



GREEN INNOVATION AND
INVESTMENT FORUM

SMART GREEN INDUSTRY

ideas
meet
capital

7th and 8th of March 2017

An initiative of:



UMWELT
TECHNIK
BW

bwcon

In co-operation with:



InnoEnergy
Knowledge Innovation Community



Stiftung Energie & Klimaschutz
Baden-Württemberg

Introduction

Technology for the 21st Century

The economic system is currently transforming into a green economy—innovative technologies, process engineering as well as forward-looking green solutions are going to meet a growing demand in the next years. The Green Innovation and Investment Forum is the international event in Baden-Württemberg to support researchers, start-ups and entrepreneurs with smart business ideas for green technology and eco-innovation from across the continent.

Greetings

Dr.-Ing. Hannes Spieth, Umwelttechnik BW



Although the framework might change on the global stage—environmental technology and efficiency of resources remain among central issues from a local, a national or global perspective. Environmentally-compatible products and energy sources are—and will be—essential, as are techniques for conservation of raw materials and reduction of emissions. No aspect of industry is unaffected by these issues and no part of the world economy can remain isolated in this respect.

In future, the ability to participate successfully in the global economy will depend increasingly on the efficient implementation of environmental technologies and techniques for resource conservation. Consequently—and on a global scale—the market for green technologies will further establish itself as a vital part of the world economy. It is of the essence to bring innovative ideas quickly to fruition. Therefore, we support entrepreneurs in getting connected to partners, organizations and funding.

Dr. Jürgen Jähnert, bwcon



bwcon GmbH, a spin-off of Baden-Württemberg: Connected e.V., the leading high-tech cluster in Baden-Württemberg, intends to establish a platform and market place where innovative ideas in the fields of energy, green technology, and eco innovation can be discussed with relevant stakeholders from economy and finance. In order to positively contribute to the turnaround in energy policy, which Germany has decided for, and finally stimulate further innovation and entrepreneurship, bwcon GmbH with its service portfolio is well prepared to attend the further process of the best business ideas towards further commercial exploitation.

After two successful forums, I wish this third international GIIF edition and all participants a rewarding meeting, new inspiration and an overall sustainable success.

Keynote Speech

Jochen Wermuth, Wermuth Asset Management



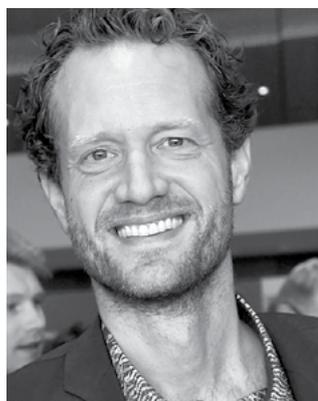
Jochen Wermuth is a member of the steering committee of the peer-to-peer investor networks "Europeans for Divest-Invest" and "100% Impact Network". He is also Founding Partner and Chief Investment Officer of Wermuth Asset Management GmbH (WAM) and the principal of the Wermuth family office. WAM is a BaFin regulated investment adviser, committed to alternative and sustainable investments with a positive impact on the environment and fighting corruption. Founded in 1999, it has launched and advised investment funds with peak assets in excess of one billion dollars. The current flagship fund, the Green Gateway Fund 2, invests five to thirty million euros of equity in German and other EU

firms in the resource efficiency and renewable energy space and helps them to grow internationally.

Previously, Jochen Wermuth was a Director at Deutsche Bank London and an EU-TACIS and World Bank-financed Head of the Economic Expert Group at the Russian Ministry of Finance. Born in 1969, he was educated at Brown and Oxford Universities in Mathematics and Economics. He speaks German, English, French and Russian.

Inspirational Speech

Bas van Abel, Fairphone



"I am passionate about changing the relationship between people and products. By opening up the design processes behind everyday things, I believe that people can re-engage and become active owners of their stuff. This was the inspiration on which I based the model for Fairphone, with which we are opening up systems on a step-by-step journey to making the world's first fairly designed and produced smartphone. As an active member of the international maker and digital fabrication community, I'm passionate about developing a wide variety of projects based on open design principles. As head of Waag Society's Open Design Lab I've initiated such projects as the

community fabrication laboratory Fablab Amsterdam and open source restaurant Instructables Restaurant. With a background in interaction design and a personal interest in electronics, I've worked on many projects both as a designer and technical engineer. I'm the co-editor of the book Open Design Now, which seeks to transform design into an open and shared discipline that creates a diversity of innovative products through a collaborative and world-spanning process."

closed session

7th MARCH 2017

Programme

GREEN TRAINING DAY (entrepreneurs only)

09:15 – 09:45

Registration and Coffee

09:45 – 10:00

WELCOME AND INTRODUCTION

Valentina Grillea (bwcon GmbH), Florian Sorg (Umwelttechnik BW)

10:00 – 10:15

PITCHING DOS AND DON'TS

Valentina Grillea (bwcon GmbH)

10:15 – 10:45

42 SLIDES FOR ENTREPRENEURS—THE FORGOTTEN BASICS

Joaquin Soucheiron (bwcon GmbH)

10:45 – 11:15

LIFE CYCLE THINKING: The Basis for Implementing Green Innovations

Prof. Dr.-Ing. Claus Lang-Koetz (Institute for Industrial Ecology (INEC), Pforzheim University)

11:15 – 11:30

Coffee Break

11:30 – 13:00

COACHING SESSIONS

A

Business model & financing

B

Protect your innovation

C

Green check your idea

D

Test pitching battle

13:00 – 14:00

Lunch Break

14:00 – 14:30

INERATEC—before and after experiencing GIIF 2015

Philipp Engelkamp (INERATEC GmbH)

14:30 – 16:00

COACHING SESSIONS

A

Business model & financing

B

Protect your innovation

C

Green check your idea

D

Test pitching battle

16:00 – 16:15

Coffee Break

16:15 – 17:45

COACHING SESSIONS

A

Business model & financing

B

Protect your innovation

C

Green check your idea

D

Test pitching battle

17:45 – 18:00

WRAP-UP

Open Working Session until 20:00

open session

8th MARCH 2017

Programme

PITCHING EVENT

11:00 – 11:30

Registration, Drink a Coffee with the Innovators

11:30 – 11:45

WELCOME TO THE PITCHING EVENT

Dr.-Ing. Hannes Spieth, Managing Director Umwelttechnik BW
Alexandra Rudl, Head of Innovation Programmes, bwcon GmbH (moderation)

11:45 – 12:15

KEYNOTE

Jochen Wermuth, Founding Partner & CIO, Wermuth Asset Management

12:15 – 12:25

INTERVIEW SESSION

Dr. Jens Ortgiese, Business Creation Officer, InnoEnergy GmbH
Ulrike Steinbrenner, Member of the Board, Foundation Energy and Climate Protection BW

12:25 – 13:30

Lunch Break—Meet the Innovators

13:30 – 14:00

INSPIRATIONAL SPEECH

Bas van Abel, Founder & CEO, Fairphone

14:00 – 15:15 EARLY STAGE I

- P01 SOLMOVE GmbH** (Smart Solar Road Surface)
Julien Schröder-Gianoncelli, Donald Müller-Judex
- P02 RIEGO** (RIEGO)
Antoine Skayem, Lea Karam
- P03 Clean Energy Global GmbH** (cleanenergypack)
Philipp Rosengarten, Peter Marchl
- P04 Vaireco** (Aerial PV Inspection Technology)
Dr. Wolfgang Herbst, Dr. Kenneth Varner
- P05 Hybrid-Airplane Technologies GmbH**
(h-aero™—New Concept of Human Flight)
Dr.-Ing. Csaba Singer, Harald Jurkschat

14:00 – 15:15 ADVANCED STAGE I

- P11 Heliac ApS** (Low Cost Concentrated Solar Power Based on Light Focussing Polymer Foils)
Henrik Pranov, Jakob Steen Jensen
- P12 Eco-Adapt** (Flex-Adapt)
Laurent Laparra
- P13 ICEE-PLAS** (Anti-Icing Coating on Self-Adhesive Polymer Foils)
Dr. Michael Haupt, Dr. Jakob Barz
- P14 ecoligo GmbH** (ecoligo)
Martin Baart, Markus Schwaninger
- P15 PPI—Principle Power, Inc.** (WindFloat)
Aaron Smith, João Metelo

15:15 – 16:00

Coffee Break—Meet the Innovators

16:00 – 17:15 EARLY STAGE II

- P06 Rotoby Sp. z o.o.** (Rotoby)
Roberto Ventura, Mauro Bardino
- P07 Paprfloor** (Paprfloor)
Sebastian Grimm
- P08 Alethia-Wood GmbH** (Glass Coating of Wood)
Daniel Hupel
- P09 CAALA GmbH** (Computer Aided Architectural Life-cycle Assessment)
Sebastian Dominguez, Philipp Hollberg
- P10 EnergySolaris** (AirSolaris COOL)
Erik Parsons, Ana Hajdău

16:00 – 17:15 ADVANCED STAGE II

- P16 Aurelia Turbines** (The Most Efficient Small Gas Turbines in the World)
Tony Hynes, Maija Mäkinen
- P17 Green City Solutions** (CityTree)
Dénes Honus
- P18 HySiLabs** (Hydrogen-Based and Emission-Free Liquid Fuel)
Patricia Mayer, Pierre-Emmanuel Casanova
- P19 Coboc GmbH & Co. KG** (Coboc e-Cycles)
Annalena Horsch, Pius Warken
- P20 Hydrogenious Technologies GmbH**
(Liquid Organic Hydrogen Carrier—LOHC)
Martin Schneider, Daniel Teichmann

17:15 – 17:45

ROUNDTABLE DISCUSSION “When does it match?”

Jochen Wermuth, Bas van Abel

From 18:00 onwards

BEST GREEN TECH AWARD CEREMONY

Reception dinner at “Restaurant Garbe” (on invitation only)



Julien Schröder-Gianoncelli
→ jgianoncelli@karlshochschule.de

Donald Müller-Judex
→ dmj@solmove.com

P 01

SOLMOVE GmbH
Smart Solar Road Surface



► **What is the problem?/Who has this problem?**

The ambitious goals of the Paris Climate Agreement urge us to harvest renewable energy even more than today. But where to install all the additional capacities? Moreover, the challenge also includes the transition towards e-mobility and smarter infrastructure. Some heavy duties for municipalities and governments.

► **Solution:** Areas like streets, railways, parking lots etc. cover a reasonable portion of our urban surfaces and are mostly exposed to sunshine. SOLMOVE is developing a special electricity-generating pavement that can be easily rolled out on existing grounds and be driven on without losing traction or breaking.

► **Advantages and benefits:** While one square metre of normal road costs 40 euros over its lifespan, SOLMOVE costs approx. 200 euros but generates 400 euros worth of electricity and other services (noise reduction, signals and control technology, anti-ice heating, etc.). Moreover, SOLMOVE can include inductive charging technology to ease the range problematic.

► **Unique selling point:** The flexibility of SOLMOVE is a great advantage. It makes it possible to produce it like turf rolls that only need to be laid out on the existing surfaces. A special glue sticks them to the ground and imitates the original topography. This makes the installation quicker and cheaper.

► **Competition/competitors:** There are only three known competitors: Solar Roadways (USA), Wattway (France) and SolaRoad (Netherlands). However, they all differ from SOLMOVE, as none is as easy to deploy and smart in operation as SOLMOVE.

**Technology and
unique features**

SOLMOVE is build up by single solar tiles that are being connected by a textile composite. This makes it flexible and adaptable to the ground.

**Envisioned product
and added value for
(potential) clients**

In a later stage, SOLMOVE can also be developed further to include public/private data connections or electricity grids.

**Target customers
and (potential) market
volume**

Local governments and highway operators are interested in this product enabling them to refinance the costly road construction by producing clean power. Companies are looking towards lower energy bills by making use of their parking lots. Germany alone offers 1,400 square kilometres of suitable surface for SOLMOVE.

More information

→ www.solmove.com



Antoine Skayem
→ toni.skayem@gmail.com

Lea Karam
→ lea.a.karam@hotmail.com

P 02

RIEGO
RIEGO



► **What is the problem?/Who has this problem?**

In 2013, a drought hit Lebanon, causing a devastating 60 percent reduction in the country's overall yield. So we decided to come up with a solution that enables the landowners to reduce the energy and water consumption while not affecting the agro yield and we noticed that the need is all over the world.

► **Solution:** RIEGO is able to dynamically control the irrigation schedule, reduce the human error involved in decision making and promise healthier crops by making sure all parameters are inline. Pricing strategy includes: product sales, yearly subscription, service upgrades, data & analytics.

► **Advantages and benefits:** RIEGO is an all in one solution that offers one platform capable of integrating all the sensors required in agriculture. It offers a highly optimized irrigation schedule based on a self-learning algorithm powered by a closed feedback loop system.

► **Unique selling point:** Self-learning algorithm unified platform allowing the user to control, monitor and conduct full mapping over his land. No connectivity infrastructure is required.

► **Competition/competitors:** Our competitors can be divided into three main verticals (that may overlap in certain instances): Monitoring and archiving dynamic, mapping and data analysis. We have no national competitor, one local and a lot globally.

**Technology and
unique features**

RIEGO is made from three parts, the middle part is connected to the valves and pump, where the main orders and communication is directed. The two other parts consisting of sensors communicate with the middle main part, where the information is processed, sent to the cloud and the decisions are taken.

**Envisioned product
and added value for
(potential) clients**

Our value proposition: "We promise to help you grow the healthiest crops with the lowest cost to yourself and the environment through a reliable product, smart data and our committed team". We empower the farmer, ameliorate the crops quality and save our environment.

**Target customers
and (potential) market
volume**

Our target market is farmers and investors in agriculture who want to monitor their land and communicate with the engineer who takes care of it without visiting their investment frequently. RIEGO can be used by governments and centres to help them with research papers and ameliorate farming practices.

More information

→ www.facebook.com/pg/RIEGO2016
→ www.linkedin.com/company/riego



Philipp Rosengarten
→ philipp@clean-energy-global.com

Peter Marchl
→ peter@clean-energy-global.com

P 03

Clean Energy Global GmbH
cleanenergypack



► **What is the problem?/Who has this problem?**

With the advent of decentralized production of regenerative energy from sun, wind and water, the roles of energy producer and consumer have become rapidly interchangeable. Although there is a global surplus of energy, distribution is an increasing challenge, as well as off-grid and mobile use.

► **Solution:** cleanenergypack (cep) provides a common solution for the challenges of sustainable energy and electromobility, by means of the sharing economy. The fast-swappable and scalable lightweight battery module will record all charging processes in a blockchain and provide billing data to the energy producers.

► **Advantages and benefits:** The cep system allows for scalable capacity-on-demand electrical storage systems in unlimited applications. It can provide full electric charge to an EV in less than two minutes by swapping the battery packs, but also carry home-made energy to boats, lodges, refugee camps, or disaster relief.

► **Unique selling point:**

- Compact 19" rack size (48,5 x 33 x 10 centimetre)
- Unit weight < 25 kilogram allows for manual handling
- Hot swapping for instant installation of capacity
- Combined contact, air, and electric temperature control (3 phases)
- 48 volt low-voltage of single cep allows for manual handling by any user

► **Competition/competitors:** Next to a large number of stationary competition, there is no direct mobile competition. However, in 2015 China Sinopec has ordered about 300 BAIC taxis with swappable battery systems—until 2022 for all 50,000 Peking taxis. Tesla does not pursue swappable battery packs any further since mid 2015.

**Technology and
unique features**

Each cleanenergypack contains five kilowatt hour of electrical energy in a compact sturdy casing. Due to its unique three-phase temperature control, each pack manages its temperature autonomously. New battery cell types can be easily adapted into the cep format. A blockchain ensures safe capturing of all charging data.

**Envisioned product
and added value for
(potential) clients**

cleanenergypack is an important building block for the energy transition as it bridges the stationary and mobile gap. cleanenergypack is a scalable, fast swappable lightweight battery module for mobile and stationary applications and has been protected by German utility patent.

**Target customers
and (potential) market
volume**

Target users of cep are all users of electric energy worldwide, customers will be manufacturers of cep and charging devices by acquisition of production licenses, or energy producers by buying charging protocol data for billing purposes. The global market for energy storage is estimated at 30 billion dollars in 2020.

More information

→ www.cleanenergypack.de



Dr. Wolfgang Herbst
→ wolfgang.herbst@vaireco.de

Dr. Kenneth Varner
→ ken.varner@vaireco.de

P 04

Vaireco Aerial PV Inspection Technology



► **What is the problem?/Who has this problem?**

UAVs, or drones, are quickly becoming the standard first level inspection method for energy assets and solar parks. The regular operation and maintenance (O&M) of such assets must be done as cost efficiently as possible. vaireco develops tools to fully automate aerial thermography inspections.

► **Solution:** Our automated inspection process covers the fields of

- Administrative work (flight logbook, flight permission handling, project management: automated reporting etc.)
- Data evaluation (automatic mapping of solar system, automated failure detection and allocation, etc.)

► **Advantages and benefits:** The solution reduces cost for O&M of solar parks significantly (easy to use, plug and play). It can be used with various drone technologies on the market.

► **Unique selling point:** Competitive solutions can be found on the market, but only for parts of the problem. Our approach is very broad and covers all aspects related to an efficient use of the thermography drone inspection flights. Part of the solution can also be used for other (non PV) inspection services.

► **Competition/competitors:**

- Electroluminescence: more accurate, but significantly more expensive
- Mobile IV-Tester: considerably slower
- Monitoring: only working until a certain accuracy (detection) limit, high costs

Technology and unique features

The solution uses a smart combination of modern software applications, like mobile phone app, data mining, pattern recognition algorithms etc.

Envisioned product and added value for (potential) clients

Software and hardware (camera, drone) for efficient use.

Target customers and (potential) market volume

- Solar system owners, investors, insurance companies (they all have an interest in a higher output of the solar system)
- O&M teams

More information

→ www.vaireco.de



Dr.-Ing. Csaba Singer
→ csaba.singer@hybrid-airplane.com

Harald Jurkschat
→ harald.jurkschat@hybrid-airplane.com

Hybrid-Airplane Technologies GmbH h-aero™—New Concept of Human Flight



► **What is the problem?/Who has this problem?**

Traditional UAS (Unmanned Aerial Systems) are strongly limited in flight time, pose security problems and are not scalable in an economic way. These shortcomings concern all users of UAS. The many industries using UAS as airborne carrier vehicles for manifold missions are craving for a new product.

► **Solution:** A new concept of flying: long, safe and eco-friendly flight with renewable energies. h-aero™ is enabling myriads of missions helping to achieve their specific airborne objectives. The solution is the aerodynamic combination of the flight concepts of airplanes, copters and balloons.

► **Advantages and benefits:** h-aero™ flies longer, safer, higher, cheaper and is completely eco-friendly. Furthermore, many new type missions can be executed (over crowds, indoors, 24/7 flight operation) without damaging or disturbing the environment. h-aero™ uniquely provides perspectives of use never seen before.

► **Unique selling point:** Duration of flight (perspective: 24/7), safety, visibility, payload, eco-friendly

► **Competition/competitors:** Traditional UAVs, high altitude platforms, advertising pillar

Technology and unique features

Our UAS combines the three approved flight concepts of airplanes, helicopters and balloons. It allows flight durations up to many hours, perspective 24/7, via solar cells. It comes, furthermore, with built-in parachute-like safety features and needs no infrastructure for take-off and landing.

Envisioned product and added value for (potential) clients

A novel aircraft synergistically combining the advantages of airplanes, helicopters and balloons with unique and new possibilities to use our third dimension and that is able to substitute satellites and to avoid disadvantageous astro-garbage for next generations.

Target customers and (potential) market volume

Customers seeking an innovative airborne carrier vehicle uniquely enabling their missions in exploration, observation and communication, e.g. advertising industry, exploration sector, mobile communication network providers and many more. The market volume in 2020 is expected to be 127 billion dollars.

More information

→ en.wikipedia.org/wiki/Hybrid-Airplane_Technology_H-Aero

→ www.facebook.com/hybridairplane/

→ ui.adsabs.harvard.edu/#abs/2012LPICo1679.4059S

→ aviationweek.com/commercial-aviation/week-technology-june-6-10-2016

→ www.hybrid-airplane.com

EARLY
STAGE II



Roberto Ventura
→ ventura@rotoby.com

Mauro Bardino
→ bardino@rotoby.com

P 06

Rotoby Sp. z o.o. Rotoby



► **What is the problem?/Who has this problem?**

At present, blades are made of glass-reinforced plastic or of carbon fibre with an aluminium core. Blades available commercially cause a number of problems and obstacles, thus generating additional costs.

► **Solution:** ROTOBY's idea derives from innovation trends in production and in materials, which ultimately can solve all the problems related to composite materials. Materials used by ROTOBY help to eliminate certain critical flaws found in the final products.

► **Advantages and benefits:** Our commitment to cost efficiency, however, does not supplant our guiding principle that the fundamental aspect of our strategy is customer satisfaction: we are thoroughly committed to becoming a market leader with respect to cost control as well as supplying high quality.

► **Unique selling point:** Assuming varying price sensitivity of its clients, ROTOBY may develop alternative pricing strategies to optimize sales revenue, based on the ability to ask specifically targeted questions to define customer preferences and offer more optimized pricing commensurate with the client's needs.

► **Competition/competitors:** ROTOBY is now entering a market that has already become very competitive. A number of global industry leaders, already operating in international markets, manufacture and distribute blades for aero generators, with the Danish company LM Wind Power leading the pack with manufacturing facilities all over the world.

Technology and unique features

Our simplified process has resulted in a product which is superior to others in all aspects. We are visionaries who, by streamlining the production process, aim to significantly lower the price of wind power generation to make it even more affordable all over the world, with easy access for us all.

Envisioned product and added value for (potential) clients

Rotoby's Blades and Small VAWT are:
LIGHTER up to 20 percent
STRONGER is molded as one piece
INEXPENSIVE very short production cycle 100 percent
RECYCLABLE our blades are fully recyclable
MORE EFFICIENT in terms of the amount of generated electricity.

Target customers and (potential) market volume

The last few years have witnessed an evolution of small wind power plants and a sizeable increase of their market share. Global Data for 2020 anticipates the turbine market to explode, reaching a 3.7 gigawatt capacity, or a 30 percent increase.

More information

→ www.rotoby.com



Sebastian Grimm
→ sebastian.grimm@paprfloor.com

P 07

Paprfloor
Paprfloor



► **What is the problem?/Who has this problem?**

The idea behind paprfloor is quite simple. We looked for an alternative for flooring at fairs, that produce a lot of waste and costs. Normal flooring on fairs consist mainly of polypropylene which is made from oil and produces toxic waste. And nearly all of the flooring at fairs will not be reused.

► **Solution:** We found corrugated paper as an alternative and redesigned the paper a little bit and founded paprfloor. In 2014 we installed that paprfloor for the first time at around 200 square metres with great results. To establish paprfloor we are now looking for investors and/or licence partners.

► **Advantages and benefits:** Paprfloor is an ideal alternative for flooring, because it is

- Ecological
- Non-allergic
- Individual
- Easy to use.

► **Unique selling point:** Paprfloor is the only flooring that is non-allergic, affordable, ecological, completely reusable and that can be individualized. For fairs we will install a closed circle of installation, usage and recycling that saves not only money but also reduces waste.

► **Competition/competitors:** Existing flooring and wood, other alternative floorings like tiles.

**Technology and
unique features**

Paprfloor consists of a special paper mixture.

**Envisioned product
and added value for
(potential) clients**

Paprfloor is completely individualizable that gives complete new choices for flooring, eg. logo prints, messages on the floor, special colours.

**Target customers
and (potential) market
volume**

Any company that uses fairs and events, in 2015 exhibitors on German fairs used 6,257,868 square metres for booths and exhibitions. With a market share of 5 percent and a price of 15 euros per square metre there is a potential of around 5 million euros revenue/year in Germany only.

More information

→ www.paprfloor.com



Daniel Hupel
→ alethia-wood@uni-greifswald.de

Alethia-Wood GmbH Glass Coating of Wood



- ▶ **What is the problem?/Who has this problem?**
Problems in woodworking industry: Durability of wood products (moisture > mold formation and swelling, UV-radiation > graying, regular redrawing, easy flammability).
- ▶ **Solution:** The new technology is an innovative, sustainable and ecological alternative to existing product solutions in the coating and finishing of porous surfaces, in particular natural fibres. Thus, it is now possible to transfer the properties of glass to wood, concrete, sandstone and many other materials.
- ▶ **Advantages and benefits:** Alethia-Wood is able to revolutionize the market for wood coatings and to set new standards in the points durability, hydrophobicity, flame and UV protection. Alethia-Wood is in comparison to many previous wood coatings for man and nature harmless, replacing petroleum-based products.
- ▶ **Unique selling point:** Flame- and UV protection, durability and flexibility of thin glass.
- ▶ **Competition/competitors:** The Alethia-Wood-glass coatings allow the wood processing industry, offering the customer durable, weather-resistant, flame-retardant and harmless wood products. For the first time all protective properties are in one coating. Conventional solutions fail at least in one point of protection.

Technology and unique features

Glass gel production in the wood surface with subsequent glass spraying process.

Envisioned product and added value for (potential) clients

Technology transfer of glass coating.

Target customers and (potential) market volume

Wood and natural fibre processing industry; market volume of for example wooden facades: 3 million square metre (in Germany).

More information

→ www.facebook.com/alethiawood



Sebastian Dominguez
→ s.dominguez@caala.de

Philipp Hollberg
→ p.hollberg@caala.de

CAALA GmbH Computer Aided Architectural Life-cycle Assessment



► **What is the problem?/Who has this problem?**

Suboptimal building designs with avoidable costs and emissions. Architects lack tools which support them in assessing the life-cycle building performance in the early design stage from a cost (budget is regularly exceeded) and environmental perspective (potential minimal CO₂-emissions are exceeded).

► **Solution:** CAALA integrates life-cycle assessment (LCA: calculation of operational energy demand and embodied energy) and life-cycle cost analysis (LCC: investment and operating costs). Our tool is designed as SaaS and works as a plug-in within the architects' CAD software.

► **Advantages and benefits:** The software enables optimizing building-designs in a time-efficient (10x faster) and effortless manner and thus increases the project's economic value (-30 percent LCC), while preserving the environment (-50 percent CO₂-emissions). CAALA delivers the best building design in one-tenth of the time.

► **Unique selling point:** Delivering a complete energy demand calculation with the assessment of embodied-energy as well as investment and operational costs in the early design-phase is unique. For the first time ever, automatically comparing the performance of millions of variants in minutes becomes a reality.

► **Competition/competitors:** Worldwide, we have three main competitors:

- Sefaira: offers energy demand calculation, but no LCA and LCC; focused on Anglo-Saxon market.
- Tally: calculates embodied energy, but not operational energy demand and LCC.
- DesignBuilder: calculates operational energy demand, but not embodied energy and is slow.

Technology and unique features

After exporting geometric building data from commercial CAD software to our server, the information is used to run our calculations. Our speed and parametric data input enables us to be the first tool which compares millions of different building variants over the entire life-cycle.

Envisioned product and added value for (potential) clients

CAALA empowers architects in the early planning phase to design more sustainable buildings. When assessing the energetic, financial and environmental performance of the building designs, CAALA takes into account regulations (EnEV), subsidies (KfW) and building certificates (DGNB).

Target customers and (potential) market volume

In Germany, there are ~75,000 architecture and energy consulting offices (~330,000 employees) that would benefit from our software. The market for architecture-related software in Germany relevant to CAALA has an estimated size of 340 million euros (two-digit growth rate).

More information

→ www.caala.de
→ www.linkedin.com/company/caala and → twitter.com/hashtag/caala



Erik Parsons
→ erik@energysolaris.com

Ana Hajdau
→ ana.hajdau@energysolaris.com

EnergySolaris AirSolaris COOL



► **What is the problem?/Who has this problem?**

Globally over 50 percent of all energy goes for heating and cooling (IEA). Governments and large corporations must confront: huge cost of energy; carbon emissions and resulting climate change due to inefficient and fossil-fuel driven heating and cooling; challenges on maintaining indoor air quality.

► **Solution:** EnergySolaris provides ultra-efficient solar air technology that enables energy savings – on heating, ventilation and air conditioning of buildings. Its AirSolaris PLUS solar air heating collector was ISO tested at Fraunhofer ISE and outperforms the solar air market leaders.

► **Advantages and benefits:** AirSolaris COOL will be the first commercial application of solar air for not only heating and ventilation but also cooling. And it is expected to use less electricity than existing HVAC systems. AirSolaris technology is four times more efficient at converting solar energy than solar PV.

► **Unique selling point:** AirSolaris COOL—the world's first year-round energy-saving climate solution driven by solar air technology, featuring:

- Ultra-efficient heating and ventilation, thanks to the world's most efficient solar air heating design
- Ultra-efficient cooling with fresh air for humid climates

► **Competition/competitors:** Direct competition in solar air segment of solar thermal market: Grammer Solar GmbH, SolarVenti Ltd. and Scanheat A/S. Indirect competition on alternative technologies: heat pump; solar water driven heating and cooling; heat recovery ventilation; conventional heating and air conditioning powered by renewable energy.

Technology and unique features

The unique AirSolaris “thermo-optic” design has been specially developed to address the challenges of heating air. Additionally, the double-glazing and high-performance insulation makes it suitable for high temperature applications and use in cold climates.

Envisioned product and added value for (potential) clients

The first application of solar air technology for cooling will help launch the solar air category to the mainstream. Added value: much lower energy bills; smaller carbon footprint and eco-green image; relatively easy way to comply with aggressive new energy efficiency building regulations (nZEB).

Target customers and (potential) market volume

The company sees its beachhead market as being large enterprises that are seeking to: reduce their energy costs and carbon footprint; work with start-ups to drive innovation. The energy efficient building technology market is set to double between 2014 and 2023 to 623 billion dollars. HVAC is the fastest growing part.

More information

→ www.energysolaris.com



Henrik Pranov
→ hjp@heliac.dk

Jakob Steen Jensen
→ jsj@heliac.dk

P 11

Heliac ApS—Low Cost Concentrated Solar Power Based on Light Focussing Polymer Foils



► **What is the problem?/Who has this problem?**

Worldwide, the main barrier for the transition of energy production from fossil power to renewable is mainly the cost, energy storage and availability during the day and season. Renewable energy, such as solar power, is clean, but currently too expensive in installation and maintenance and storage is required to cover periods when energy is needed, but production is low.

► **Solution:** A technology that allows to produce light-concentrating optics at low cost and with high production throughput. Our concept is based on micro-sized Fresnel structures integrated into a light-weighted and flat polymer foil. Thereby, we can make concentrated solar power (CSP) competitive to fossil fuel even at solar radiation as low as 800 kilowatt hours per square metre (Denmark).

► **Advantages and benefits:** Significant cost reduction compared to conventional CSP, which will ensure cost-competitiveness to fossil fuels and tax-free biomass heating. Advantages: Efficient size scaling, less wind sensitivity, low visual disturbance, low weight, simplified installation and easier maintenance.

► **Unique selling point:** With our technology, even in countries with low solar radiation such as Denmark or Germany, solar thermal power will be cost-competitive to both fossil fuels and tax-free biomass heating, even with low or no governmental subsidy. From a prototype CSP plant, we estimated a cost for the thermal energy of 200 euros per kilowatt peak (in Denmark).

► **Competition/competitors:** Conventional CSP systems. GlassPoint: exchanging expensive glass-based mirrors with cheaper aluminum mirrors (yet more expensive than our foil based alternative).

Technology and unique features

The solar energy is concentrated by our light-focusing foil and directed towards a simple stainless steel receiver which transfers the energy into a closed water-filled system. The polymer foil is fabricated by extrusion coating with a throughput of over 300 metres per minute. Our prototype proved feasibility of the concept with a current efficiency of over 60 percent.

Envisioned product and added value for (potential) clients

Our CSP plant will consist of several hundred 12 kilowatt-units (efficiency of over 60 percent), depending on the desired power output. Each unit will be about 3.6 metre high and consist of a dual-axis tracker, stainless steel receiver, aluminum frame, glass support and our light-concentrating foil. The optical active area is about 6 x 2.8 square metre.

Target customers and (potential) market volume

Initially, we will focus on the solar district heating in Denmark and Germany with target customers being energy utilities such as Vattenfall, E.On, RWE. In Germany alone, there is a potential market volume of about 200 gigawatt peak due to the reduction in thermal capacity from nuclear and coal fired power plants.

More information

→ www.heliac.dk



Laurent Laparra
→ laurent.laparra@eco-adapt.com

Eco-Adapt Flex-Adapt



► **What is the problem?/Who has this problem?**

Flex-Adapt addresses two major problems of the energy sector: (i) energy storage, crucial for the transition to renewable energies and (ii) optimizing thermal comfort of building users.

► **Solution:** Flex-Adapt is a brain for buildings that dynamically controls the consumption of heating, cooling and ventilation. By analysing the response of the building in real time, the system continuously improves thermal comfort for users and also allows to participate in demand-response events.

► **Advantages and benefits:** Improved thermal comfort translates in higher productivity (office, university) or better client experience (stores, hotels) and, therefore, value. Demand response participation and other flexibility mechanisms can cut the energy bill by up to 20 percent.

► **Unique selling point:** The business model is to offer the solution for free in exchange of a share of the savings. The revenue generated allows a payback time in less than a year.

► **Competition/competitors:** Siemens, Schneider Electric, ABB

**Technology and
unique features**

Two unique features: (i) algorithm to accurately model the thermal response of any building and (ii) algorithms to predict temperature and humidity setpoints that maximize thermal comfort.

**Envisioned product
and added value for
(potential) clients**

The offering is based on a hardware and software solution that is packaged as a service. Target customers are managers of commercial buildings (offices, universities stores). They will benefit from a cut on their bill and improved comfort.

**Target customers
and (potential) market
volume**

Our primary target audience are utilities (which will integrate the solution as part of their offering) and maintenance companies. They will resell the solution to building managers. The addressed market is 50 billion euros worldwide and Flex-Adapt creates a value of 5-10 billion euros.

More information

→ www.eco-adapt.com



Dr. Michael Haupt
→ michael.haupt@igb.fraunhofer.de

Dr. Jakob Barz
→ jakob.barz@igb.fraunhofer.de

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ICEE-PLAS Anti-Icing Coating on Self-Adhesive Polymer Foils



► **What is the problem?/Who has this problem?**

Technical systems are affected in their function by snow and ice formation, e.g. in aviation, on rotor blades of wind turbines, on radiation radomes or outdoor sport equipment. We have developed a solution based on a coating technology on flexible polymer foils, which prevent the surface from ice.

► **Solution:** Our solution is the coating of the surface by means of self-adhesive anti-icing polymer foils. They can be easily applied on a variety of outdoor surfaces, e.g. radiation domes, truck tarpaulins, outdoor sport equipment like touring skis, tents, textiles, architectural elements and even a lot more.

► **Advantages and benefits:** With the self-adhesive anti-icing polymer foils the costs of the de-icing are strongly reduced. Additionally, the safety of the products are increased by the prevention of ice on the surfaces.

► **Unique selling point:** We have a patented unique plasma technology to produce the anti-icing polymer foils for wind turbines, outdoor sport equipment and for many other applications.

► **Competition/competitors:** The using of anti-icing polymer foils guarantees an unrivalled market position. We do not have any competitors with other passive de-icing technologies on self-adhesive flexible polymer foils.

**Technology and
unique features**

The layers do not provide any crystallization nuclei for the water to freeze on the surface and it remains in a "supercooled" state. Even when the water freezes, our anti-ice equipment reduces the adhesion of ice by more than 90 percent compared to the uncoated surface.

**Envisioned product
and added value for
(potential) clients**

The customers (operators and manufacturers of wind turbines) can increase the efficiency of the wind turbine up to 10 percent by saving energy, normally needed for de-icing of the surfaces.

**Target customers
and (potential) market
volume**

- Manufactures of wind turbines, operators of wind turbines: 10 to 100 wind turbines per year in Germany
- Telecommunication (coating of radiation domes): approx. 5,000 to 10,000 radiation domes per year in Germany.

More information

→ www.innovationsforum.fraunhofer.de/2015/12/anti-eis-beschichtungen-schuetzen-mensch-und-maschine



Martin Baart
→ martin.baart@ecoligo.com

Markus Schwaninger
→ markus.schwaninger@ecoligo.com

ecoligo GmbH
ecoligo



► **What is the problem?/Who has this problem?**

Power is extremely costly in developing countries, despite increasing unreliability as demand grows. This affects the profits of commercial and industrial (C&I) businesses. Additionally, private investors' demand for sustainable and profitable investment options is higher than the supply.

► **Solution:** ecoligo solves these problems by providing low-cost solar power to C&I companies in developing countries and financing the solar power plants through its crowdfunding platform. The company provides its clients worry-free solar-as-a-service and its crowdfunders returns of up to 8 percent.

► **Advantages and benefits:** ecoligo offers a reduced electricity rate, made possible through low costs of capital: solar market competitors only have access to financing at around 20 percent compared to the 8 percent at which ecoligo acquires it. Private investors are offered sustainable and profitable investment opportunities.

► **Unique selling point:** Both of ecoligo's founders have experience with the local market, having worked there for more than seven years each. Consequently, they have a network of partners that gives them access to the market, while other crowdfunding platforms find it hard to acquire well developed projects.

► **Competition/competitors:** ecoligo's main direct competitors are the solar utilities Redavia and SolarAfrica. The indirect competitors include all alternative sources of power generation. The key competitors promoting renewable energy projects to crowdfunders are Bettervest, Econeers, LeihDeinerUmweltGeld and TRINE.

Technology and unique features

ecoligo's crowdfunding platform is already launched. Currently, the company develops a software tool to automatize the feasibility assessment and due diligence of projects. The platform also gives insights into project performance and investors a transparent and tangible view of their investments.

Envisioned product and added value for (potential) clients

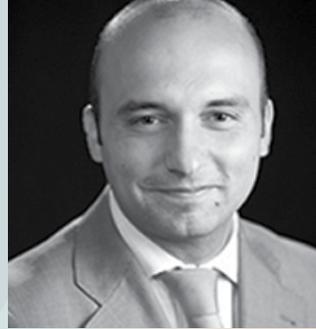
ecoligo offers an all-included solar service to its energy off-takers, at an electricity rate up to 42 percent lower than their current electricity price. To private investors, ecoligo offers an investment opportunity that is sustainable, tangible, transparent and offers 8 percent interest.

Target customers and (potential) market volume

In the energy off-taker market, ecoligo's target customers are C&I companies in Ghana, Kenya and Tanzania. The total addressable market (TAM) is 3.7 billion euros per year. The target crowdfunders are people with an investment budget who value the environment. The TAM is 0.8 billion euros per year.

More information

→ www.ecoligo.com



Aaron Smith
→ asmith@principlepowerinc.com

João Metelo
→ jmetelo@principlepowerinc.com

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PPI—Principle Power, Inc.
WindFloat



► **What is the problem?/Who has this problem?**

The offshore wind market is currently highly concentrated in Northern Europe and China, with expansion limited by technical and economic challenges in other markets related to water depth (existing technology is only good for sites less than 40 metres) and lack of specialized infrastructure.

► **Solution:** Floating platforms provide access to deep water sites by decoupling foundations from the seabed. The WindFloat is fully proven (17 gigawatt hours) and patented. The technology is being prepared for deployments in Portugal (25 megawatt) and France (24 megawatt) to prove commercial potential.

► **Advantages and benefits:** The WindFloat dramatically reduces costs and risks compared to existing offshore wind technologies. It can be fully assembled at port and towed to the wind farm using standard tugs. This eliminates the need for expensive crane vessels (~200 to 350 euros per day) to perform construction in the open ocean.

► **Unique selling point:** The WindFloat enables a paradigm shift for the offshore wind industry, by opening new markets that are not accessible today (US, JP, TW, KR) with 100s of gigawatts of potential and by changing dramatically how installation and O&M is performed.

► **Competition/competitors:** There are no incumbents in floating wind; Four other concepts have deployed full-scale prototypes. The Windfloat, with its unique features being fully patented, is the most competitive, because it is

- the most economic,
- the lowest risk (simple logistics) and
- the most widely applicable (40 metres and more depth).

Technology and unique features

The WindFloat technology is an efficient, semi-submersible platform that comprises three stabilizing columns, connected by a truss structure. A standard, commercial offshore wind turbine is mounted on one of the columns. Turbines are linked by subsea cables to deliver power directly to load centres.

Envisioned product and added value for (potential) clients

In addition to enabling new markets, the WindFloat is much cheaper to fabricate, install and operate than other floating systems under development and is capable of producing energy at 60 to 90 euros per megawatt hour in full scale projects. Principle Power sells product licenses, engineering services, and O&M services.

Target customers and (potential) market volume

In 2016, the offshore wind market installed 3 gigawatt and attracted ~30 billion euros in capital. Growth is expected to reach 190 gigawatt (2030) and 400 gigawatt (2045), but deep water solutions are required to realize potential. Our first mover advantages and IP portfolio positions us to grow to 100 million euros in revenue by 2026.

More information

→ www.principlepowerinc.com



Tony Hynes
→ tony.hynes@areliaturbines.com

Maija Mäkinen
→ majja.makinen@areliaturbines.com

Aurelia Turbines—The Most Efficient Small Gas Turbines in the World



► **What is the problem?/Who has this problem?**

Industrial customers, especially small scale process industry, which represents approx 20 percent of the total power generation in Europe have no efficient distributed energy solution suited to their size and demand which will allow them to control costs and give security

► **Solution:** Aurelia has developed a 400 kilowatt turbine which operates at high efficiency with low emissions and operating costs and delivers both power and heat for electrical demand as well as steam, heating or chilling for industrial & commercial needs.

► **Advantages and benefits:**

- High efficiency
- Good partial load possibilities
- Cogeneration possibilities & fuel acceptance

► **Unique selling point:** There is hardly any other technology available for small scale industrial heat cogeneration.

► **Competition/competitors:** Biggest one; the customer decides not to do anything. In future microturbine providers, gas engines.

Technology and unique features

We are utilising the so called IRG2-process in our turbine. It is two-stage, two-shaft, intercooled and recuperated radial gas turbine with generators on both shafts. The technology is being based on over 30 years of R&D at Lappeenranta University of Technology, Finland.

Envisioned product and added value for (potential) clients

A 400 gas turbine. RoI's of end customers typically below three years.

Target customers and (potential) market volume

Small scale process industry. Total market exceeds 30 billion euros annually.

More information

- www.aureliaturbines.com
- www.linkedin.com/company/aurelia-turbines
- twitter.com/AureliaTurbines



Dénes Honus
→ d.honus@mygcs.de

Green City Solutions CityTree



GREEN CITY
SOLUTIONS

► **What is the problem?/Who has this problem?**

Every day 90 percent of cities' inhabitants breathe polluted air which becomes the cause of every seventh death worldwide. The major components of air pollution are nitrogen oxides, ozone and especially fine dust (PM), of which 10 microgram per cubic metre of air shorten the life span by half a year.

► **Solution:** We combine IoT-technology with special, vertical installed moss cultures and vascular plants that eat particulate matter (PM), nitrogen dioxide and ozone—offsetting 240 tons of CO₂-equivalents per year in total. The “CityTree” has the same effect as 275 urban trees but requires 99 percent less space.

► **Advantages and benefits:** Every CityTree binds annually 150 kilogram CO₂ through the growing process of the plants. Within one day, the plant filter could reduce up to 25 percent fine dust and 25 percent NO_x. Thus, the air is up to 30 percent cleaner, 17 degrees cooler and humidified after passing through.

► **Unique selling point:** The CityTree allows to overcome the obstacles of implementing air pollution eating moss cultures in urban environments by using IoT-technology. It is adaptable to urban planning situations, reduces air pollution independently of its source and its impact is completely traceable.

► **Competition/competitors:** Main competitors offer green rooftops or facades on buildings which either clean air very little due to extensive greening, weight limitations and its location above street level, or are usually not applicable in city centre hot spot areas due to the city's ownership structure.

Technology and unique features

1,682 single slots for plants are individually controlled and supplied with nutrition, water and salt. The cover plants decelerate the air, which increases sedimentation and absorption. Thanks to solar panels and rain water retention systems, the unit requires only few hours of maintenance per year.

Envisioned product and added value for (potential) clients

In addition to air cleaning, climate change mitigation and to ensure its profitability, the implementation of visual and digital information is possible. By using technologies like WiFi, iBeacon, NFC and digital screens or logos, the CityTrees can also transmit digital and visual information.

Target customers and (potential) market volume

Our customers are companies looking for a sustainable solution for advertising, campaigns and mobile commerce and cities for air pollution control. The global markets for air purification (78 billion dollars), OOH-media (45.3 billion dollars) and smart city infrastructure (20 billion dollars) are available for our solution.

More information

- getacitytree.com
- www.facebook.com/mygc
- twitter.com/mycitytree
- www.instagram.com/green_city_solutions



Patricia Mayer
→ pmayer@hysilabs.com

Pierre-Emmanuel Casanova
→ pecasanova@hysilabs.com

HySiLabs Hydrogen-Based and Emission-Free Liquid Fuel



► **What is the problem?/Who has this problem?**

We are highly dependent on fossil fuels, which release harmful emissions. A solution is energy from H₂, which is emission-free. However, H₂ as a gas is difficult to transport and to store. HySiLabs proposes an emission-free liquid fuel that produces H₂ on-demand with no energy input required.

► **Solution:** HySiLabs proposes a H₂-based liquid fuel that is emission-free, stable, non-toxic, non-explosive, and easy to handle. The know-how of HySiLabs involves the design of a Hydrogen Generation Unit (HGU), where on-demand H₂ production is controlled and the H₂ is instantly consumed, avoiding gas storage.

► **Advantages and benefits:** Our technology maintains the advantages of an energy-dense H₂ vector without any storage or transportation issues. H₂ is generated on-demand from a stable liquid fuel, enabling a full logistic supply chain and a utilization similar to that of existing liquid fuels.

► **Unique selling point:** HySiLabs offers an emission-free liquid fuel with simple handling logistics (transportation and storage), quick and easy utilization due to well-known liquid refueling and no energy input required to produce hydrogen.

► **Competition/competitors:** H₂ can be provided via pressurized tanks, requiring heavy infrastructure and maintenance. It can be produced on-site via electrolyzers, requiring an energy input. HySiLabs proposes the only liquid H₂ source capable of producing H₂ on-demand, with no energy input and without generating emissions.

Technology and unique features

The HGU produces H₂ on-demand to be consumed immediately, avoiding the need to store the explosive gas. When there is a H₂ need, the HGU produces the exact quantity to be instantly consumed. The HGU operates autonomously, meaning it is not connected to any external sources in order to operate.

Envisioned product and added value for (potential) clients

HySiLabs offers a B2B solution, and envisions an HGU for on-site hydrogen generation at hydrogen refueling stations. Our main added value is the transportation and storage of a stable liquid rather than an explosive high-pressure gas, allowing for access to otherwise restricted areas.

Target customers and (potential) market volume

Our target market is hydrogen refueling stations, predicted in Europe at 5,100 in 2030, corresponding to 6,500 tons per day of H₂. 1,000 stations are expected in Germany alone. In the short term, HySiLabs envisions other niche markets such as forklifts and backup power.

More information

→ www.hysilabs.com



Annalena Horsch
→ annalena.horsch@coboc.biz

Pius Warken
→ pius.warken@coboc.biz

Coboc GmbH & Co. KG Coboc e-Cycles



► **What is the problem?/Who has this problem?**

The question of how to enhance mobility while at the same time reducing congestion, accidents and pollution is a common challenge to all major cities in Europe (European Commission, 2015). Basically, everybody living and commuting in cities faces this problem.

► **Solution:** Our e-bikes are puristic, lightweight and made in Germany. Our in-house developed drive system analyzes the rider's behaviour and adapts the electrical support automatically. Coboc stands for the perfect combination of product and design.

► **Advantages and benefits:** Two ways of looking at Coboc e-bikes: You are either faster using the same power or you are less exhausted requiring the same time. One thing is sure though: Commuting is way more fun! Thanks to appealing high-quality products more and more people are willing to ride e-bikes instead of taking cars.

► **Unique selling point:** The feeling of riding a Coboc e-bike is unique: Due to our intelligent drive system and light weight, our e-bikes convey the feeling of riding a regular bike. Just better and faster. The clean design is only possible because we integrated the battery as well as all technical components in the frame.

► **Competition/competitors:** Stromer, Specialized, Grace, Freygeist

Technology and unique features

The bike is controlled by only one button (on/off). The rest is done automatically. The bike measures different parameters via a torque sensor in the bottom bracket and engages the motor according to your riding behaviour. Our e-bikes come with an app and are connected to the cloud.

Envisioned product and added value for (potential) clients

Adding more and more features to our Coboc app like theft protection and wireless software updates, discussing cloud-based service options with SAP SE and developing innovative accessories like a new charging station for our bikes further enhances the value for our customers.

Target customers and (potential) market volume

The European e-bike market grew by 20 percent annually over the last 5 years and continues to grow to a volume of 34 billion dollars in 2035. The global e-bike market increases to 40.3 million units sold in 2023. Our customers are primarily male working professionals in their 30s to 60s and live in urban areas.

More information

- www.coboc.biz
- www.facebook.com/COBOCeCycles
- www.issuu.com/coboc/docs/2017_coboc_portfolio



Martin Schneider
→ martin.schneider@hydrogenious.net

Daniel Teichmann
→ daniel.teichmann@hydrogenious.net

Hydrogenious Technologies GmbH Liquid Organic Hydrogen Carrier (LOHC)



► What is the problem?/Who has this problem?

Hydrogen storage today needs very high pressures (up to 700 bar) or very low temperatures (-253°C), which imposes challenges on hydrogen distribution companies and hinders innovative hydrogen areas such as mobility and energy storage. Hydrogen handling encompasses significant risks due to its explosiveness.

► **Solution:** Liquid Organic Hydrogen Carrier (LOHC) bind the hydrogen to a carrier oil, which can be stored and handled at ambient conditions. Hydrogenious Technologies acts as an infrastructure provider and designs, develops, builds and sells the systems necessary for the storage (StorageBOX) and release (ReleaseBOX) of the hydrogen to and from the oil.

► **Advantages and benefits:** The LOHC used by Hydrogenious is a non-toxic, hardly flammable and non-explosive oil, making hydrogen transport significantly more efficient, safer and easier. Transport capacities per truck are increased by a factor of five compared to 250 bar compressed transport and total cost to the customer therewith reduced by up to 50 percent.

► **Unique selling point:** Globally, Hydrogenious is the only company offering containerized LOHC systems. With its patent (pending) protected technology and product portfolio, Hydrogenious offers a unique alternative to existing storage technologies, which has the potential to disrupt the existing merchant hydrogen and also significantly boost hydrogen mobility.

► **Competition/competitors:** The core competing technologies are compressed gaseous hydrogen (CGH₂ at up to 500 bar) and liquid hydrogen (LH₂ at -253°C). CGH₂ has limited transport capacities of typically around 250 kilograms per 40-ton-truck, whilst liquefaction of hydrogen is very complex, cost intensive and not suitable for long term storage.

Technology and unique features

The LOHC technology chemically binds hydrogen by means of reversible catalytic hydrogenation and dehydrogenation. Both processes are regulated by pressure and temperature in Hydrogenious' systems. The carrier has a storage capacity comparable to over 2,000 bar pressure and can be reused for up to 1,000 cycles.

Envisioned product and added value for (potential) clients

Hydrogenious offers plug-and-play hydrogenation (StorageBOX) and dehydrogenation (ReleaseBOX) systems for industrial hydrogen supply. Our products provide the infrastructure for easy and safe hydrogen distribution. Our customers profit from lower cost transport, increased safety and reduced handling complexity.

Target customers and (potential) market volume

Our initial focus lies on the infrastructure for merchant hydrogen, a global 100 billion dollars per year market, predicted to grow at 5 percent CAGR until 2021. Our customers are gas distribution companies such as Linde or Air Liquide. We have closed the first delivery contract for our systems with a US-based hydrogen company in April 2016.

More information

→ www.hydrogenious.net

INITIATORS & CO-OPERATION PARTNERS

An initiative of



- ▶ **bwcon GmbH**—Technology and Innovation for Baden-Württemberg was founded in 2014 as a spin-off of the Baden-Württemberg: Connected e.V. network, one of the most successful European technology networks. bwcon GmbH offers start-ups, entrepreneurs and SMEs continuous support in their innovation process and is involved in many regional and European activities and projects. bwcon GmbH supports first-time entrepreneurs in business recognition and accompanies young and growing companies via tailor made coachings, through a virtual business incubator as well as through pitching events and business plan awards. bwcon GmbH provides a platform for the cross-sectorial usage of technologies and interdisciplinary cooperation and is managing the Baden-Württemberg: Connected e.V. network with its more than 600 companies, organizations and research institutes. bwcon GmbH has a strategic alliance with Steinbeis foundation.



- ▶ **Umwelttechnik BW**
Keeping you ahead. In order to promote the local growth of environmental technology, the State of Baden-Württemberg has established Umwelttechnik BW (UTBW) an agency devoted to environmental technology and efficiency of resources. UTBW is tasked with establishing a platform for enhanced networking of industry, science and government, initiating forward-looking projects, supporting businesses and institutions committed to environmental technology, and providing a clearinghouse for industry-relevant information.

In co-operation with



- ▶ **InnoEnergy** is the European company dedicated to promoting innovation, entrepreneurship and education in sustainable energy. InnoEnergy Highway is the biggest accelerator offering for early stage start-ups in Europe. Our goal is to make a positive impact on sustainable energy in Europe. We do this by bringing innovative products, services and successful companies to life.



- ▶ As a non-profit entity, the **Stiftung Energie & Klimaschutz Baden-Württemberg** promotes environmental and climate protection. In order to pursue this purpose and invigorate new technologies and innovations in the field of energy supply and energy use—with a focus on renewable energies—we are looking for sustainable energy solutions. As partner of the Green Innovation and Investment Forum 2017 we present two awards with the value of 3,000 euros each to submitted innovations that contribute best to environmental and climate protection. The Stiftung Energie & Klimaschutz was founded in 2007 by EnBW Energie Baden-Württemberg AG.

Contact

► **Valentina Grillea**
Innovation Programme Manager

bwcon GmbH
Technology and Innovation for
Baden-Württemberg

Breitscheidstraße 4
70174 Stuttgart

+49 711 18421-642
→ grillea@bwcon.de

► **Florian Sorg**
Project Manager
Environmental Technology

Umwelttechnik BW
Technologie- und Innovationszentrum
Umwelttechnik und Ressourceneffizienz
Baden-Württemberg GmbH

Bahnhofspassage 2
71034 Böblingen

+49 7031 20398-39
→ florian.sorg@umwelttechnik-bw.de

Venue



► **Steinbeis** – Haus für Management
und Technologie (SHMT)

Filderhauptstraße 142
70599 Stuttgart, Germany

An initiative of:



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InnoEnergy
Knowledge Innovation Community



Partners:



More information:

www.green-inno-forum.eu

