high prices for fibers, especially carbon ones, moreover, these fibers have a high carbon footprint. TRC has started its implementation in the wind sector (our Beachhead market). Wind industry has generated 300,000 blades in EU, that are already dumped in landfills and every year wind industry generates around 40,000 blades more.

**Business model:** two sides B2B:



one side composite waste producers: fee for management waste (34% lower),



the other side, fibers user companies: selling fibers to lower price (25% cheaper).

**Traction:** In just 18 months, TRC has been positioned as one of the companies with the greatest growth potential in the cleantech area. TRC has received the seal of excellence of the European Commission, and has a full operation pilot plant. The company has signed a collaboration agreement with EDP (3rd world wind company) and has started to recycle the first blades. At the same time, TRC has received the proposal to recycle 249 wind turbine blades from other wind companies.

**Vision:** In 5 years TRC will have plants located in the main European and American markets. And through the patent will have coverage to extend the company to other target countries. We plan to expand the company to other countries, by Joint Ventures alliances with recycling and composites users. In addition to the blades, TRC is recycling composites of other industries such as fractions of airplanes, bicycles, etc.

**The ask:** The investment needs are 300.000 € that will be used to build the preindustrial plant of 100 Tn/year nominal capacity.

**More information:** Olga Rodríguez at [orodriguez@trcsl.com](mailto:orodriguez@trcsl.com) or +34 658 106 299.

# trucksOnthemap

We provide Trucking Professionals with easy access to future-truck-capacity in their trusted network. We help logistics professionals to significantly reduce empty miles and risks.

**Sector:** Digitization of Road long-freight transport.

**Financial Information:** Company Stage: Product launched May 2017. Current Monthly Net Burn: 3 k €. Pre-Seed funding: 68 k €. Seed funding: 90 k €. We are raising: 500 k € (will give us 18 months; spending: 70% on business development; 30% on product development).

**Founders:** Business Development: [Tamas Domonkos](#), BA, MBA, 17+ years' logistics and international business development experience (@ Eurogate Group, Toyota, Transporeon). | [Tamas Forray](#), BA, MSc in Logistics degree, 20+ years' logistics experience in operations and leadership (@ Philips, General Electric, Ruukki, Tredegar, Kingspan, Apollo). | [Balint Koch](#), BA, Technical university degree, 17+ years' logistics and leadership experience in the FMCG sector (@ SABMiller, Danone, Heineken). | [Agatha Domonkos](#), MA, former member of the Slovakian.

Deputy Prime Minister's Team for foreign affairs and PR. Native in Hungarian, Slovakian, English, fluent in French, basics in German, passive knowledge of Italian and Czech languages.

**Product Development:** [Zoltan Káldy](#), Software Architect, BC, technical university degree, 17+ years' experience in project management and software development (@ Exxon-Mobile and Visteon). [Zoltan Fekete](#), Software Engineer, BC, technical university degree, 20+ years' experience in software development (@ Visteon).

Private Investors: [Adam Nagy](#), Economist, Entrepreneur, Co-founder of Eurogate Logistics Group (UK), 17+ years' experience in freight forwarding. [RT Logistic, a.s.](#), logistics investor (Slovakia, EU).

**Advisors:** **Law:** James Carter, Charles Russel Speechlys LLP. **Tax:** Mark Nunes-Vaz, Marchant Lewis Limited.

**Opportunity:** 12-27% of the long-haul truck journeys are run empty, with no cargo. In the EU and the USA deadhead trips hit 120 billion km a year\* (increasing). There are 3 mayor parties involved in long-haul truck transportation: the shipper (manufacturer); the freight broker (none-asset based carrier); the trucker (asset based carrier). In general, the freight broker combines cargoes to a load and books the freight truck for it.

**Pain:** There is an information asymmetry in the trucking industry. Using current tools, freight brokers book trucks with on the average 70 km empty run per truck-load, because in most of the cases they don't know which trucks will be available closer to the pick-up point.

**Product:** We've co-developed with industry leaders the online map and professional social medium, where there are free trucks visible and bookable at any future time, anywhere on the globe. Value Proposition TrucksOnTheMap.com is the safe truck-availability-map, where Shippers get A+ truck for every load and delivery status real-time; Freight brokers find closest available trucks quicker, and get best quotes; Truckers run fewer empty miles. Return on Investment within 3 months.

**Market:** Target Customers: Shippers with long distance full-truck-load spot demand + their logistics providers' network. User cumulation rate: 1 shipper user adds ~ 3,7 new partner users Primer Market: EU. Secondary Markets: USA, Canada Primer Market size (EU): 1.2 M\*\* users (avg. revenue: 12 €/user/week) Target market share (EU): 17 % Value (EU): 127 M € (ARR).

**Competition:** In general, our main competitors are the old-school methods and communication tools: phone, email, fax, open load boards (e.g. TimoCom, UShip, Teleroute). US startups target the niche market as well (e.g. Uber Freight, Transfix, Flexport, Convoy). The digitalization of logistics and especially of the freight forwarding business will happen in the next 3-7 years. There is no prevailing standard solution on the market, yet. Competitive Advantage: TrucksOnTheMap has about 9-10 months of competitive advantage due to real-live operation customer-feedback-based product development.

**Marketing Strategy:** Multi-Channel Marketing: a) We have involved early adopters in the software development phase. This meant integration of cca.150 users at the first release. b) There are 4 Logistics Experts in our founder team with cca.300 potential users in their network. We establish a multilingual Bus. Dev. / Consultant Team, that introduces TrucksOnTheMap to the key players of our markets. c) There are several growth-hacking features integrated into the software, that accelerate the market penetration of the solution. d) Content marketing, publications on social media and participation on industry events, awards and exhibitions will raise brand awareness. e) Cooperation with market influencers, such as logistics associations, research and education institutes, complementary providers generate leads.

**Revenue Stream:** SaaS principle: 1) Recurring user fee / week, 2) Transaction fee / assigned transport job, 3) User fee for the Mobile App for Truckers, 4) One-off charges for additional services (e.g. Assisted implementation; Reports; Tailor-made ERP interfacing). LTV: 3.200 €; CAC: 170.

**Traction:** Product development: since October 2014; Backed by two industry experts in 2015 and 2016. Public Beta release: March 2017; No. of pre-registered users: 147 Official system launched: on 3rd May 2017; No. of registered users: 275 Listed by Jonathan Wichmann: on "The most promising startups in logistics" list\*\*\* 1st Prize: on EIT's Climate KIC Startup demo day (May 2017, Budapest) **Current Key Customers:** Apollo Tyres – Vredestein; DHL Freight; C.H. Robinson.

TrucksOnTheMap Ltd., Laser House, 132-140 Goswell Road | London EC1V 7DY  
[www.trucksonthemap.com](http://www.trucksonthemap.com) | [tamas.domonkos@trucksonthemap.com](mailto:tamas.domonkos@trucksonthemap.com)

Truck  
capacity nice  
and easy





**Industry:** Ecommerce Logistics.

**Product:** Consumer centered delivery services.

**Current Investments:** Business Angels + crowd funding € 385K.

**Team:** Jan Wijn CEO: MIL, MBA (IE), 7 years logistical experience at TNTExpress, 10 years innovation and launching experience. | Dimitri Balai COO: 13 years logistical experience, Lean Six Sigma. | Hidde Stokvis CTO: 13 years development experience. TU Delft. 4 Startups, previous exit.

**Total team:** 6Fte.

**Problem:** 25% Of the online orders are not delivered to the intended recipient. In The Netherlands alone, this accumulates to 36.000.000 disappointing customer experiences and wasted time for redeliveries and neighbor deliveries. As a result of this, 50% of consumers have abandoned a shopping cart as they couldn't find satisfactory delivery options.

**Trunkrs' solution:** At Trunkrs we believe that receiving your online order should be as flexible as your life. We create smart solutions to adjust our services to your

schedule. We allow consumers to take control of the delivery process. This way we can reduce the non-deliveries with 80%. By using innovative delivery systems we create flexibility in the proces with a minimal impact on our efficiency and at affordable prices. Looking forward we are working towards on-demand and to-person (instead of to-adress) deliveries.

**Trunkrs' approach is unique:** A: Trunkrs puts the recipient in control regarding delivery moment and place via our AI powered chatbot. B: Trunkrs reduces the time between online order and delivery, so the recipient location can be determined better. C: Because of our IT enabled partner approach, we are able to scale quickly to new regions.

**Market size:** The Dutch B2C parcel market is about 200 mln packages that are shipped at an average price of € 4,18. Pricing levels in The Netherlands are competitive, in many countries higher shipment fees are standard. The countries that Trunkrs has selected for expansion have a combined Ecommerce market worth \$684 Bln, The Netherlands total Ecommerce revenu has a value of € 18 Bln. Globally, Ecommerce is growing with double digits. This shows the (growth) potential for an awesome delivery service.

Reducing  
dissappointing  
ecommerce deliveries  
by recipient centric  
deliveries

**Traction:** Trunkrs now ships over 10.000 parcels per month. Zalando is our largest customer. We do roughly € 50K in MRR and are growing fast. In total we have processed 62.500 shipments in 2017 YTD. We have serviced about 58.000 different recipients.

**Business model:**

We sell our service to the webshops. To get higher volumes fast, we focus on larger etailers. We charge a fee per shipment.

Prices are largely dependent on amount of shipments per customer. Cost per unit are strongly correlated with total volume of shipments in a defined region.

For The Netherlands, we aim to reach COGS break-even at the end of Q3 of 2018.

**Long term vision:** In 2022 we aim to cover at least 13 selected countries and to ship over 50.000 shipments per day. We aim to realise a minimum marketshare in the Same dy delivery field of 10% in each area we offer our services. Revenu will grow to around € 165 mln in 2020.

**Ask:** At the end of 2018 we aim to become profitable in The Netherlands. To reach this milestone, we need € 1 mln in funding. This will be used to build the Network in The Netherlands, Accelerate Sales and to further develop the IT. The learnings and developed IT will serve to enter and reach profitability in new markets even faster.

Company details: Trunkrs B.V. Sportlaan 3A, 4131NN Vianen  
Contactdetails: +31640645972. jan@trunkrs.nl



# Twipes

## The Problem

Toilet paper isn't antibacterial, leaving consumers feeling unclean and resulting in 14% of wet wipes customers using wipes for personal hygiene in toilets. This has led to wipes that claim to be "flushable" or "biodegradable", but aren't actually flushable at all! These wipes block sewers and wash up on beaches, causing huge damage to the environment and costing water companies across Europe over €189 million per year to clean up!

## The Solution

Twipes are the world's first truly flushable wet wipes. They are antibacterial, like wet wipes, but on a roll, like toilet paper. Whilst other wet wipes take a minimum of 100 days to break down in water, Twipes break down in just 3 short hours meaning no more sewer blockages.



- On a roll - Unlike ordinary wet wipes, Twipes come on a plastic roll that fits into existing toilet paper holders.



- Antibacterial - Twipes have antibacterial elements making them cleaner than toilet paper.



- Sensitive Skin - Twipes are alcohol-free and paraben-free, making them great for use on sensitive skin.



- Eco-friendly - Regular wet wipes don't flush! Twipes break down in just 3 hours due to our flushable technology.

## The Team

Twipes have raised over €160 000 in angel investment and have become the Mayor of London's Entrepreneurs of the Year as well as the UK Women's Startup of the Year for 2017. The co-founders have known each other for 7 years and the board of directors includes an esteemed panel of personnel from academia, government, as well as a current director of the global pharmaceutical company GlaxoSmithKline.

## The Market

The global wet wipes market is worth over €10 billion annually. Twipes currently target boutique stores and luxury hotels in the UK and are expanding within 2 years to the rest of Europe. The recommended retail price for 4 rolls of Twipes and a plastic case is €4 and the recommended retail price for 4 refill rolls of Twipes are €2.50. This price is very competitive with other wet wipes on the market.

## The Vision

Twipes are halal certified, have passed asthma & allergen testing, dermatological testing and baby testing. Twipes are protected by 2 UK and 2 EU patents protecting the flushable technology. Twipes aim to expand in the future by adapting the flushable technology to new product lines, such as flushable feminine hygiene products or flushable baby nappies.

[Contact@twipes.eu](mailto:Contact@twipes.eu) | +44 2208 24 88888



