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Investment Teaser

August 2024

Problem

Industrial **biotech** is **too reliant on sugar** as a feedstock

Sugars used as carbon & energy sources for almost all fermentation processes used in industrial biotech

Arable land must provide enough food and feed for a growing population, and driven by the energy transition, now more feedstock for biotech

Geopolitics and the climate crisis will compound volume and price volatility for agricultural commodities

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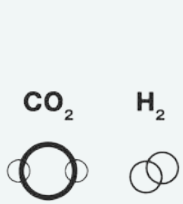
Solution

(R)evolve™ fermentation platform

CO_2 H_2



Water, oxygen, ammonia & minerals salts

Product purification

Use **CO_2** and **hydrogen** as feedstocks **instead of sugar**

Sugar replaced with carbon dioxide and hydrogen as carbon and energy source for fermentation

First product, Proton™, is a protein rich ingredient for applications in food, animal feed and beyond.

More products in pipeline!

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Why now?

The **energy transition** unlocks high volume and low cost **CO_2 & hydrogen at scale**

Green hydrogen coming online to fuel eFuels, green ammonia and other green chemistry

Carbon capture being deployed, making it easier and cheaper to access large volumes of pure CO_2

Power-to-X projects being deployed to exploit plentiful renewable energy

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At **aerbio** we harness the **power of microbiology** to transform simple molecules into **high-value sustainable products**, with **no reliance on fossil fuels** or **arable land**...

...Keep reading if you want to join our journey through investing in our Q4 2024 Series A

An investment in aerbio is an investment in...

1. **A novel, disrupting technology with huge barriers to entry:**
An investment in Aerbio is an investment in a revolutionary company that has developed a technology allowing sustainable production of feed, food and other valuable ingredients. We have proven we can scale the technology of producing protein from CO_2 and hydrogen; we have strong partnerships with leading players in our value chain, and we have patented our technology making already significant barriers-to-enter even higher.

2. **Sustainable protein at its extreme:**
An investment in Aerbio is an investment in Proton™, one of the most sustainable proteins in the world. We are a company which can make a huge impact for planetary health as we can produce food without arable land. We just need carbon dioxide, renewable energy and water, and all present in abundance.

3. **Platform with vast market potential beyond protein:**
An investment in Aerbio is an investment into a company offering a true platform technology. The first addressable market is single cell protein market, in itself representing >€30 bn market opportunity, but we see significant opportunities to disrupt the entire >€500 bn industrial biotechnology industry.

4. **Proven people:**
An investment in Aerbio is an investment in some of the leading scientists within gas fermentation, paired with excellent leadership with a proven track-record, and supported by a board of directors and advisors including some of the most prominent industry leaders within their respective fields, covering the entire value chain from R&D to formulation and branding.

5. **A highly attractive business model paving the way for potential IPO within 3-4 years:**
An investment in Aerbio is an investment in a company for which we foresee vast growth, with an attractive business model that once we are in full operation mode is expected to offer high margins and high return on investment capital, making an IPO one obvious potential exit opportunity for its owners, within the next 3-4 years.

Sugar-free: the future of biotech

Total addressable market

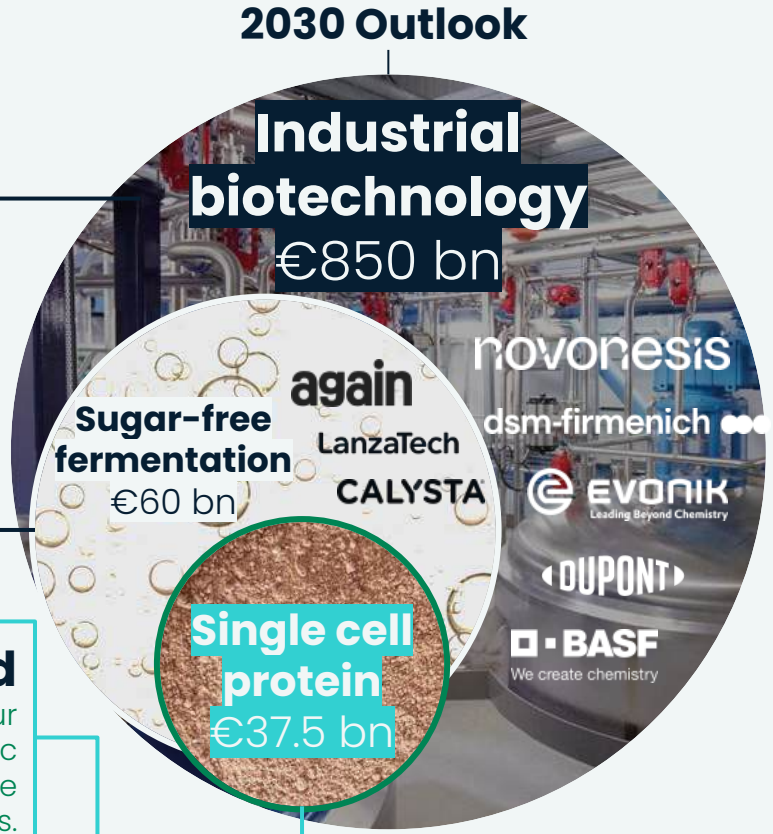
€500 bn market, set to grow at a 10% CAGR. Includes biofuels, biochemicals, bioplastics, enzymes and many other fermentation-derived product.

Serviceable available market

Unlocking greater feedstock security and process economics, sugar-free is the future of fermentation. With methane & anaerobic gas fermentation at commercial scale, and a new era of feedstocks scaling, we anticipate that >5% of the industry will run without sugar by 2030.

Beachhead

Within sugar-free fermentation, SCP is our beachhead due both techno-economic viability and huge market demand for scalable and sustainable protein sources.



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Protein concentrates market: snapshot

Proton™ targets a range of huge markets…

- Demand for protein-rich products will double by 2050 and carbon intensity of all food is becoming increasingly scrutinized
- Initially focusing on the animal nutrition industry, Proton™ helps close the gap as a primary protein ingredient for high-performance animal diets
- Higher margin food applications are also being explored , as the industry is becoming increasingly receptive to single cell protein

	Aquafeed	Food ingredients	Starter Feeds	Pet Food
Total Addressable Market in million mT	5.0 (5+% CAGR)	2.0 (5% CAGR)	1.5 (2-5% CAGR)	2.0 (2-5% CAGR)
Serviceable Market in million mT	1.0	0.2	0.15	0.2

and outcompetes other protein ingredients.

- Proton™ is priced competitively against sustainable alternatives on nutritional basis - and will gain market share from availability of supply (all year round) and quality consistency once produced at full scale
- Protein level of Proton™ is 69% with an optimized amino acid profile, which is a comparable nutritional profile to industry gold standard fishmeal and outperforms soy protein concentrate (SPC)

	Protein content	Pricing (2030, €k / ton)	Nutritional profile	Share (2022)	Sustain-ability
Proton	69%	2.1 3.0 (0.0 – 4.5)		-	Great
Fishmeal	64%	1.7 2.6 (0.0 – 4.5)		37%	Mixed
Brazilian (BR) SPC	60%	1.4 2.7 (0.0 – 4.5)		60%	Bad
Brazil deforest-free SPC	60%	1.8 3.3 (0.0 – 4.5)		<1%	Okay
EU SPC	60%	2.1 3.8 (0.0 – 4.5)		<1%	Great
Insect meal	50%	1.9 4.1 (0.0 – 4.5)		<1%	Okay

Sales Price · Nutritional Price

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Sugar-free competition:

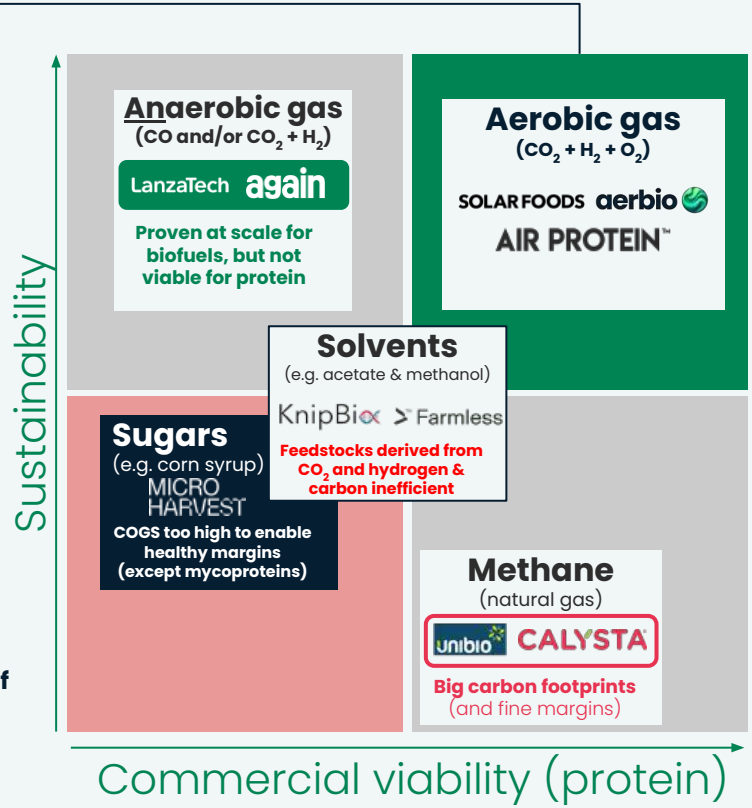
Leading the charge for SCP production:

- **Superior process economics:** for protein production aerobic gas fermentation outcompetes systems using sugar, solvents or methanes as feedstocks, due inherent carbon and energy efficient of biology
- **We're leading a hot, emerging industry:** most notably Solar Foods, who have also successfully commissioned a pilot plants and are launching food products as well as a handful of other direct competitors
- **Our focus on improving economies of scale** unlocks the ability to sell into higher volume (but more price sensitive) markets like aquafeed, unlike other direct competitors

Comparable	Funding to date	Production scale
SOLAR FOODS	>€100 M	Pilot
AIR PROTEIN™	>€100 M	Pilot
CALYSTA	>€100 M	Commercial
again	>€50 M	Pilot
LanzaTech	>€500 M	Commercial

Well funded peers at similar stage of development

Strong validation of sugar-free fermentation



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Proton™: our single cell protein

Nutritional superiority

70% protein with **optimized amino acid profile**, with comparable nutritional profile to animal proteins, making it **ideal for animal or human nutrition**

Ultra sustainable & future proof protein

SUSTAINABLE DEVELOPMENT GOALS

Up to 90% less carbon intensity compared to conventional proteins

No arable land needed no exposure to droughts or geopolitical risk

Year-round supply of price-stable and price-competitive protein

Secure & stable production

Provides **security**, **transparency** & **traceability** to customers due to year-round weather-independent production

Strong product-market fit

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Business model

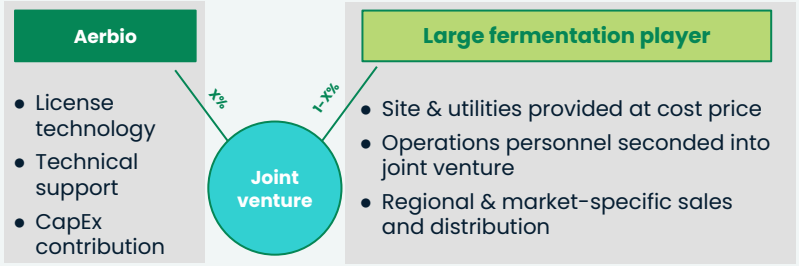
Short term

Own & operate model (preferred)

- Structured as manufacturing Special Purpose Vehicle to take on equity investment from strategic partners, with plan to leverage debt to reduce CapEx
- "Power-to-X" play - more upside, but also more CapEx intensive

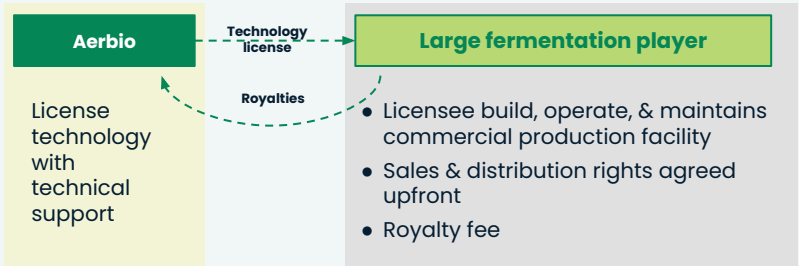
Mid term

Joint Venture Model (if necessary)



Long term

Licensing opportunity



- We plan to pursue an **asset light** business model, through initial **joint ventures (JV)** and/or **licensing**
- The areas where industry biotech produces at largest scales are suitable for feedstock sourcing with **high interest from potential partners**, making this plan realistic
- Revenue generated initially via JV or fully owned commercial facilities, with revenue from **licensing fees from future plants providing recurring revenue**
- In addition to the primary target market for Proton™, a **diversified sales book** for single cell protein is foreseen, with applications across multiple **product categories and markets in feed and food;**
- The potential of the **(R)evolve™ technology platform is likely to result in several other higher margin non-protein products**. The same model will be adopted here.

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Traction: our partners & progress

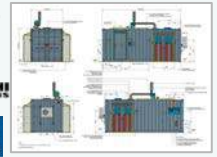
Strong co-development partners

Proven technology

R&D | Nottingham, UK

- **Advanced modelling capabilities**: Process development setup enables high-fidelity simulation to guide scale-up and process optimisation
- **Validated high productivity:** Lab and pilot validation shows 70% higher productivity than any other microbes described in academic or patent literature, with further productivity improvement upside planned

Mobile prototype unit | UK & NL



- **Containerised version of (R)evolve™ technology**, capable of validating real-world sources of CO_2 & H_2
- **Successfully used to validate CCS-grade CO_2** from Mitsubishi Heavy Industries' industrial pilot at Drax Power Group's Selby biomass power station

Pilot operations | Geleen, NL

- **World-first pilot scale production facility** for single cell protein produced via **aerobic** gas fermentation
- **Consistent and safe performance:** Continuous high level of productivity for months at a time, whilst maintaining the highest production safety standards

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Scale-up roadmap

	Key deliverable	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Lab-Scale Production	Initial process validation	✔ Continuous improvement & platform expansion									
Pilot Plant (PP)	Process & product validation	✔ Small-scale production for product & application development									
Demo Facility (DF)	Final technical de-risking	Design	Build	Production							
Commercial Plant 1 (CP1)	Commercial Proton™ production			Design	Build	Production					
Commercial Plant 2+	Production of Proton™ and new products						Build	Production			

Demonstration Facility (DF)

The main use of funds from our Series A will be the DF, which will:

- Demonstrate full techno-economic viability
- Have a total installed cost ofc. €23M (Class IV cost estimate)
- Have final decision on shortlisted sites made in early Q4 2024

Commercial Plants

Following completion of the DF, commercial plants will be rolled out as quickly as possible. Following CP1, these will be done in parallel.

We are in discussions with leading CO_2 and H_2 input providers and offtakers (e.g. animal feed producers) on key locations around the globe to allow for fast scaling. Next to interested potential direct customers, various companies have expressed interest to distribute Proton ™.

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Company overview

Exceptional leadership

Kaspar Kristiansen
CEO
FLSmidth · Waterland Private Equity Investments

Pete Rowe
CXO
Deep Branch

Rob Mansfield
CTO
Deep Branch

Guided by industry leaders

Lars Topholm
Non-exec chair
Carnegie
Head of Research

Birgitte Skadhauge
Non-exec director
Carlsberg
VP R&D

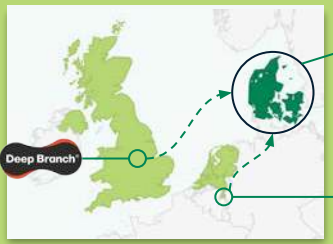
Alexander Lacik
Non-exec director
PANDORA
CEO

Cees de Jong
Chairman to Advisory Board
novonesis
Chairman

Current team

22	5x
Team members	PhDs in relevant fields

Strong foundations



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Consolidation to Denmark planned for 2025

Deep Branch

Deep Branch

R&D | Nottingham, UK

University of Nottingham
UK | CHINA | MALAYSIA

Pilot operations | Geleen, NL

Brightlands

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Forecasted financials & fundraising

	Initial Commercial Plant
Volume	192,000
Total Install Cost	€295m
WC Days	50 days
Operator FTEs	42

	EUR / mt	EURm
Sales	***2,215***	**426**
COGS	*1,505*	290
Gross profit	***711***	**137**
OpEx	*100*	19
EBITDA	***611***	**118**
Free Cash Flow	***388***	**74**

Total Install Cost	€295m
FCF	€74m
Plant Payback	**4.0 years**
NPV *(8% disc.)*	**€1,200m**
Unlevered IRR	**22%**

We expect to find project financing for the facility builds & operations

CapEx: 50-75%

Working capital: 80%

- The upcoming Series A investment round is planned to represent the final capital injection prior to an IPO that will build out of commercial scale facilities.
- Commercial plants will come online from 2028 onwards and take 4 years to ramp up, resulting in Aerbio becoming net cash flow positive by 2032 (*as shown left*)
- **Base case:** Following the commercial success demonstrated by CP1, an the following base case is modelled (illustrated right):
  - Only five commercial plants come on stream
  - No additional products beyond Proton™ commercialised
  - Potential to generate >€1 bn profit per annum within the next 15 years.
- **Bull case:** Should the next generation of product come good, we anticipate that these products will be ready for market by 2034, resulting in Aerbio producing >€2 bn profit per annum by 2035

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