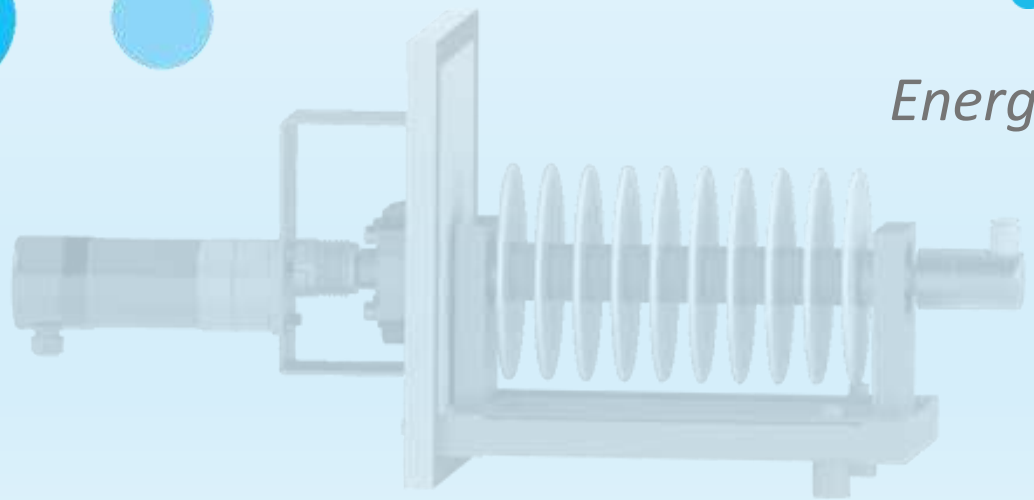
AKVOLA TECHNOLOGIES

Energy-efficient fine bubble solution for industrial waters

January 2021



Executive Summary

Energy-efficient bubble generator for industrial wastewater treatment

- Originally founded as a system integrator and engineering consultant, akvola invented and patented **MicroGas**, an **energy efficient bubble generator** to be used in **industrial wastewater treatment**. Several turn-key wastewater treatment plants using this advanced technology have been installed with blue-chip customers.
- In **2019**, with proof of concept and reference projects, akvola started marketing **MicroGas as a stand-alone product**. MicroGas can **retrofit existing plants** by replacing existing costly methods of bubble generation**. Cost reductions** result in a typical **payback** for the end-customer **of ~2 years**. Even more competitive in new construction.
- **MicroGas** technology selected in **2020** by *Global Water Intelligence* (leading market research firm in the water space) as **key challenger**.
- With a **fast-growing total market of +€1.8 B**, we expect to reach break-even by selling 400 bubble generators through system integrators in 2023, generating total revenues of €7M.
- akvola seeks funds from one or more investors to roll out this product strategy. **€4 M** are needed to **break even**.

akvola's track record is solid, hitting key development and commercial milestones along its path

From a university spin-off to a high-tech growth company

Product & commercial milestones

Turnkey solutions based on MicroGas
- up to 20m³/h
- 4 commercial plants sold

Focus on standardised components

MicroGas S
- up to 10m³/h
- 30 units sold to date

MicroGas XL
- up to 50m³/h
- launched in June; first order expected soon

First **patents granted**

Purchase Orders: 30 units
Sales Backlog 10 units
Sales Pipeline 72 units

2013: akvola founded (spin-off TU Berlin)

2016 | 2017 | 2018 | 2019 | 2020

€185k turnover | €350k turnover | €630k turnover

Past rounds: €2.3M Seed investment from leading German investors

Corporate milestones

GreenTec awards 2014
Water Innovation Europe 2016
Frost & Sullivan Technology Innovation Award 2017

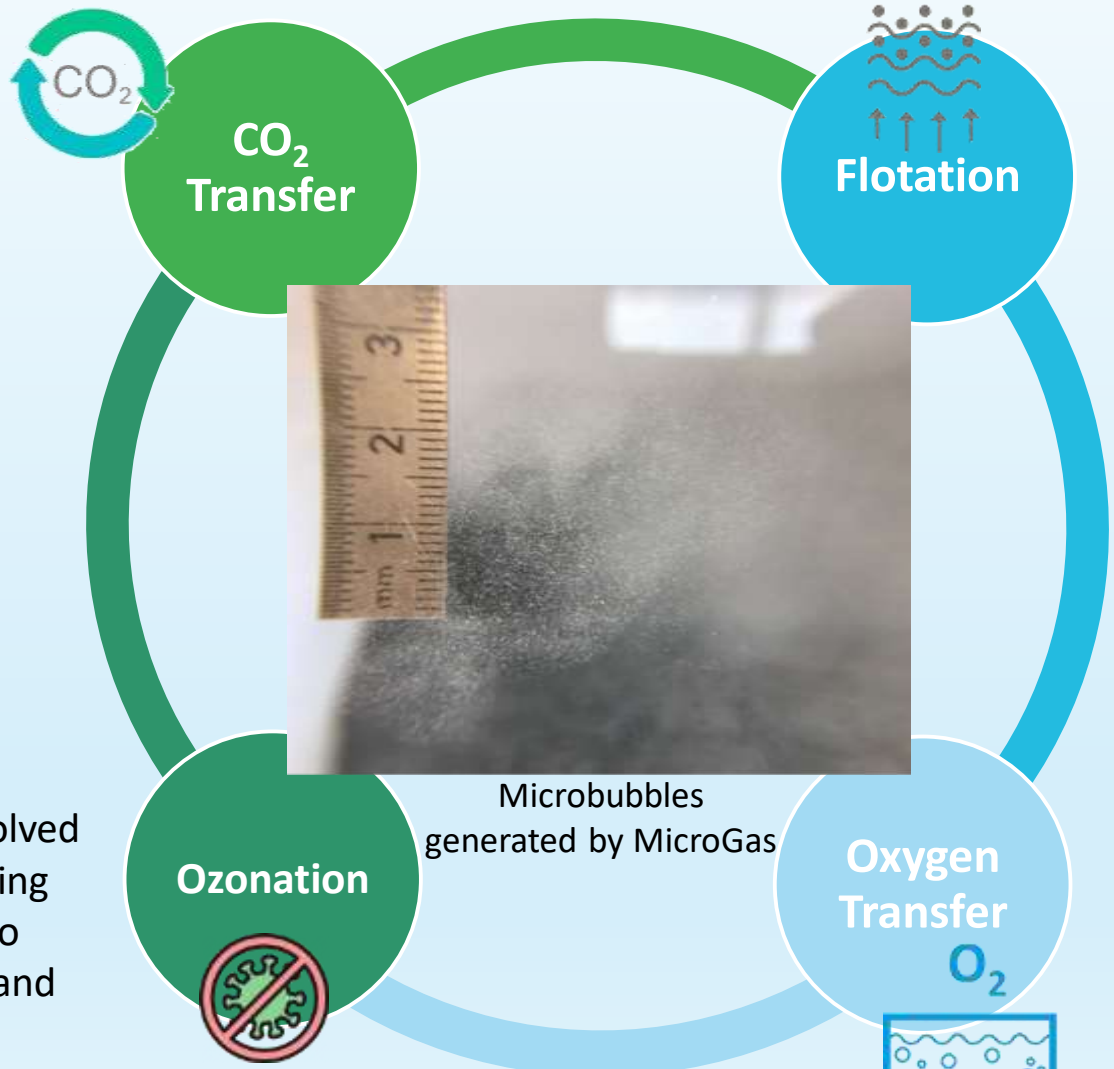
GLS record-breaking crowdfunding campaign (€750k in 4 hours)

Online webinar with 350 global registered users

Funding round seeking €4M

Bubble generators are used in four major applications with water treatment through flotation as “low hanging fruit”

Carbon Capture
Bubble generators are used to better dissolve CO2 in liquids as part of carbon capture processes.



Microbubbles generated by MicroGas

Disinfection
Ozone is easily dissolved in water / liquids using bubble generators to disinfect the water and break-down large molecules.

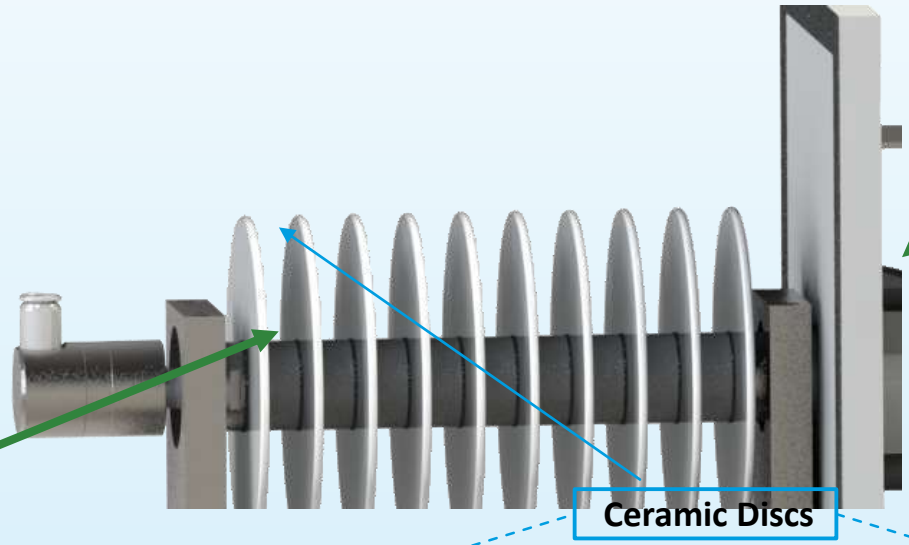
Water Treatment
Microbubbles slowly rise in water and easily attach to contaminants. The impurities gather on the upper surface and can be skimmed off from the cleaned water. In industrial sewage plants, Dissolved Air Flotation (DAF) is the standard technology to create microbubbles for this flotation process.
Thanks to lower OPEX at comparable CAPEX, MicroGas is extremely competitive and this segment is the preferred target market for akvola.

Hydroponics / Fish Farming
Bubble generators create fine bubbles with a high specific surface area accelerating the dissolution of oxygen into the water used by fish and plant roots for breathing.

MicroGas uses a unique mechanical design and novel ceramics to provide an unmatched low energy consumption

1 *Gas flows through the rotating discs into the liquid, generating a cloud of microbubbles between 40-60 micron ("white water")*

2 *Rotating motor spins the shaft at 200 rpm*



3 *Compressed gas (air, ozone, oxygen, CO_2) is injected at 1-2 bar into the hollow shaft*

Click here to watch the Microbubble Generator in action

Click here to watch the MicroGas Demo Day 2020

Robust and comprehensive patent portfolio composed of three families and many granted patents spread across key geographies (EU, US, AU, RU, MX, IN and GCC)

Use of ceramic discs offers MicroGas a competitive advantage on the following:

- High chemical resistance
- Low corrosion risk
- Long Lifetime (>10 Years)
- Immediate switch ON/OFF process

"MicroGas uses a ceramic aerator which has an advantage in special applications where conventional DAF cannot be used, e.g. effluents with high TDS and pH."
- General Manager at ESPAC China

The simplest and most cost-effective microbubble generator in the market

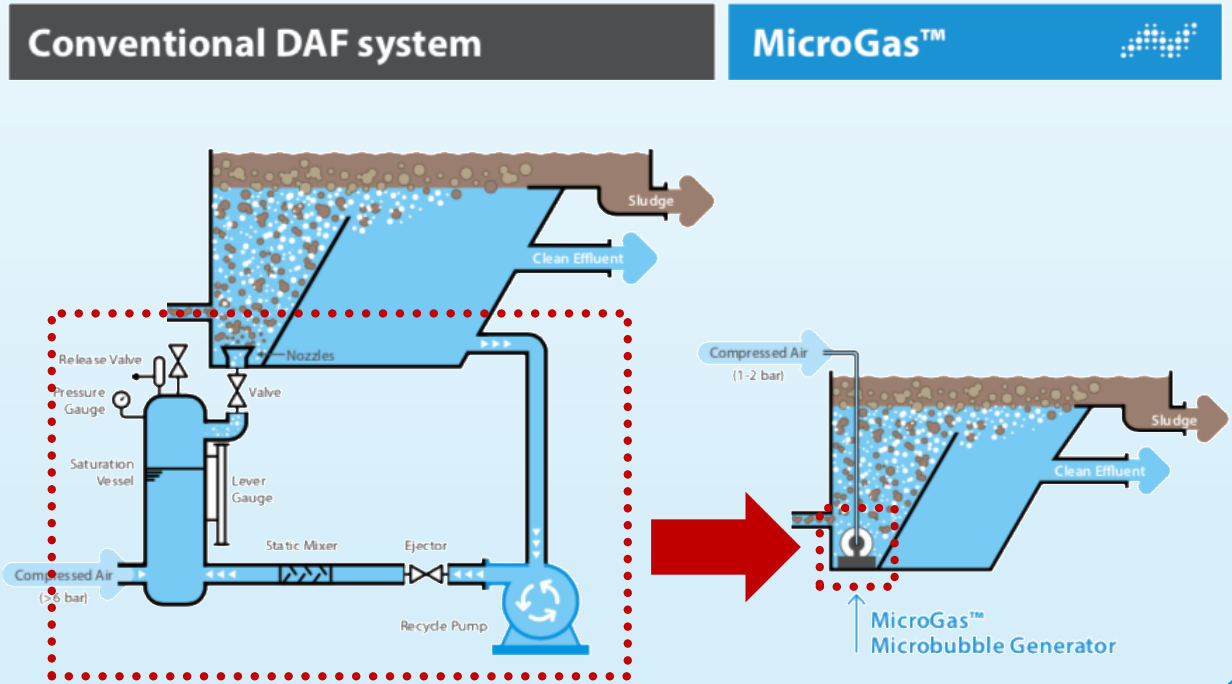
Unique Selling Proposition

- **Lowest Total Cost of Ownership through up to 90% lower energy use and attractive CAPEX** compared to conventional technologies due to its unique *Direct Microbubble Technology*.

- **Retrofitting an existing flotation plant with MicroGas™ provides up to 100% more treatment capacity.** Equivalently, a new flotation plant can have a smaller volume (up to 50% less).

- MicroGas™ units **require minimal equipment and are therefore extremely easy to install, operate and maintain.**

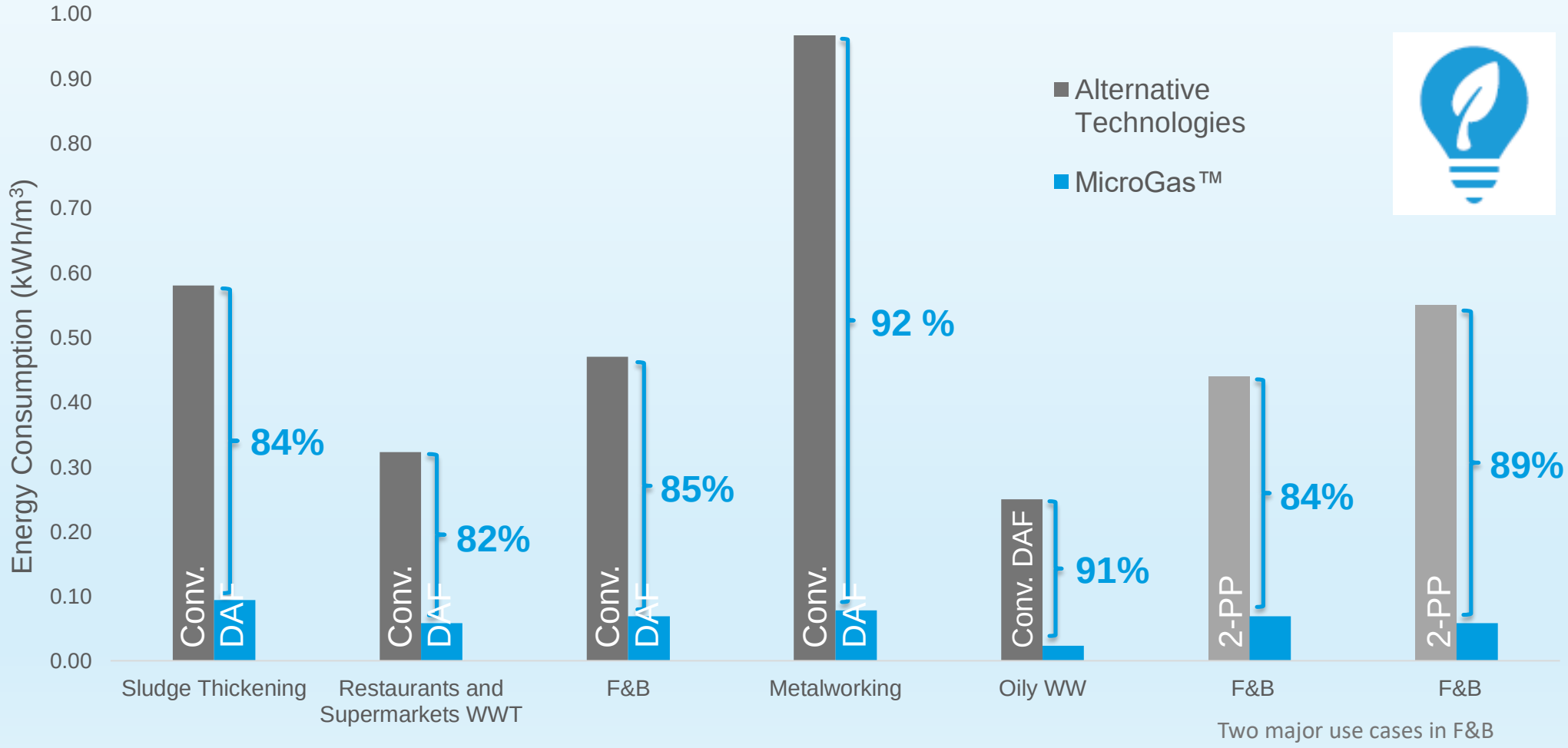
Comparison: Small device replaces complex system



* DAF = Dissolved Air Flotation

Lowest energy consumption

Energy Benchmark co-developed with our Partners



Conventional DAF: Recirculation Pump + PV Pressure Vessel
2-PP: 2-Phase Pump

Focus on Retrofitting DAF systems with MicroGas™: Attractive offer for existing DAF users through integrators

WHAT

- Adapting/upgrading a conventional running system (DAF) to an efficient MicroGas-based system with minimal intervention:
- No civil works
- Use of existing assets
- Low investment for end-user

WHO

- **akvola:** Equipment supplier for MicroGas Units
- **System Integrator/ Engineering Partner:** Adapts running system and installs MicroGas. Usually supplies additional services to the end user
- **End-User:** Operator/owner of running system

WHERE

- Any running flotation system is suitable to being retrofitted with MicroGas™
- Best fit:
- Industrial wastewater (standard in Food & Beverage industry as well as many other sectors, e.g. Oil & Gas)
- Higher electricity prices (>0,08€/kWh) result in payback times below 2 years
- Rectangular configuration allows for easier installation

WHY

- Payback in 1-3 years thanks to lower OPEX and energy savings
- Operation is more reliable and less maintenance intensive
- Adaptation can be done in matter of days and benefits are immediate
- Immediate payback if existing system needs replacement anyway

DAF Retrofit Case Study: A win-win-win situation with payback times ~2 years for the final customer

Retrofit Business Case – Small-scale DAF plant

akvola

MicroGas units

15.000 €

System Integrator

+ Installation

24.000 €

End-user with 20 m³/h DAF plant

Payback time 2,4 years

Benefits

- Gross margin 47%
- Scale

Benefits

- Gross margin ~30%
- Upselling (chemical supply contract or additional equipment)
- Perceived as innovator

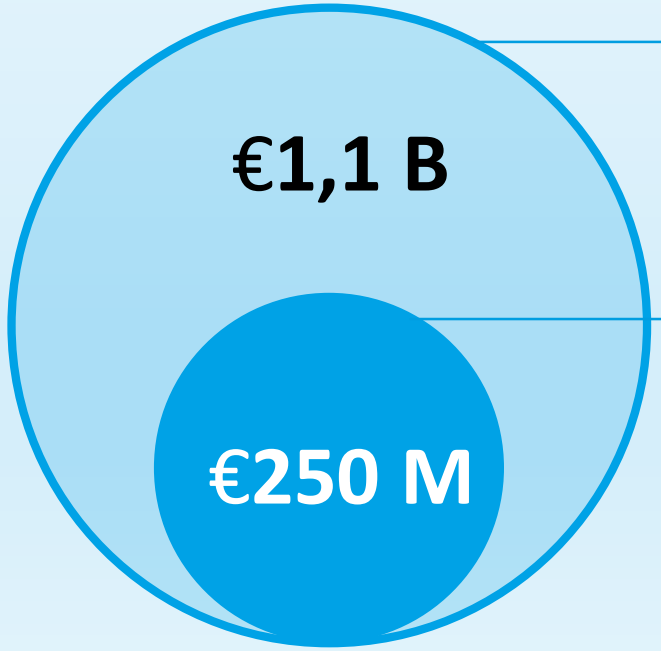
	Yearly Costs @ End-user		
	DAF	with MicroGas	
Chemicals	20.028	19.592	-2%
Electricity @ 0,08 €/kWh	8.285	763	-91%
Labor	5.581	3.488	-38%
TOTAL (€)	**33.894**	**23.843**	**-30%**

Source:

Partner

Large market opportunity of +€1,8B in 2020 for akvola's MicroGas units in flotation alone

Flotation	Oxygen Transfer	Ozonation	Carbon Capture
€1,8 B CAGR 7%	**€5 B+** CAGR 5,9%	**€700 M** CAGR 6%	Market to emerge



CapEx for Bubble Generators in Flotation in 2020
Worldwide, Food & Beverage and Oil & Gas alone
Source: Global Water Intelligence

Our Immediate Market Opportunity

11.170 retrofittable DAF plants
in EU (7.490) and U.S. (3.580) in Food & Beverage
Sources: Eurostat, US Census

We have a validated B2B2B Go-to-Market strategy with a clear focus on distributors and system integrators

Target Customers

- **B2B2B Indirect sales** via partners/distributors that sell turn-key systems to end-users:
  System Integrators, OEMs and EPC companies
- **150 such global customers identified**, 13 of them are already customers
- All of them in key regions with huge Food & Beverage industries: **EU, US, CN**, IN, MY, TR, RU, MX
- On average each of these customers **has access to over 50 retrofittable plants and sells over 5 new plants per year**

Go-to-Market approach

VP Sales + 3 Sales Managers:

- Acquire 1-3 partners per key region / country – 3 planned for 2020, 10 planned for 2021
- Sign **Blanket Purchasing Agreements** – **1 contract signed,** 2 in advanced negotiations

Gain Partners (Scale)

Outbound lead generation via
- Cold calling (30-45% of leads)

Inbound generation (ca. 25% of leads) via
- Online (SEM/SEO, content marketing)
- Public Relations with key journals and news outlets (WDR, GWI)
- Professional associations (GWP, DIN)

Key Account Management (Recurring)

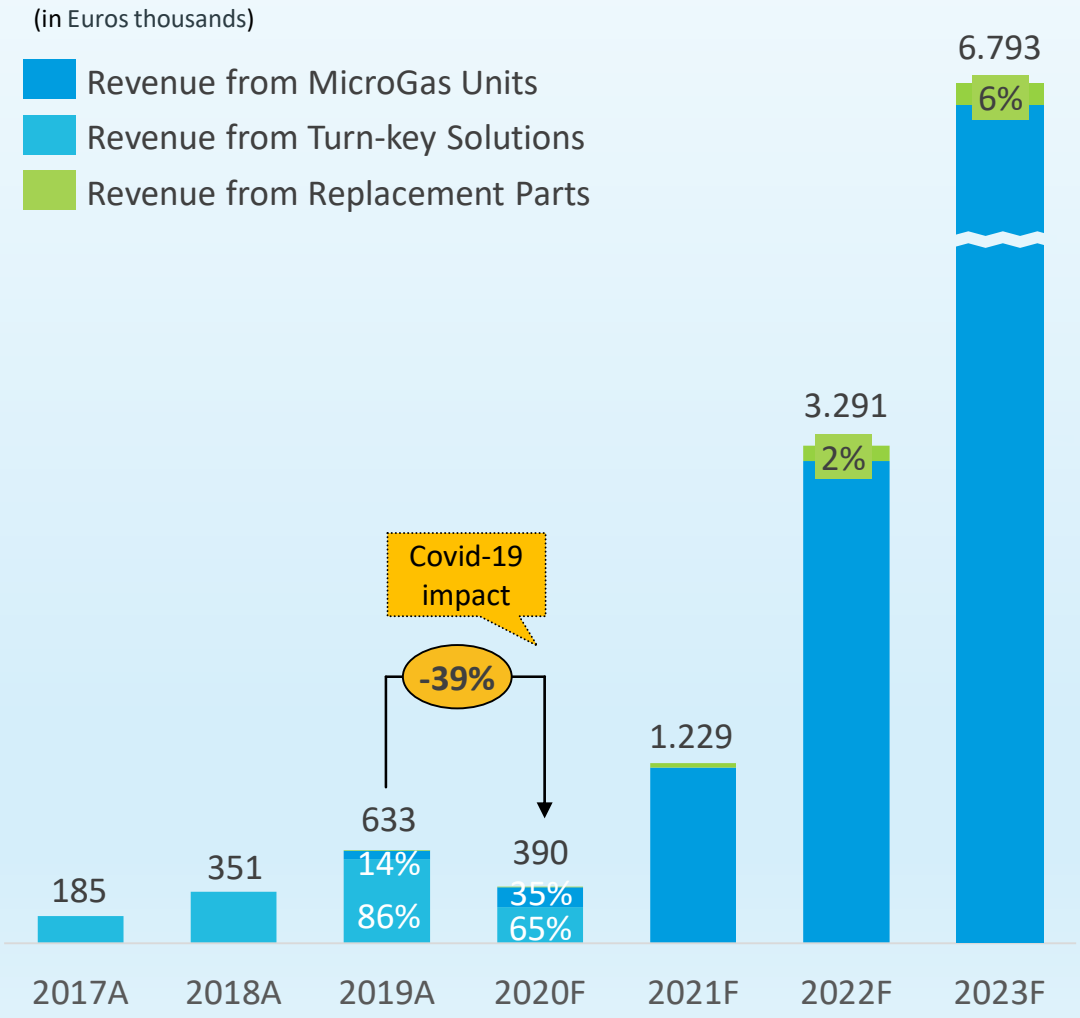
- Monitor Customer Satisfaction, gain Market intel and generate returning business via **Net Promoter Score** and **4Q methods**
- **25% of our customers are repeating customers**

Event Marketing (Awareness)

- Host **Thematic Webinars** – **300 qualified leads generated in our first webinar**
- Exhibit at **Leading Events** – **WEFTEC (US), Aquatech (EU, MX), IE Expo (CN), IFAT (DE, IN), ECWATECH (RU), …**

MicroGas as a standardised drop-in product outgrows turn-key solutions

Historical and forecasted revenue



Historical

- Spin-off in 2013 from the Technical university of Berlin. Early revenues from system integration and engineering in industrial wastewater, not from current products
- From 2016, sales focus was on turn-key systems based on MicroGas in order to develop first credentials
- In 2019, akvola started selling MicroGas as a separate product. As a standardized component, this allows significantly faster growth. This is the component with the highest margin as this is based on proprietary technology

Growth plan going forward

- Focus on selling MicroGas to industrial wastewater plants in food & beverage through system integrators (“low hanging fruits”)
- Expansion into further industries (Oil&Gas) and adjacent applications where gas transfer is required (Oxygen, Ozone, Carbon Capture)
- Growth focused on solidifying European presence while expanding sales channels in US
- ~€500k in Government grants expected to ease Covid impact
- €0.3M in backlog and €0.6M in sales pipeline (weighted) for next 2 years

Led by an international entrepreneurial and technical management team and supported by industry veterans

MANAGEMENT

Matan Beery – Founder & CEO

- PhD Chemical Engineering, MBA
- 12 years experience with water technology
- Israeli startup DNA

Johanna Schulz – Founder & CTO

- 7 years R&D experience at leading institutes
- Research Engineer at Berlin Centre of Water
- Inventor of MicroGas

Lucas León – Founder & CFO

- 10 years experience in Water Business
- Senior financial advisor for a utility company, Gran Canaria

Mario Rizkallal – VP Sales and BD

- Director Sales Latin America, Kubota Mem.
- 7 years Sales and BD experience
- Deal-Closer and Rainmaker

ADVISORY BOARD

Bruno Steis – Chairman of the Board

- Ex-CEO at Inge AG (2009-2015, sold to BASF)
- IM at Siemens Venture Capital (1999-2008)

Lute Broens

- Founder of X-Flow (sold for $700 million to Pentair in 2012)
- Huge network in the water industry

Detlef Taprogge

- CEO at Taprogge GmbH
- Serial cleantech investor

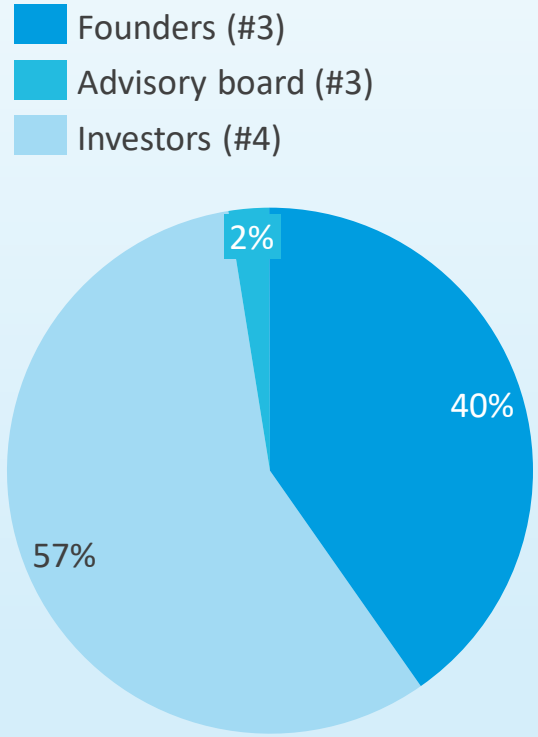
INVESTORS

CBC GROUP · High-Tech Gründerfonds · VNG · bamac VENTURES INVEST & INNOVATE

akvola seeks €4m investment to further expand production, product development and sales activities

Ownership structure

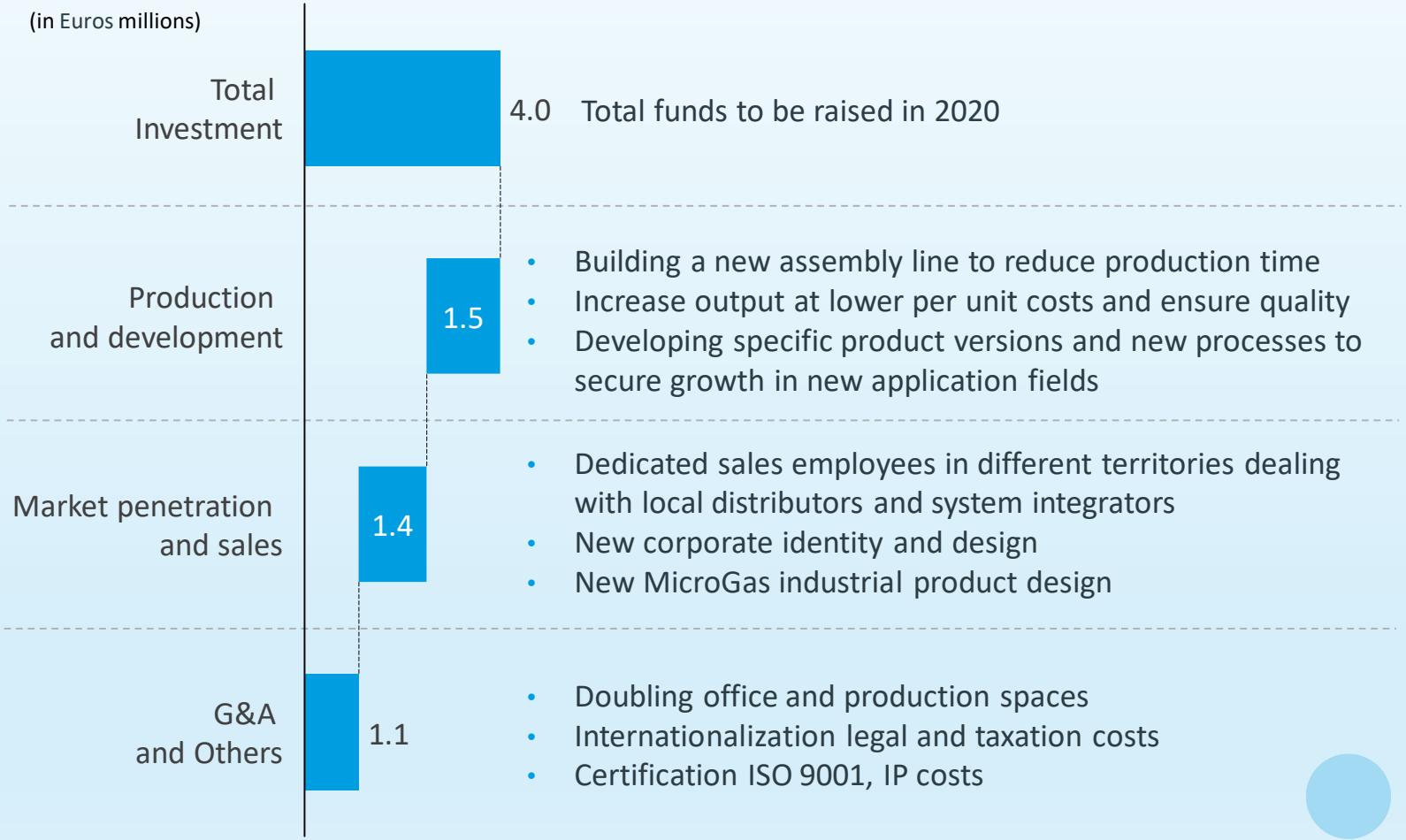
(Type of ownership and number of investors (#))



Total €2.3m funds raised to date

B-round use of funds

(in Euros millions)



Current burn rate of <€100k/month

Join us in our journey in cleaning wastewater with affordable and sustainable treatment products

- **Technology catering to hard-to-treat industrial effluents**, a challenging issue for several industries and considering **tightening regulations** linked to **environmental concerns and increasing costs**
- **Patented micro-bubble technology** to treat wastewater reliably and cost-effectively **with up to 90% lower energy consumption, 70% less CO_2,** and **up to 50% less footprint** compared to alternatives
- Large potential in the **flotation market of €1.8bn** in 2020, with a high market **growth rate of 7% CAGR,** especially where akvola product can be easily integrated into many existing plants (**retrofit**)
- **Product focused** business strategy delivering **high gross margins of 40% to 60%** with huge growth potential through new geographies and new industries (hydroponics, aquaculture, disinfection)
- Several commercial references with **blue-chip industrial end customers** and with **leading technology gatekeepers**
- **Strong management team** with global technical and entrepreneurial excellence and **governed by industry veterans**
- **Consistent growth rate of 100% from 2017**, and **2020 revenue forecasted at €385k** (after Covid-19 impact) and **expected to reach €3.3m by 2022**

akvola's product enables end customers create positive impact towards Sustainable Development Goals

Positive impact from akvola product to SDG

Positive impact from akvola product to respective SDG

- **SDG 6**: By improving water quality and wastewater management
- **SDG 12**: By reducing ecological footprint and reducing the level of disposed effluent and pollutants
- **SDG 13**: By reducing the CO2 emissions compared to conventional solution (by almost 70%)
- **SDG 14**: Protects marine and coastal ecosystems from wastewater pollution

Contact information

All communications, inquiries and requests for information relating to these materials sent by Finadvice AG should be addressed to the listed representatives below. Under no circumstances should akvola, its affiliates or any of its management, officers, directors or employees be contacted directly

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