Innovation Company Showcase 1
Investor Reviewers

HANS DELLENBACH
Partner, Chief Financial Officer, Emerald Technology Ventures

MARKUS HÖKFELT
Fund Manager, Almi Invest
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ANDRES ANIJALG
Chief Business Development Officer, Roofit Solar
Andres Anijalg
Co-founder &
Chief Business Development Officer
Roofit Solar Energy OÜ
www.roofit.solar
Problems with traditional solar panels

- Extra cost for material
- Extra cost for labor

90% drop in solar element prices has not reached the end customer
New regulations

Solar is the easiest way to meet the Nearly Zero Energy requirement starting from 2021

Traditional solar panels create visual pollution
Solution

2-in-1

Roofing material = solar panel
Roofit.solar advantages

- Pays back its own cost + rest of the roof
- Looks as the standard non-solar roof
- Easy and fast installation
Meet our Client

Henri Kaasik-Aaslav
7.7kW Solar Roof owner since 2017
Tallinn, Estonia

"This roof gives my house a completely different purpose and reduces the carbon footprint of the construction. It is nice to think that I can share the green energy from my roof by selling it back to the grid.

In April my roof produced as much electricity as my air-to-water heat pump uses throughout the year."
2016
Company established

2017
First solar roofs sold & installed

2018
Pre-round A fundraising
First export revenue
National Environmental Award

2019
New factory under construction
Export market expansion
Traction & Action

⭐ Top 3 Finalist at: Start Up Energy Transition

⭐ National environmental award

⭐ Cooperation started with: Ruukki, SSAB

⭐ Winner of ENGIE retrofit solution 2018
3-in-1 retrofit solution

For fast energy efficiency improvement of the inefficient residential housing stock

- Light structure
- Small thickness
- Maximized solar output per m²
- Fast & flexible onsite installation
Potential market for retrofit industry (UK market only)

- Houses require full renovation: 26m
- Houses suitable for retrofit: 9m
- 5% market share for solar roofs delivery: 3.4bn euro
Target: 10,000 sustainable roofs per year in 2023

- **2020**
  - 100 ROOFS
  - 25 RENTAL ROOFS

- **2021**
  - 400 ROOFS
  - 25 RENTAL ROOFS

- **2022**
  - 2000 ROOFS
  - 500 RENTAL ROOFS

- **2023**
  - 5000 ROOFS
  - 5000 RENTAL ROOFS

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**2020 – 2021**
- Sales network development
- Piloting the rental roof concept

**2022 – 2023**
- Increase production capacity
- Boost sales through implementation of rental roof concept
Creating a new type of roofing market

Solar Roof Sales
Boosted by Nearly Zero Energy requirements starting from 2021

Rental Roof is the new approach for installing roofs in the future

Sales through existing channels
- Roofing Companies
- Prefabricated House Manufacturers
- Distributors

New approach for selling roofs
- New roof and lower energy prices for the customer
- Solar roof and traditional roofing materials for free
- Roofit.solar owns the electricity from the roof
Focus Countries & Route to Market

We utilize already existing sales and servicing channels

- Energy Companies
- Roofing Companies
- Prefab House Manufacturers
Development Path

**Phase I**
*2017 – 2019*
**Proof of Technology**
- Expand production capacity
- Certification & IP
- Product development
- Installation of more roofs

€ 1,000,000

**Phase II**
*2020 – 2021*
**Sales & Rental Roof**
- 6 MW solar roofs installed
- Expand distribution networks to 6 new countries
- Develop the cost effective rental roof panel and 3-in-1 retrofit solar roof
- Pilot 25 Rental Roofs in Germany

€ 6,200,000

**Phase III**
*2022 – 2023*
**Expand**
- Expand roof production to support 100MW annual sales
- Sell 70MW of solar roofs
- Install 55MW of rental roofs + supporting battery systems
- Develop services for grid (i.e. demand response)

€ 25m
Roofit.solar core team

Andri Jagomägi
Founder
CEO

Helen Anijalg
Co-founder
Export and Marketing

Raimond Russak
Co-founder
CFO

Andres Anijalg
Co-founder
Business Development

Iryna Yakobiuk
Co-founder, COO

Kari Maripuu
Co-founder

Dan Hüvonen
CTO

Büsra Yilmaz
Product Development

Elli
Team Motivation & Security
Let’s Roofit!

www.roofit.solar
www.facebook.com/Roofit.solar
info@roofit.solar
andres@roofit.solar
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FLORIAN BACHHEIBL
Co-Founder & Co-Managing Director, Volabo
48 V High Power Drives

Reduced Cost for Drive Components and System. No Rare Earth Metals. Absolute Safety.
ISCAD – INTELLIGENT STATOR CAGE DRIVE

- Safe-to-touch 48 Volt electric drive
  - No high-voltage safety, no high-voltage qualification
  - Significant cost reductions

- Aluminum bars instead of copper coils, no rare earth metals
  - Easier and cheaper to produce

- Integrated power electronics

- Every bar is supplied by a dedicated power electronics unit
  - Number of pole pairs is variable
  - First virtual gearbox in the e-mobility

- Current status: 4th generation prototype, 2 demo cars running

- 38 patent applications in relevant markets (US, CN, IN, DE)
  - 7 Patents granted, all applications owned by VOLABO
  - Patent applications on both principles and implementation (50/50)
MARKET OPPORTUNITIES

- VOLABO is currently financed from cashflow
  - 8 projects, mainly automotive, CN and EU
  - More than 4 m. € accumulated revenue since 2015
  - ZF and Knorr-Bremse and further relevant players which may not be disclosed

- Strategic partnership in agriculture / construction / mining with start of production in 2020 signed

- Negotiations about manufacturing JV in China

- Two low capex business models in future:
  - Small volumes will be served using fabless manufacturing. VOLABO acts as TIER-1
  - Large volumes will be licensed out. VOLABO delivers the Control Platform including software as TIER-2

- Yachts & Boats
  - 60,000 drives p.a. | 600 m. € p.a.
  - Low formal entrance barriers – B2C
  - Great opportunities through 48 V safety

- Agriculture / Construction / Mining
  - 1.5 m. drives p.a. | 2 bn. € p.a.
  - Medium formal entrance barriers – B2B
  - Strategic Partnership signed

- Delivery Trucks / People-Movers
  - 2.5 m. drives p.a. | 2.5 bn. € p.a.
  - High formal entrance barriers – B2B
  - Great opportunities due to safety, robustness and cost

- Automotive
  - 40 m. drives p.a. | 32 bn. € p.a.
  - High formal entrance barriers – B2B
  - JV negotiations in China | Two top ten OEMs interested
A TEAM WITH EXPERTISE

M.Sc. Adrian Patzak
Managing Director

- Expert in **electronics design**
  and drives
- Experience with German car
  OEM

Prof. Dr.-Ing. Dieter Gerling
Strategic Advisor

- **Founder** of FEAAM GmbH
- Senior Scientist at **Philips**
- Director at Robert **Bosch**
- **Professor** at Bundeswehr
  University Munich

M.Sc. Florian Bachheibl
Managing Director

- Expert in **physical modelling**
- Experience with German
  industry **drive manufacturer**

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4 Marketing/ Sales

5 Control/ PE

3 Drive design

9 Working students
JOIN THE E-MOBILITY REVOLUTION

2 demo cars running

18 months to market

6 m. € required for product development

Come on board!
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ELÉONORE BLONDEAU
CEO & Founder, CleanCup
50 billion
## Analysis of Alternative Solution

### Users & Customers are Facing Many Problems

<table>
<thead>
<tr>
<th></th>
<th>Disposable plastic cup</th>
<th>Biodegradable disposable cup</th>
<th>Reusable cup</th>
<th>Mug</th>
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<tbody>
<tr>
<td><strong>User experience</strong></td>
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<td><strong>Environmental impact</strong></td>
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<td><strong>Cost</strong></td>
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<td><strong>Quality</strong></td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Good</td>
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<td><strong>Prohibited in 2020</strong></td>
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<tr>
<td><strong>Authorized but low user experience</strong></td>
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<tr>
<td><strong>Re-usable solutions but painful washing with high water consumption and hygienic issues</strong></td>
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ACTIVE, GOVERNMENT REGULATES THE DISPOSABLE PLASTIC MARKET

- EU adopts “Circular Economy Action Package”, making plastic waste a priority
- Implementation of 5 waste management streams
- Prohibition of disposable plastic dishes
- Prohibition of plastic bags
- Prohibition of disposable plastic dishes

FUTURE BAN ON DISPOSABLES FORCES ORGANIZATIONS TO FIND ALTERNATIVE SOLUTIONS QUICKLY

Source: European Commission Environment, French Government
A MARKET TO SCALE

Sales of water fountains in organizations increase by 3% per year in Europe.
➔ In Europe in 2017: 1.5 billion turnover
➔ In Europe in 2017: 1.5 million of network watercooler sold

European Automatic Distribution market:
➔ 80% of the machines are operated in six main markets: Italy, France, Germany, the Netherlands, Spain and the United Kingdom.
➔ Of the 3.77 million Automatic Distributor:
   60% hot/cold drinks = 2,26 million of machines
➔ The sector's turnover in 2012 was € 11.3 billion

Strong potential

CLEANCUP MARKET ESTIMATED AT 2,26 MILLIONS OF MACHINES IN EUROPE

Source: Afifae, CleanCup benchmark for the market sizing
Our ambition is to improve the way to drink and totally eliminate the use of disposable cups.
CLEANCUP® is a turnkey solution that automatically distributes, collects and cleans, on-site, reusable glasses to eliminate the use of disposable cups and improve drinking on campuses, businesses and communities.
A TURNKEY SOLUTION TO ACCOMPANY THE TRANSFORMATION

**DIAGNOSTIC**
We analyze the ecological impact of drinking in your premises to give you a summary document with our recommendations to improve it.

**CLEANCUP®**
Set-up of CleanCup®, manufactured in France and eco-designed to distribute, collect and automatically washed, on site, your customized reusable cups.

**MAINTENANCE**
CleanCup® is monitored remotely to provide you with personalized follow-up according to your consumption and to maintain the optimum sanitary conditions of your equipment.

**SENSITIZATION**
We set-up actions to raise awareness on circular economy and we provide you with communication tools to facilitate the adoption of CleanCup®.

**REPORTING**
Evaluation, monitoring and ecological assessment of the CleanCup® solution put in place to enable you to value your commitment.
We enable you to offer your employees a new consumer experience while reducing costs and improving environmental impacts.
Our team combines commercial & technical expertise accompanied by quality partners
Today we have

A VALIDATED MARKET

+20 orders
+80 press coverage
+17 winning competitions

= € +400k turnover

WITHOUT ANY PROSPECTION, WE ALREADY HAVE +20 FIRMS ORDERS, THAT IS +25 MACHINES AND + THAN 750 QUALIFIED LEADS IN FRANCE AND ABROAD
Today, we have

A STRUCTURED PRODUCT DEVELOPMENT STRATEGY

R&D Faisability  Prototype & Field tests  Industrialization  Large production

5 to 10 machines/week  5 to 10 machines/day
Today, we need €2 M to accelerate industrialization and meet strong demand in France & International.

In parallel, a leverage effect with the BPI & Banks will be conducted.
Today, we need

€ 2 M to accelerate industrialization and meet strong demand in France & International

- Reduce production cost by 64%
- Go from 10 to +10,000 machines
- Implement IA to optimize water & energy consumption
- Go from France to all over Europe
- Go on other markets
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ROLF LUCHSINGER
CEO, TwingTec
The intelligent way to unlock the full power of wind: TWINGTEC ENERGY DRONES – WIND ENERGY 2.0 (www.twingtec.ch)
The intelligent way to unlock the full power of wind:
TWINGTEC ENERGY DRONES – WIND ENERGY 2.0
Today’s wind power technology is not enough to reach our climate targets.
Wind Energy 2.0: More energy with less material

- High altitudes, stronger winds → more energy + more often
- No tower & foundation, in total 90% less material usage → lower invest + floating wind power
- Mobile, compact, easy to transport & (re-) deploy → remote areas + off grid market
Disruptive energy cost reduction potential

Levelized cost of electricity (LCOE) (€/MWh)

- Fixed-bottom wind offshore
- Floating wind offshore
- Wind onshore
- PV
- Diesel power

2010 2015 2020 2025 2030 2035
Our Global Markets

**TODAY**

**Off-grid**
- Mines, remote communities, resorts, islands
- 4 billion USD
- 30 Cents/kWh
- 900 MW in Canada and Australia

**FUTURE**

**On-grid**
- Wind farms on-shore and off-shore
- 100 billion USD
- < 5 Cents/kWh
Off-grid Containerized Wind Power

TT100 (100 kW) saves:
100’000 liters diesel
240 tons CO₂ per year
Payback in 1-5 years
Deep Off-shore Floating Wind Farms

Unlocking 4TW for wind energy in Europe alone
TwingTec’s patented design is setting the standard in the AWE sector.
TwingTec is the first full proof of concept system
TwingTec is the first full proof of concept system – Wind Energy 2.0

Pilot with Swiss utility BKW 2019
World class airborne wind energy experts ready to commercialize TwingTec energy drones
We look for partners and investors for the development of a full scale (100kW) commercial demonstrator.

Contact

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www.twingtec.com
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JAMES MURRAY
Product Owner, Verv
Driving decarbonisation with enabling technology

James Murray

@verv_energy

verv
What is Verv?

Verv is a smart home device that connects to your meter and tells you when key appliances have been turned on or off, for how long and how much energy they have used.
Verv Technology

7 patents

Appliance Signatures

- **Kettle**
  - Power (W)
  - Time (seconds)
  - £3.12 (Used 27 times)

- **Microwave**
  - Power (W)
  - Time (seconds)
  - £3.67 (Used 42 times)

- **Washing Machine**
  - Power (W)
  - Time (seconds)
  - £5.82 (Used 11 times)

Monthly Cost

*numbers for illustrative purpose only*
Green Electricity Sharing Platform
A distributed ledger

2 kWh
Our Live Energy Trading Community

UK's first P2P trade of energy on the blockchain
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ERIK ODEN
CEO, C-Green Technology
Erik Odén, CEO
Cleantech Forum Europe, Stockholm 2019
5 billion tons of sludge. Every year.
Wet sludge
Bacteria
Virus
Parasites
Heavy metals
Pharmaceuticals
Microplastics
Methane + NO\textsubscript{x} green-house gases.
More emissions than the whole aviation industry.
What do we do with it?
More landfills?
Hydrochar

» Biofuel
» Soil improvement
» Raw material
It all comes together in Finland 2019

Heinola paper mill

CO$_2$-e savings/year
+4,000 ton

Sludge capacity/year
+20,000 ton
Let’s solve the world’s sludge problem together.
A huge, worldwide challenge

We are looking at a multi-billion ton, multi-segmented global problem, in need of a cost-effective and practical solution.
A sludge recycling solution for every city and sludge producing industry

- Nutrients + energy (water)
- Solid biofuel
- Wet sludge

Water treatment plant → HTC plant → CPH boiler

Phosphorous recovery
Ash
Continuous process
70-90% volume reduction
No bacteria, viruses and parasites
Negative GHG emissions
No odour problem
Easy storage and transportation
Inert product with carbon sink capability
Enables phosphorus recovery
Wet organic waste is produced everywhere and it’s a major environmental headache.
Unique particle flow design

Heat generation from process waste

High energy recovery capability