



Cleantech Forum **Europe** | Stockholm

Innovation Company Showcase 1



Investor Reviewers



**HANS
DELLENBACH**

Partner, Chief
Financial Officer,
Emerald
Technology
Ventures



**MARKUS
HÖKFELT**

Fund Manager,
Almi Invest



Cleantech Forum **Europe** | Stockholm

Innovation Company Showcase 1



ANDRES ANIJALG

Chief Business Development Officer, Roofit Solar

Andres Anijalg

Co-founder &
Chief Business Development Officer
Roofit Solar Energy OÜ
www.roofit.solar



Roofit.solar
Photovoltaic metal roofs

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



Roofing material = solar panel

Solution
2-in-1





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**

Powered by




In cooperation with

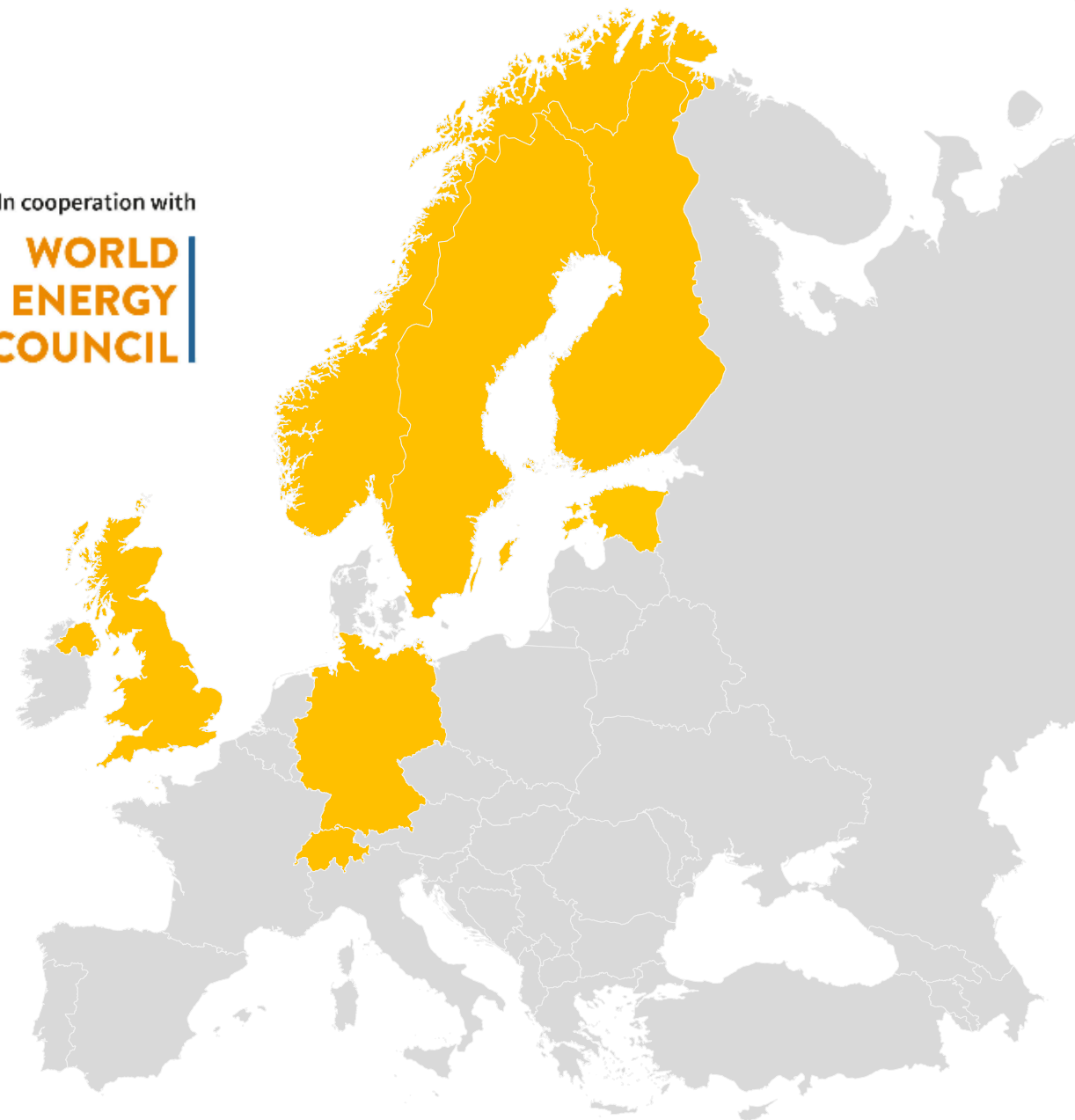


★ National environmental award



★ Cooperation started with: 

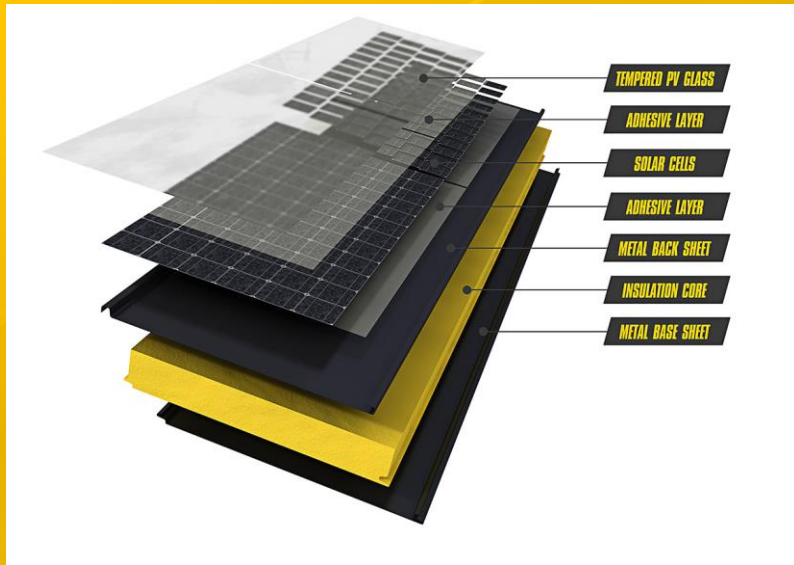
★ Winner of ENGIE retrofit solution 2018





3-in-1 retrofit solution

For fast energy efficiency improvement of the inefficient residential housing stock



Light structure



Small thickness

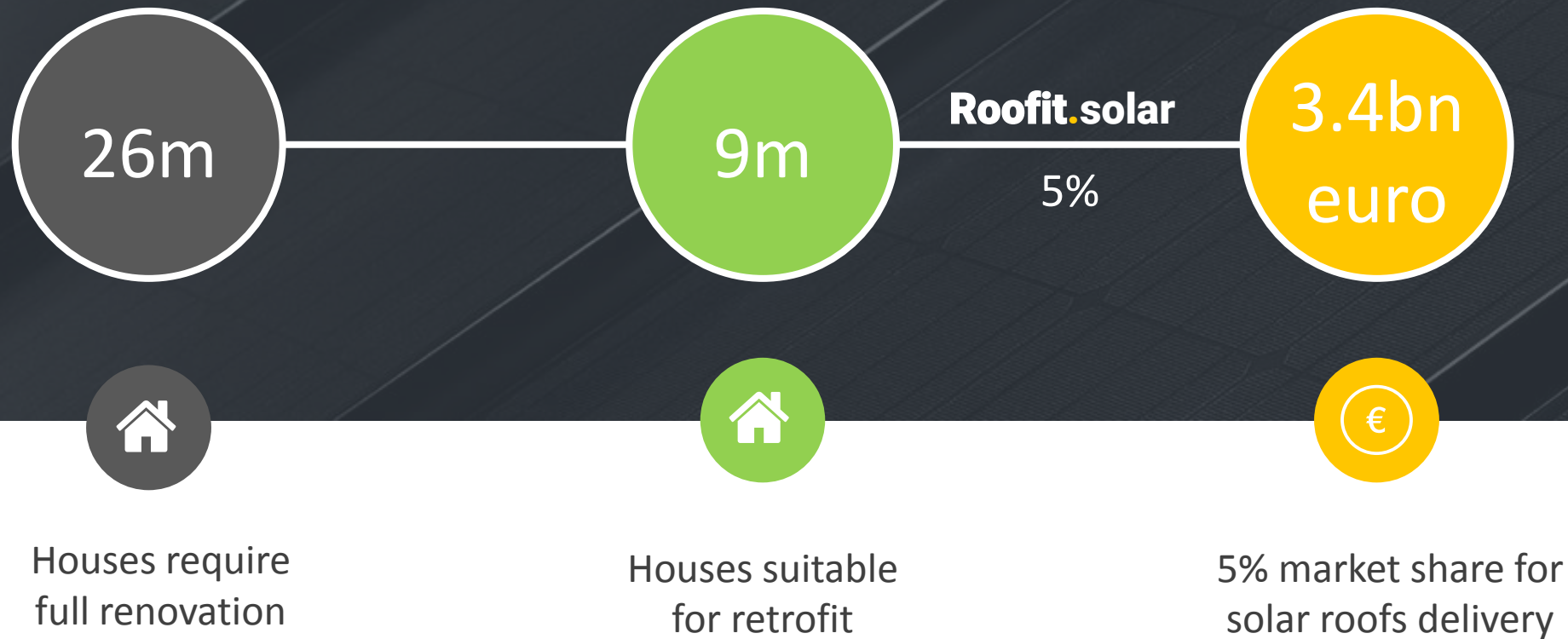


Maximized solar output per m2

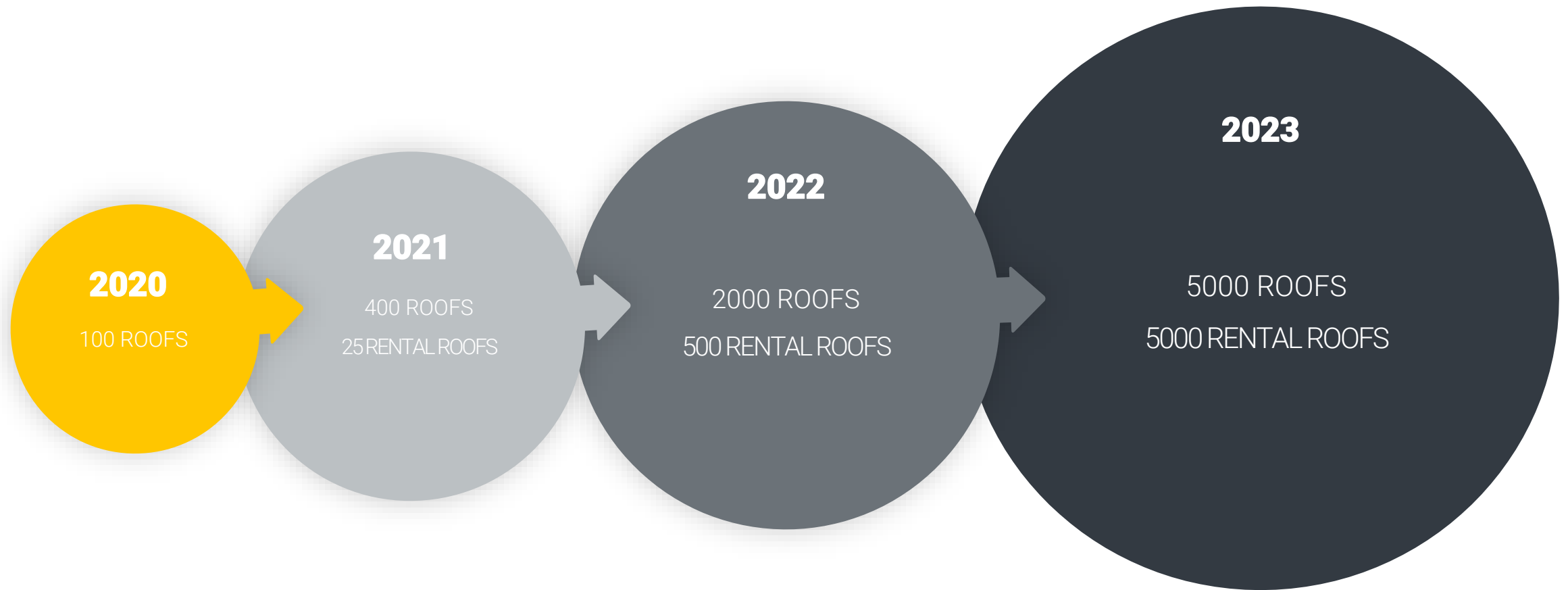


Fast & flexible onsite installation

Potential market for retrofit industry (UK market only)



Target: 10,000 sustainable roofs per year in 2023



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*



Roof as a Service

*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

Roofing Companies

RUUKKI
SSAB

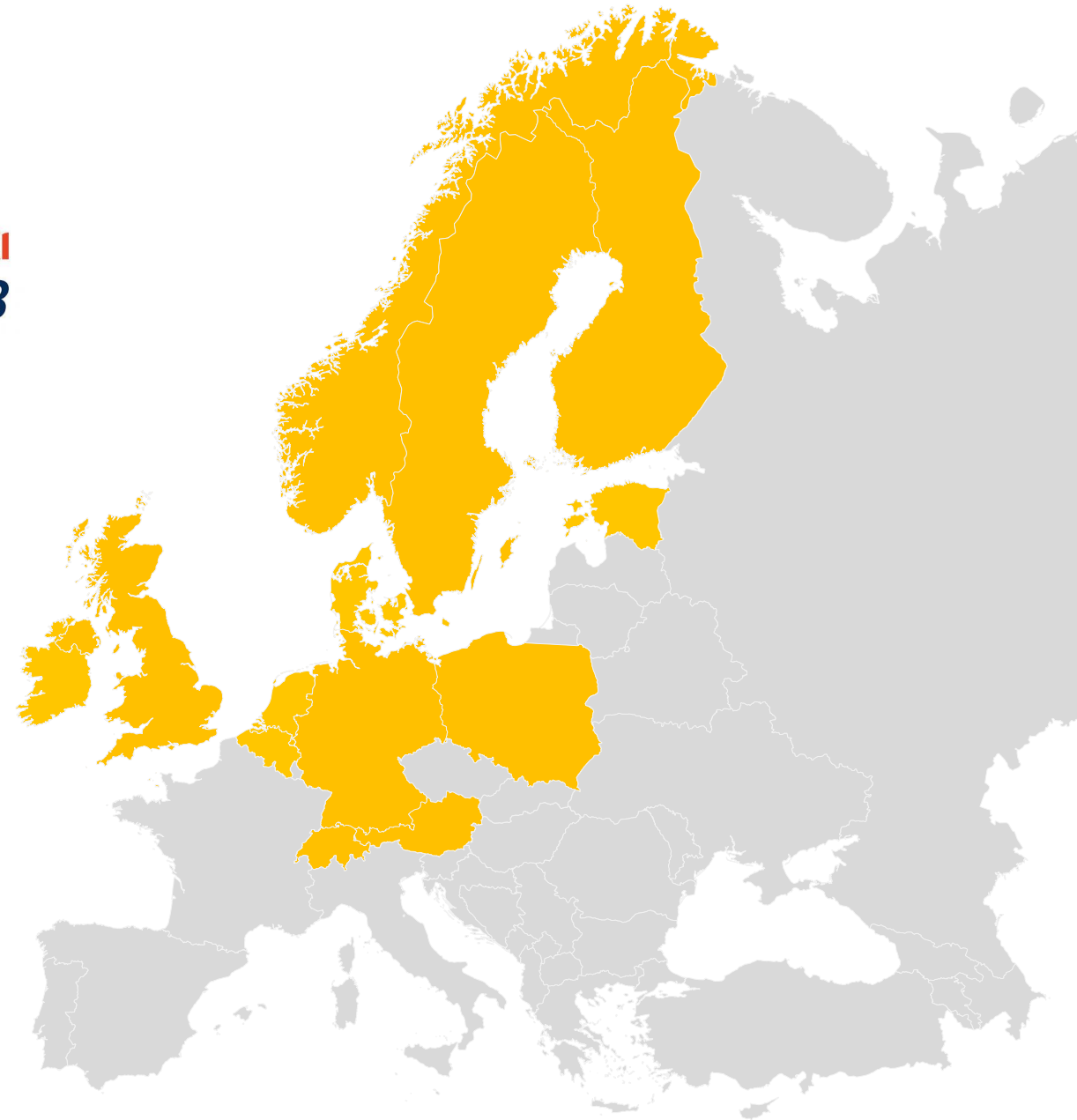
Energy Companies

ENGIE

Prefab House Manufacturers

AKSO-HAUS

Roofit.solar
Photovoltaic metal roofs



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



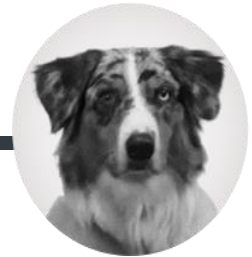
Helen Anijalg
Co-founder
Export and Marketing



Raimond Russak
Co-founder
CFO



Andres Anijalg
Co-founder
Business Development



Elli
Team Motivation
& Security



Iryna Yakobiuk
Co-founder, COO



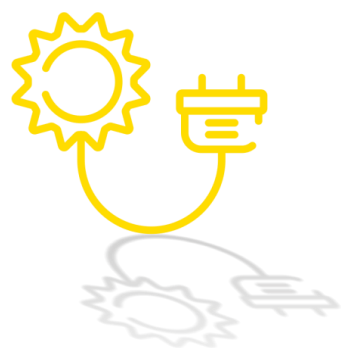
Kari Maripuu
Co-founder



Dan Huvonen
CTO



Büsra Yilmaz
Product Development



Let's Roofit!

www.roofit.solar

www.facebook.com/Roofit.solar

info@roofit.solar

andres@roofit.solar

.solar



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FLORIAN BACHHEIBL

Co-Founder & Co-Managing Director, Volabo

48 V

High Power Drives



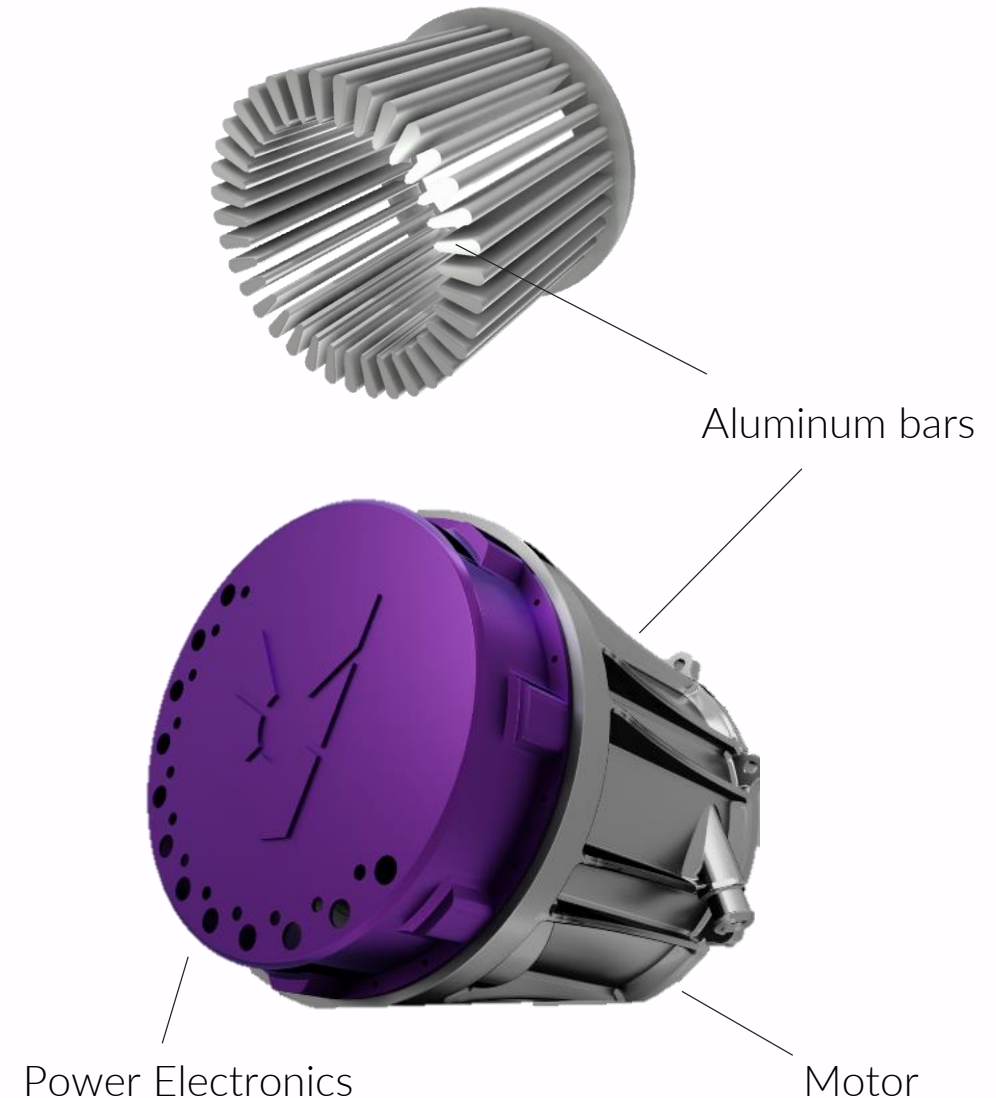
Reduced Cost for Drive Components and System.

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

Time to market



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**



Marketing/ Sales



Control/ PE



Drive design



Working students

JOIN THE E-MOBILITY REVOLUTION

2 demo cars
running

Come on board!

18 months to
market

6 m. € required for
product development



Innovation Company Showcase 1



ELÉONORE BLONDEAU
CEO & Founder, CleanCup



Pitch deck
Cleantech Forum
Stockholm - May 2019

Eléonore BLONDEAU

CEO & Founder

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Privileged & confidential

















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A large pile of discarded white disposable cups and brown paper cups, representing 50 billion pieces of waste. The cups are scattered across the frame, some upright and some lying on their sides. They are covered in dirt and debris, suggesting they have been thrown away. The background is a dense, chaotic mass of these cups, filling the entire image.

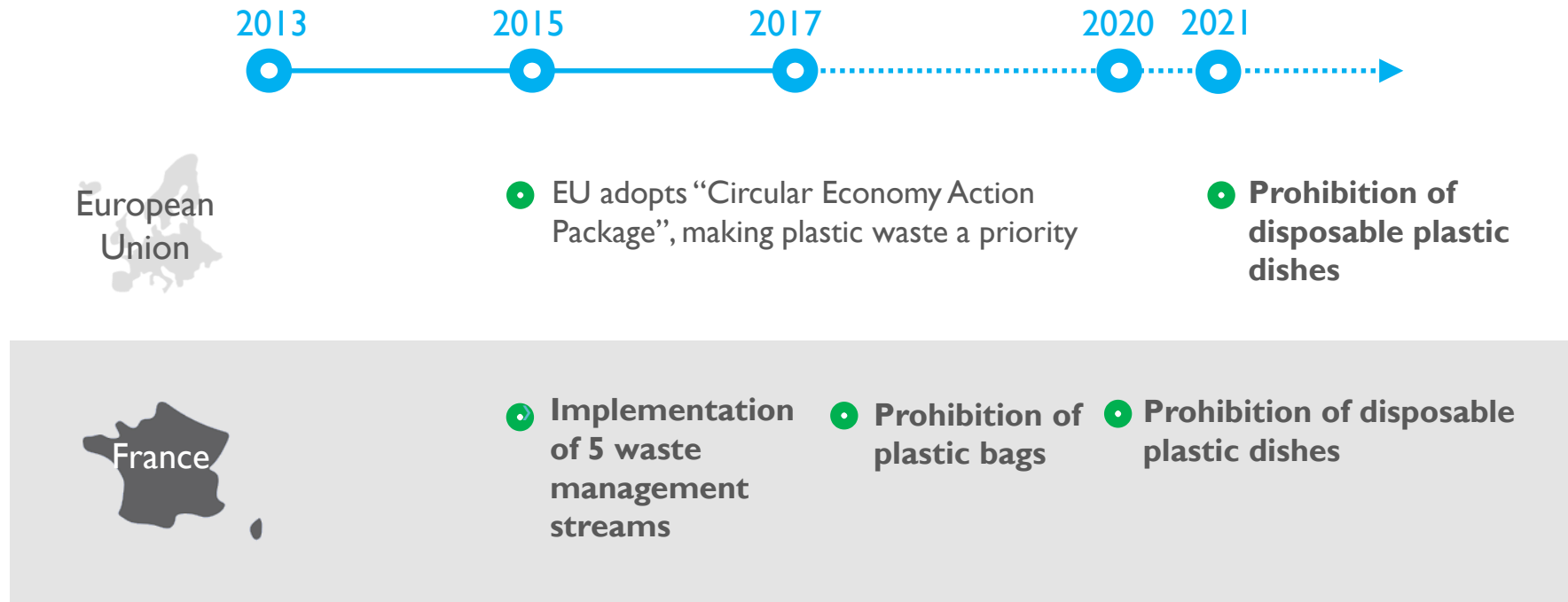
50 billion

ANALYSIS OF ALTERNATIVE SOLUTION

USERS & CUSTOMERS ARE FACING MANY PROBLEMS

	 Disposable plastic cup	 Biodegradable disposable cup	 Reusable cup	 Mug
User experience				
Environmental impact				
Cost				
Quality	Low	Low	Medium	Good
	Prohibited in 2020	Authorized but low user experience	Re-usable solutions but painful washing with high water consumption and hygienic issues	

ACTIVE, GOVERNMENT REGULATES THE DISPOSABLE PLASTIC MARKET



**FUTURE BAN ON DISPOSABLES FORCES ORGANIZATIONS TO FIND
ALTERNATIVE SOLUTIONS QUICKLY**

Source: European Commission Environment, French Government

A MARKET TO SCALE

Strong potential

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**

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

Source : Afifae, CleanCup benchmark for the market sizing

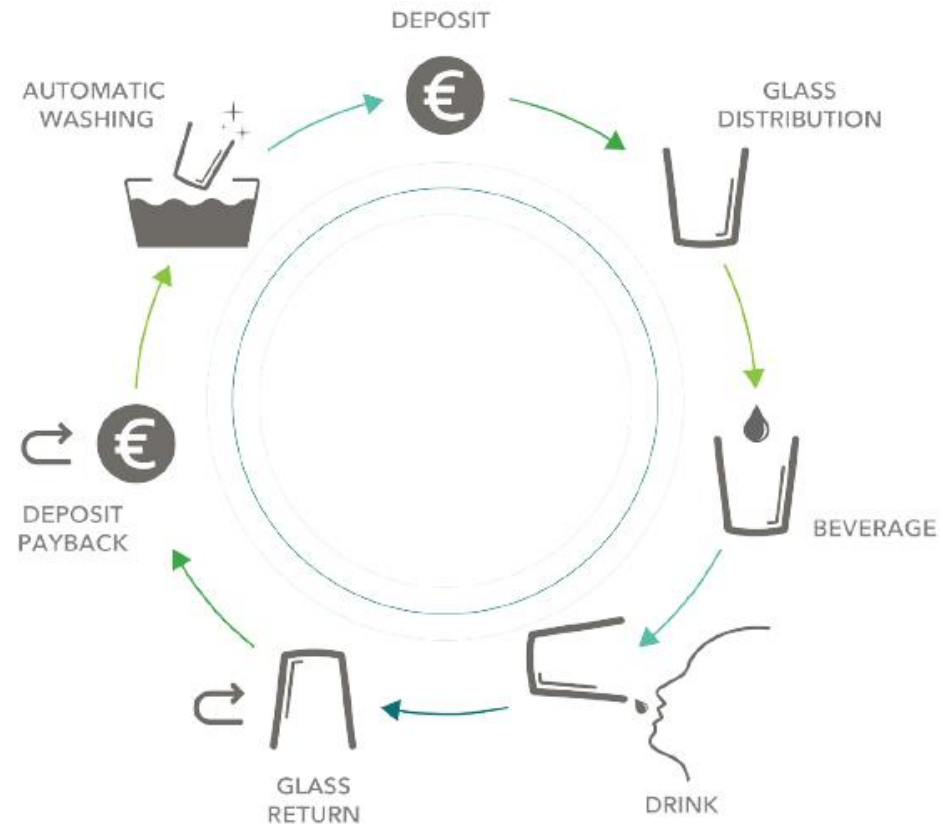
OUR AMBITION IS TO IMPROVE THE WAY TO DRINK AND TOTALLY
ELIMINATE THE USE OF DISPOSABLE CUPS





REMOVE THE USE OF DISPOSABLE CUPS & IMPROVE USER EXPERIENCE

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



ECOLOGIC

Sustainable
Zero Waste
Eco-designed
Made in France



ERGONOMIC

Customizable
Design
Accessible to
people with reduced
mobility



CONVENIENT

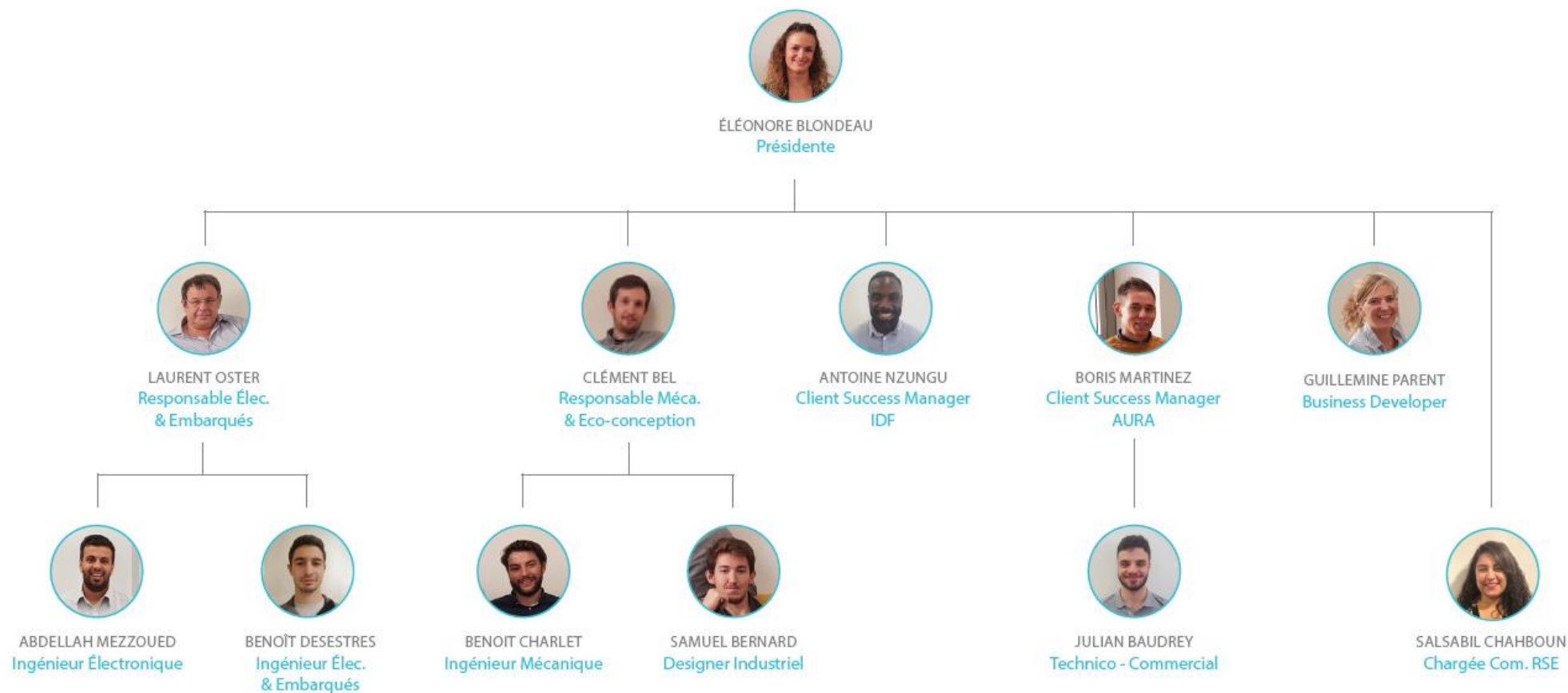
Connected
Customized
maintenances and
repairs
Several deposit
technologies



ECONOMIC

Save costs
Waste Management
Maintenance
Water supply

OUR TEAM COMBINES COMMERCIAL & TECHNICAL EXPERTISE ACCOMPANIED BY QUALITY PARTNERS





PARTNERS

Product



Early Adopters



CSR



Financial





BUSINESS DEVELOPMENT



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

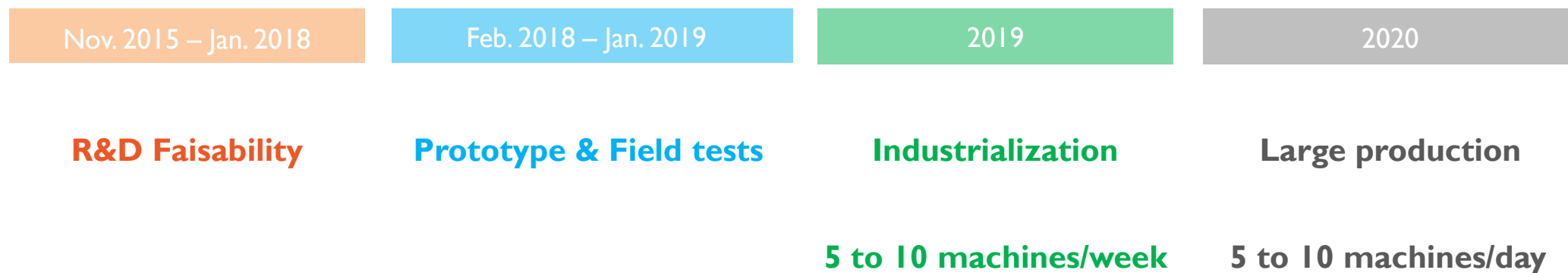


PRODUCTION



Today, we have

A STRUCTURED PRODUCT DEVELOPMENT STRATEGY





DEVELOPMENT ORIENTATION

DETAILED FINANCIAL PROJECTION ON REQUEST



Today, we need

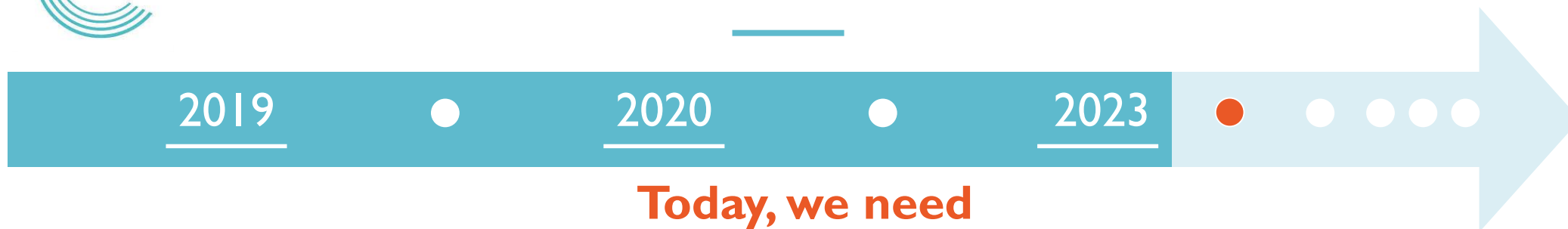
€ 2 M TO ACCELERATE INDUSTRIALIZATION AND MEET STRONG DEMAND IN FRANCE & INTERNATIONAL



IN PARALLEL, A LEVERAGE EFFECT WITH THE BPI & BANKS WILL BE CONDUCTED



DEVELOPMENT ORIENTATION



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

Wind Energy 2.0

Unlock the full power of wind

Dr. Rolf Luchsinger CEO



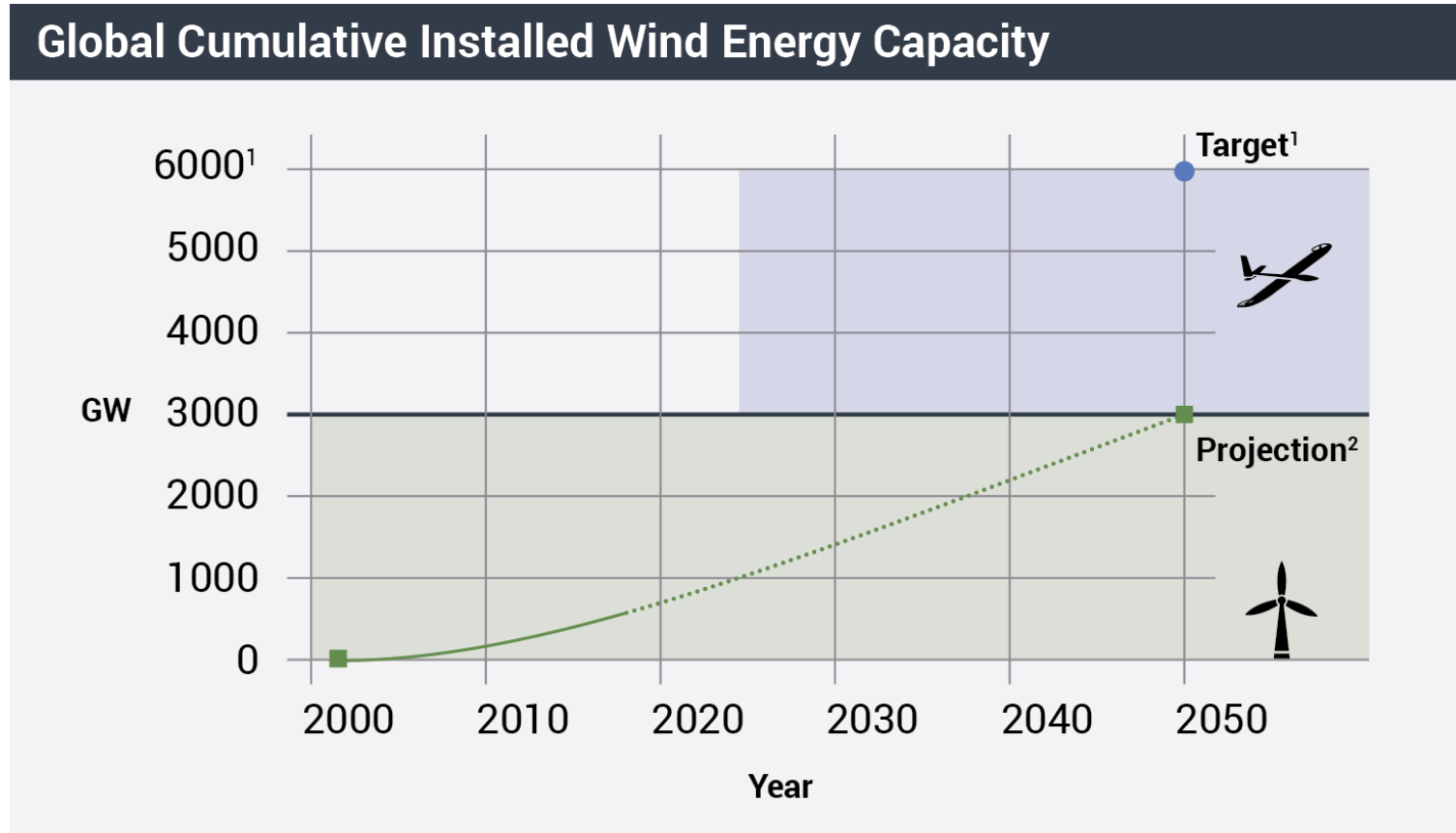
Cleantech Forum, 22.05.2019, Stockholm



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



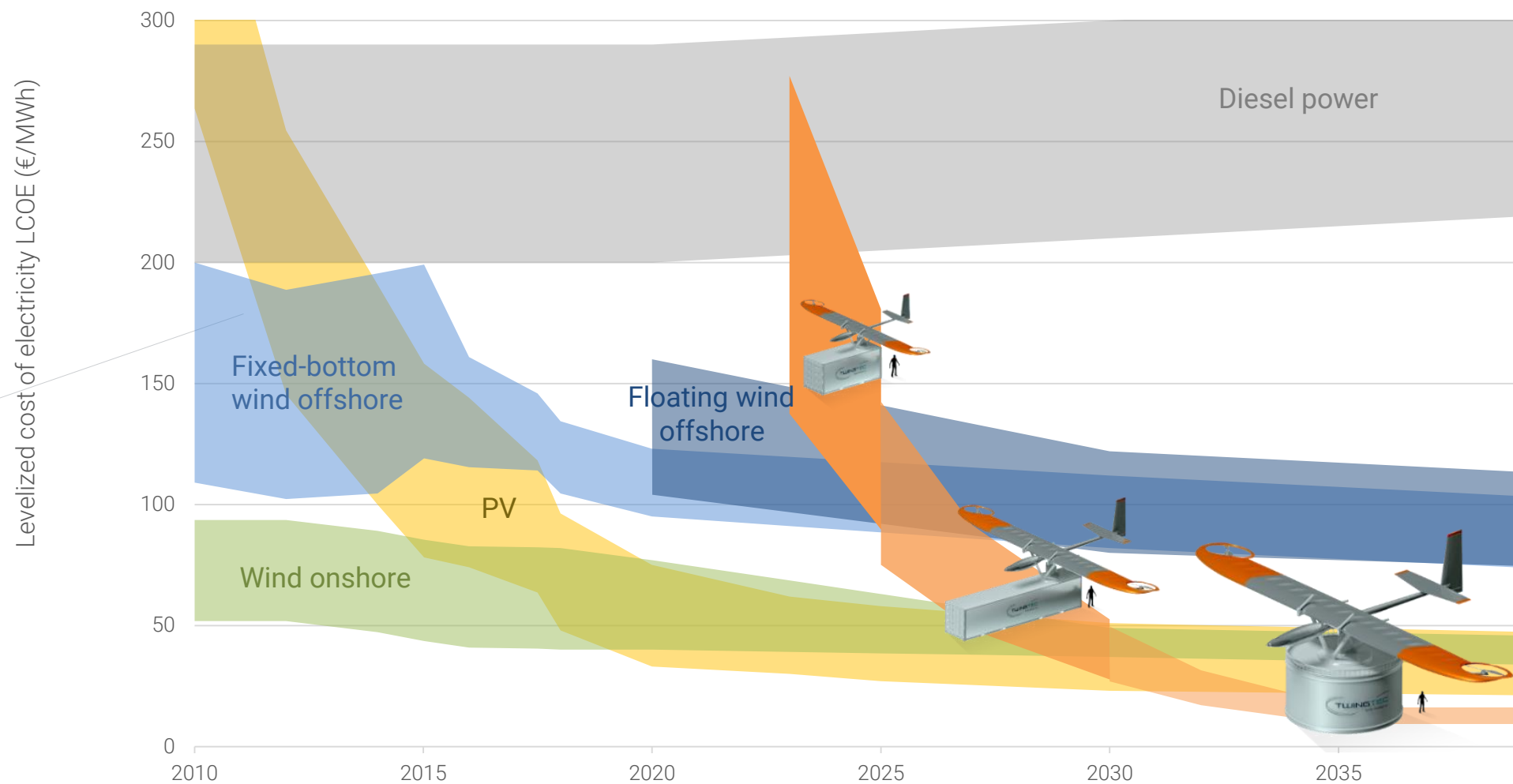
High altitudes, stronger winds
→ **more energy + more often**

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**

from bending to tension

Disruptive energy cost reduction potential



Our Global Markets

TODAY

Off-grid

Mines, remote communities,
resorts, islands

4 billion USD

900 MW in Canada and Australia

30 Cents/kWh

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



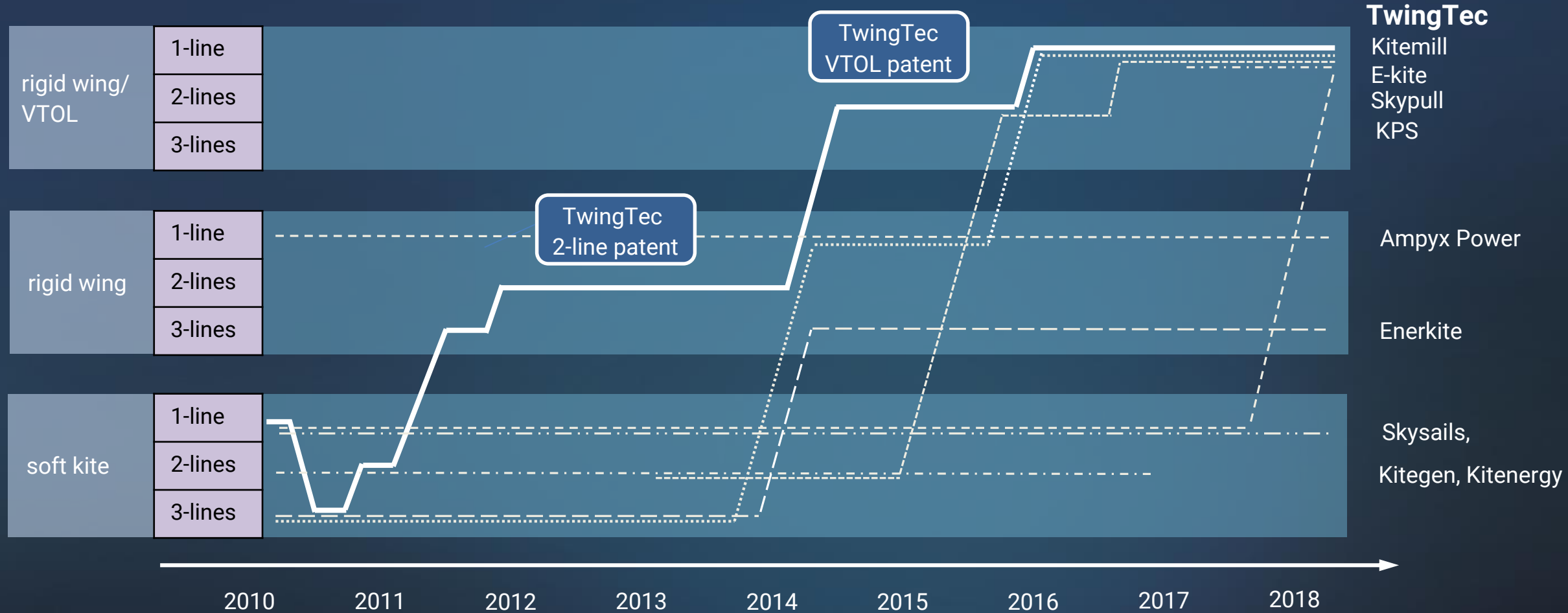
Deep Off-shore Floating Wind Farms



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



Pilot with Swiss utility BKW 2019



We look for partners and investors for the development of a full scale (100kW) commercial demonstrator.



Contact

Dr. Rolf Luchsinger, CEO
rolf.luchsinger@twingtec.ch
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www.twingtec.com

www.twingtec.ch



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JAMES MURRAY
Product Owner, Verv

Driving decarbonisation with enabling technology

James Murray



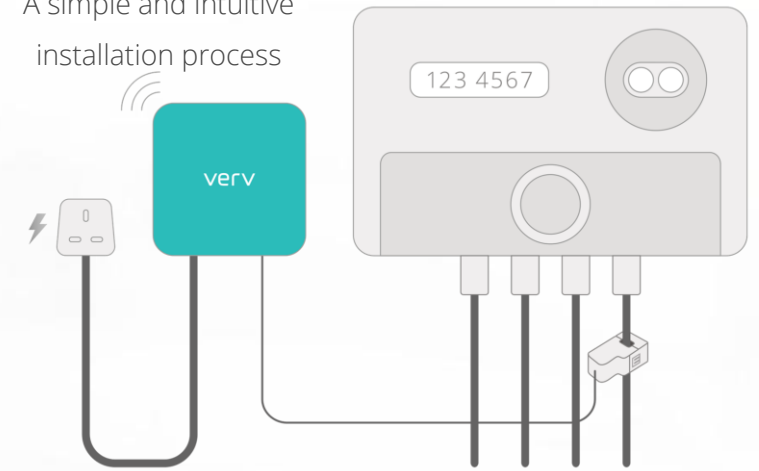
@verv_energy

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.

A simple and intuitive installation process

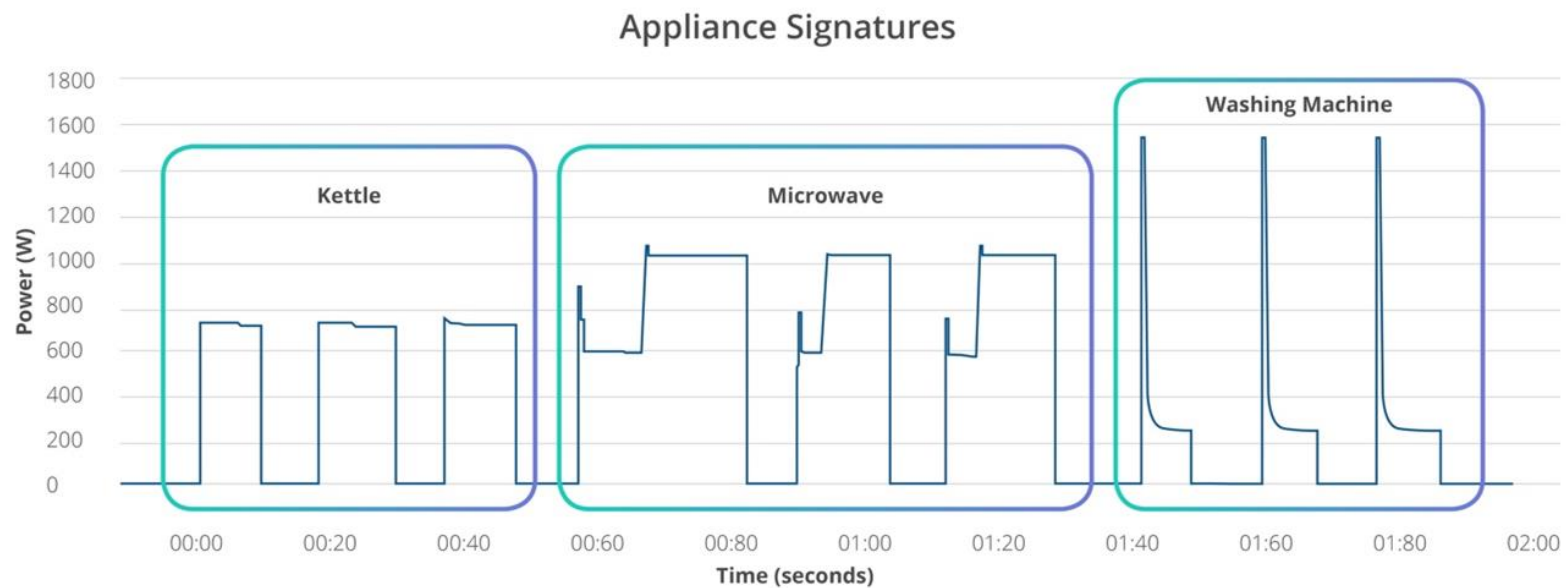


Verv listens out for key appliances from a single point in the home.



7
patents

Verv Technology



£3.12 (Used 27 times)



£3.67 (Used 42 times)

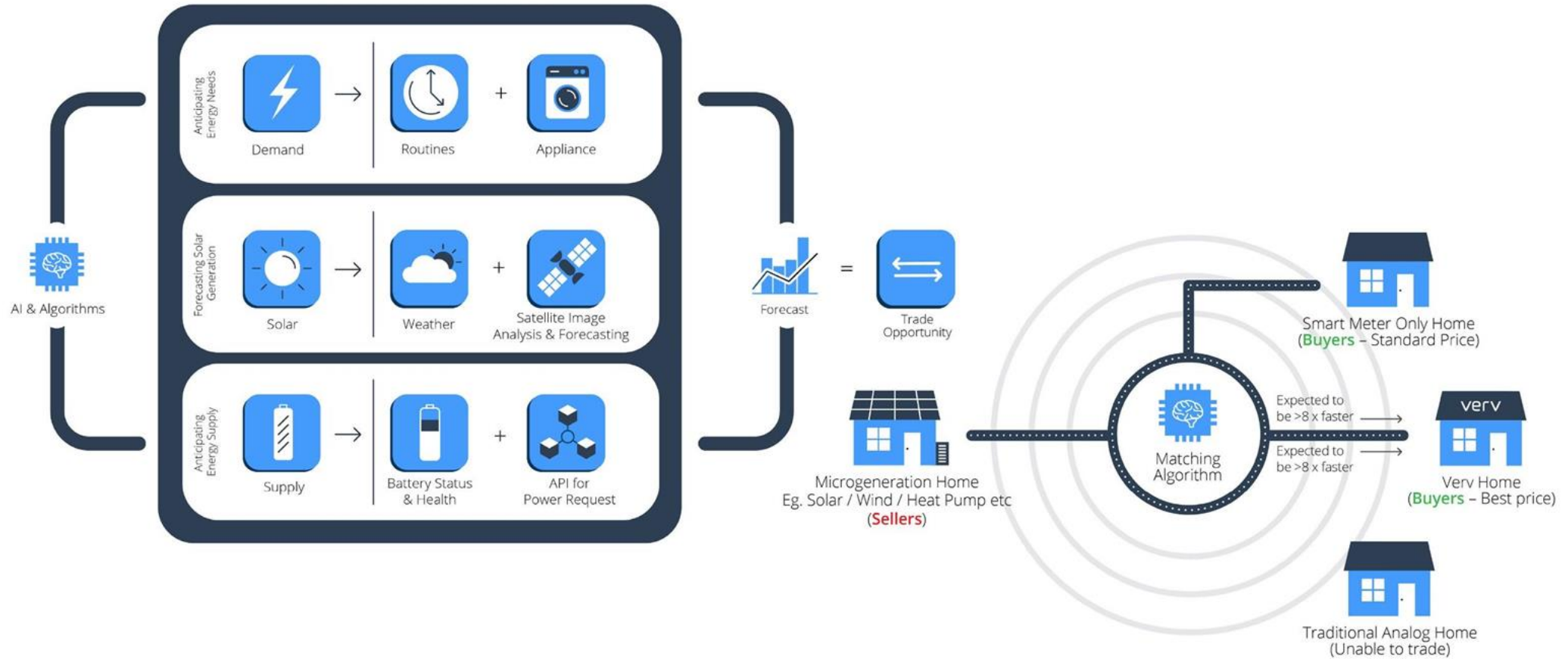


£5.82 (Used 11 times)

Monthly Cost

*numbers for illustrative purpose only

Green Electricity Sharing Platform



A distributed ledger



verv

Our Live Energy Trading Community



UK's first P2P trade of energy on the blockchain

verv





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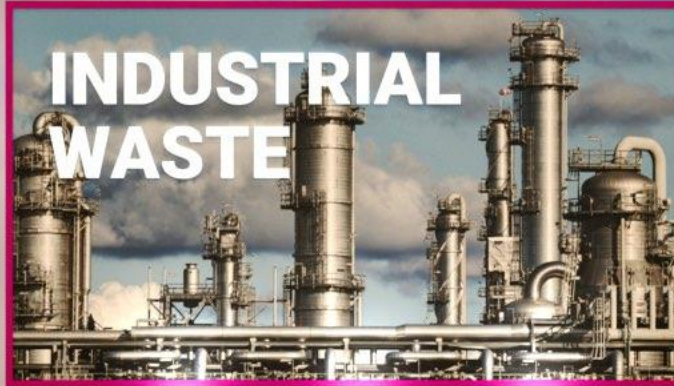
ERIK ODEN

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



A large pile of hay is shown in the foreground, with steam or smoke rising from it, suggesting decomposition or fermentation. In the background, there are several large, cylindrical hay bales stacked together. The scene is set outdoors with trees and a cloudy sky in the background.

Methane + NO_x
green-house gases.

**More emissions than the
whole aviation industry.**





What do we do with it?
More landfills?

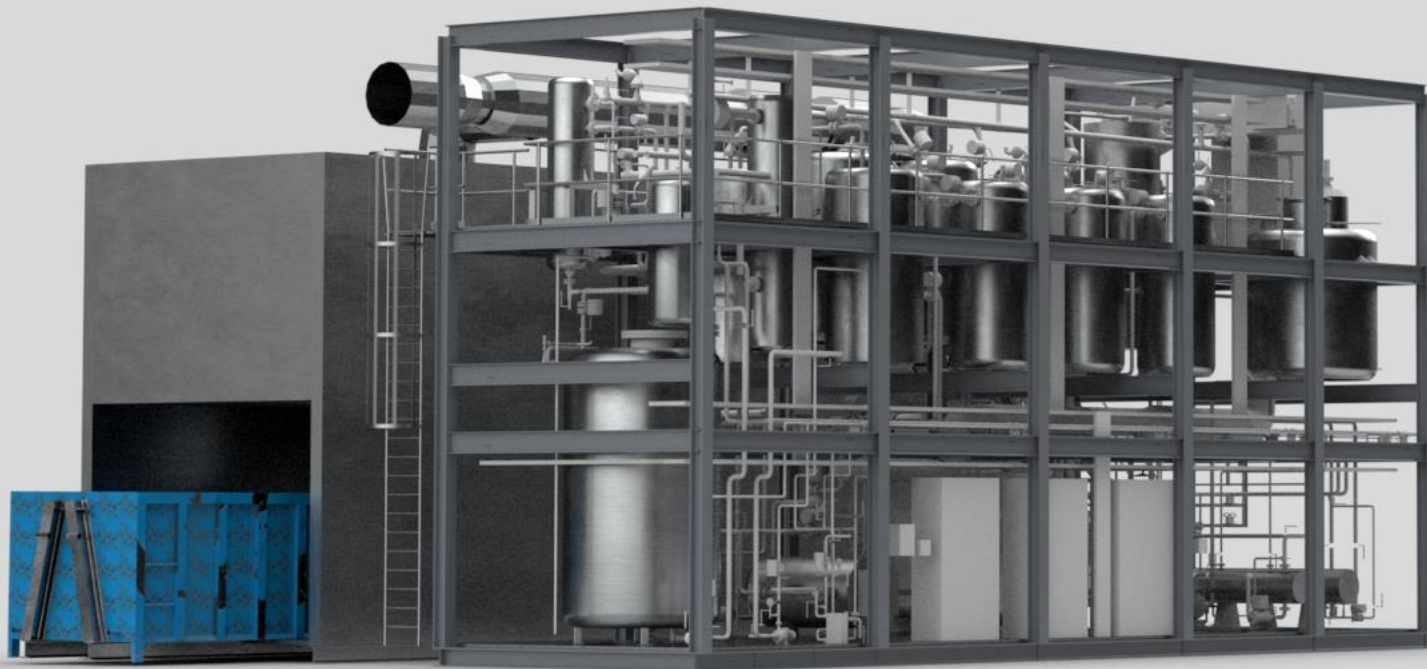
Hydrochar

- » Biofuel
- » Soil improvement
- » Raw material



ZERO | HYDROTHERMAL
ENERGY | CARBONIZATION

HTC REACTOR





It all comes together in Finland 2019



storaenso

Heinola paper mill

CO₂-e
savings/year
+4,000 ton

Sludge
capacity/year
+20,000 ton





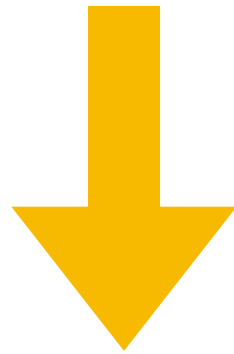
**Let's solve the world's
sludge problem together**

C GREEN
HYDROTHERMAL CARBONIZATION

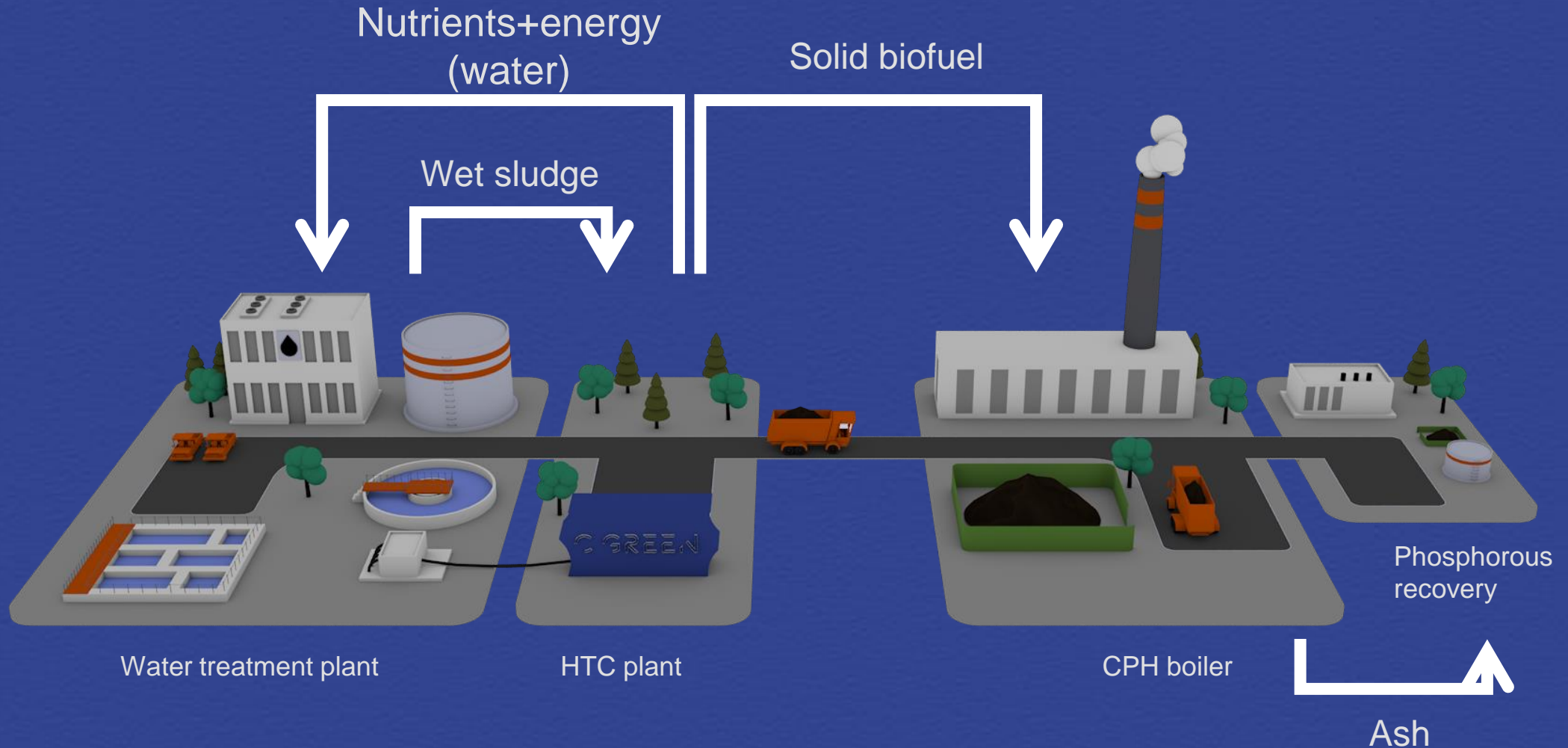
A huge, worldwide challenge

**We are looking at a multi-billion ton,
multi-segmented global problem, in need
of a cost-effective and practical solution**

EXTRA



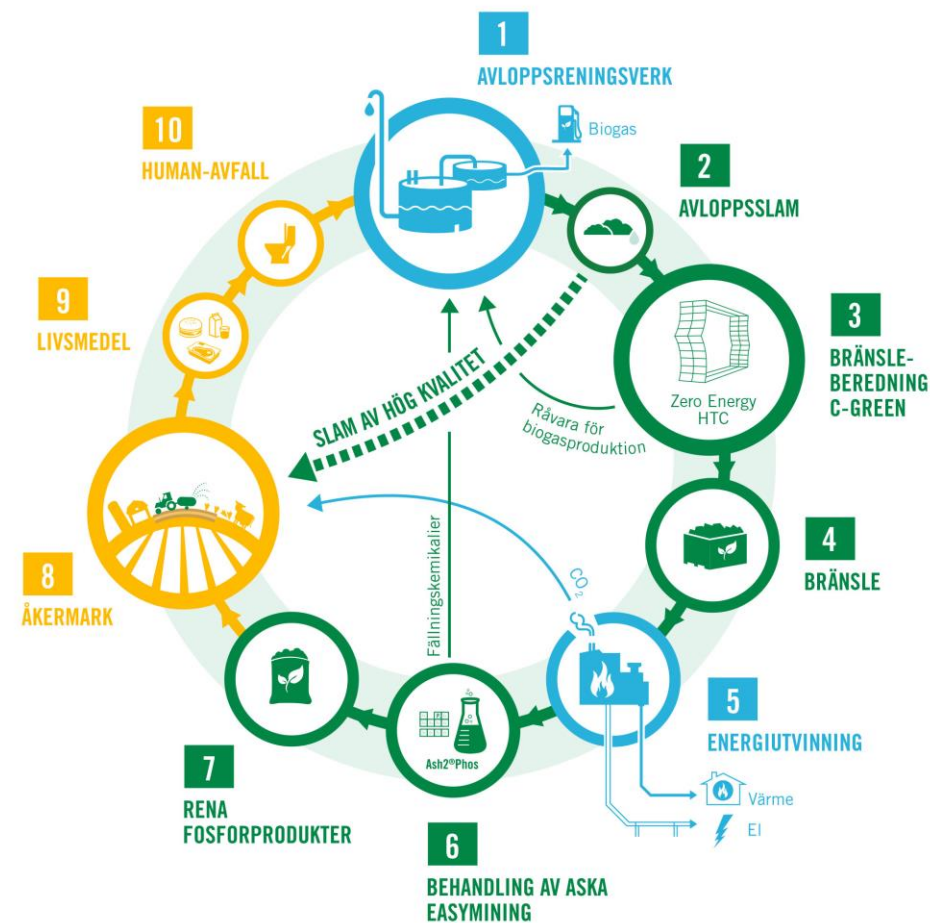
A sludge recycling solution for every city and sludge producing industry



RAGN SELLS

+

C GREEN



ZERO
ENERGY

HYDROTHERMAL
CARBONIZATION

Energy required

Drying

Zero Energy HTC

- » 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**



