Food & Bio Global SUMMIT'23
26-27 September

unibio

The U-Loop technology and the potential to improve food security

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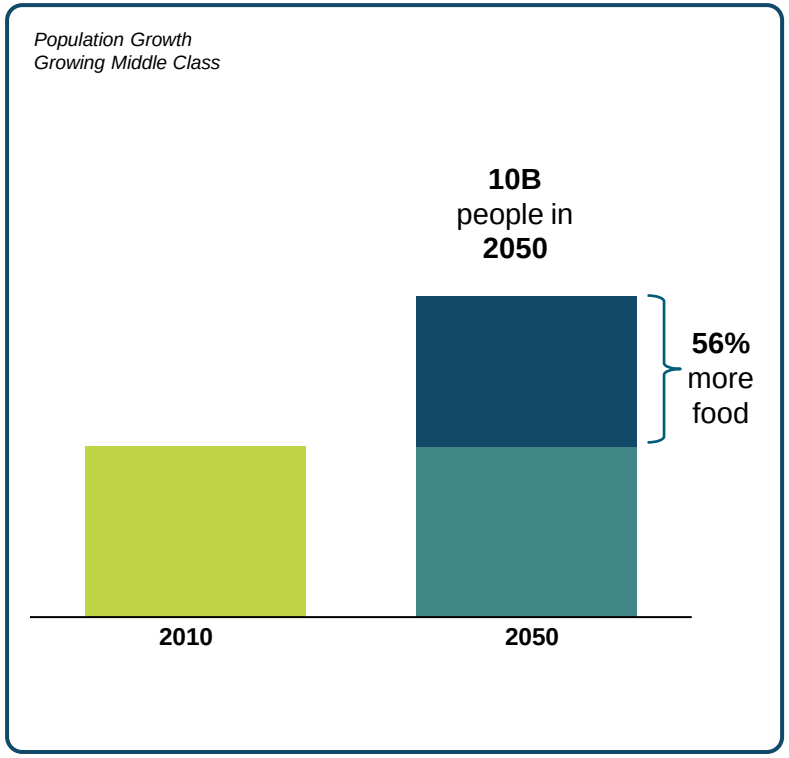
Finding a sustainable way to feed a growing world

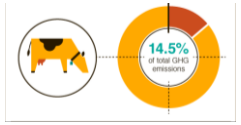
Increasing populations and a growing middle class demand more protein …



… to be achieved without deforestation, overfishing oceans, and with lower ecological footprint

Every year the world loses around 5 million hectares of forest, largely driven by agriculture

Global water requirements in 2030 expected to be 40% above current supply



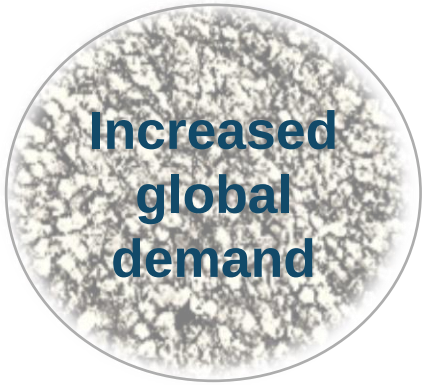
Agriculture accounts for 15% of global greenhouse gases (1)

80% of the world's fisheries are fully exploited

Increasing demand for large quantities of feed and food that is nutritious and safe to feed the world without depleting the Earth's limited resources

1) Source: World Resources Institute, World Wildlife Foundation, FAO, Food Nation Denmark, Our World in Data and UNEP.

Attaining food security – a challenge that is only increasing



What does the world need?
Protein created from an abundant and affordable resource
A whole new source of high-quality protein for a hungry world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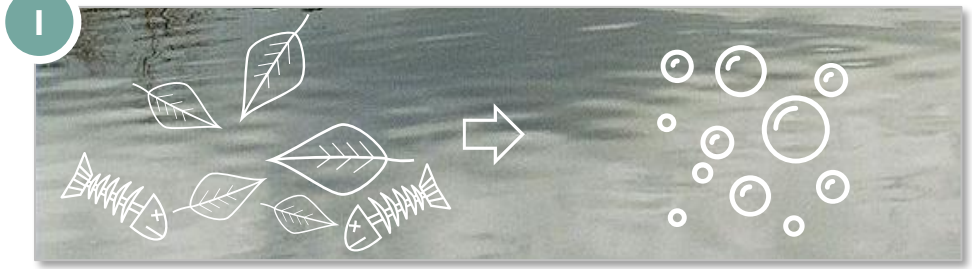
De-coupling protein production from farming and fishing

Harnessing nature's process of producing protein from methane

In lakes methane **results from decomposition** of organic matter (dead fish and plants)

I

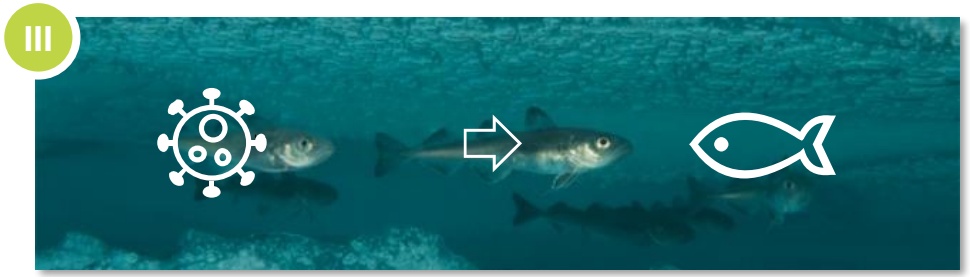


Methane is **released in the water** and then eaten by microbes

II

The microbes **become protein-rich** and are through the food chain eaten by fish

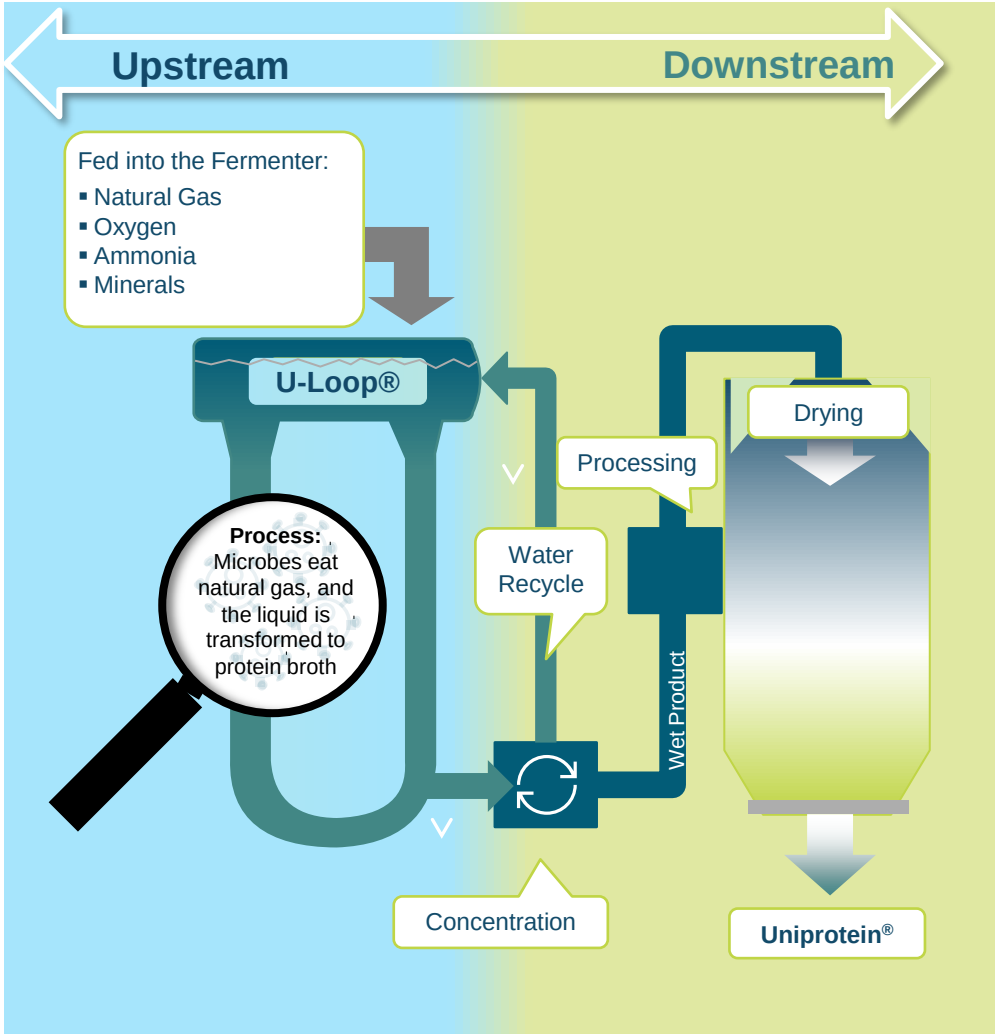
III



In nature microbes become protein-rich by eating the **methane** that comes from decaying **plant / organic material.** The microbes are eaten by fish as part of their **food-chain**

Unibio's unique technology replicates nature's process to produce alternative protein

What it looks like:
A revolutionary microbial fermentation technology



- The U-Loop® technology drives efficient conversion of methane into protein
- Vertical fermenter design significantly improving the mass transfer rate and average productivity
- Protected by 16 patent families and extensive know-how

Introducing Uniprotein® – a high-quality, fermentation-derived protein

- SCP from *Methylococcus capsulatus* biomass grown on methane
- +70% protein content
- Approved by EU for feed applications
- Compelling results from feeding trials
- Fully traceable, non-GM, long shelf life and stable production process
- Free from heavy metals, pesticides, herbicides, fertilizers, antibiotics

Uniprotein® is a good answer to a world in need

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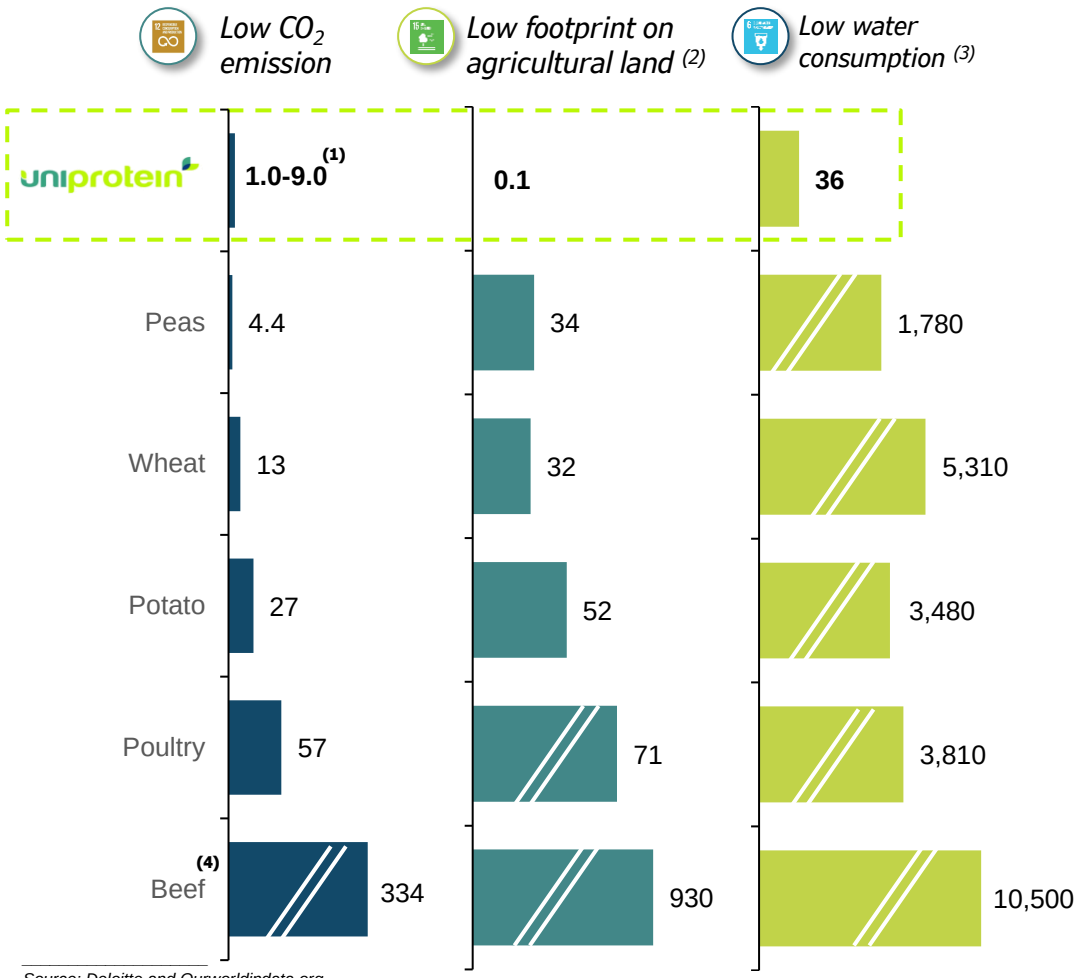
UniProtein® vs Conventional Protein Production



Source: Deloitte and Ourworldindata.org.

(1) Depending on raw material sources and technology blocks.
(2) Land use for different feed types (m^2 cropland e.g. to produce 1 kg of protein).
(3) Water consumption for different feed types (litres of water to produce 1 kg of protein).
(4) Average of beef and dairy herd.

"UniProtein® can produce unlimited supply of high-quality protein to enhance global food security"

#2 Zero Hunger

"UniProtein® supplies the world with affordable protein produced from abundant methane"

#12 Responsible Consumption and Production

"1 million tons of UniProtein® will save 18 million m^3 of water per year, or 7,200 Olympic-size swimming pools"

#14 Life below Water

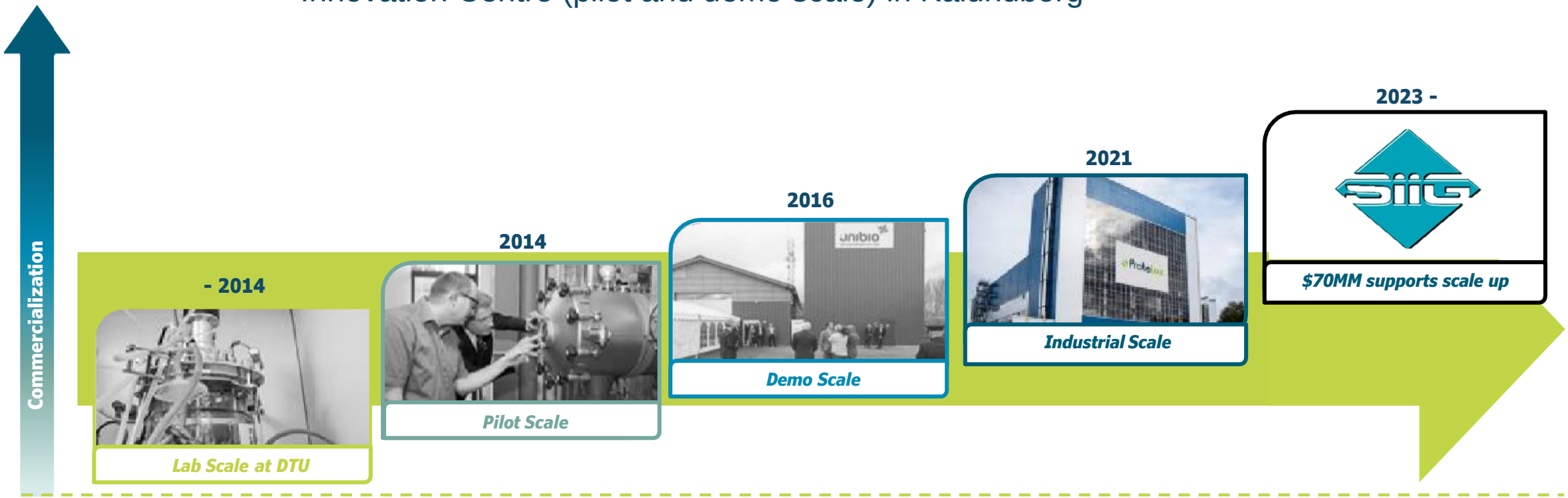
"1 million tons of UniProtein® will save ~19,500 km^2 of forest from de-forestation"

#15 Life on Land

The creation of Unibio… and more to come

Key locations:

- Head Quarter and Research Centre in Roskilde
- Innovation Centre (pilot and demo scale) in Kalundborg



What has taken us to industrial scale?

Hiring the right talents

- Ensuring the impact of the strong competencies in key positions

Fruitful collaboration with Danish universities

- Adding resources and knowhow for technology and process development

Timely scale up to pilot and demo scale

- Accelerating process development and enabling customer sampling and application trials

Participation in large international collaboration projects across EU

- Access to knowledge and augmented funding of development activities

Strong IP focus

- Protecting competitiveness and an asset of importance for investors

Delivering on increasing market demand

Today's near-term markets

Global Feed Market: 1.2bn tonnes

- **Starter Feeds** 15 mT
- **Aqua Feed** 30 mT
- **Pet Food** 39 mT

Near Term Focus Markets

- Ruminants 240 mT
- Pig feed 305 mT
- Poultry 550 mT

Global protein market of 360mT and *>30mT of Addressable Protein Market Opportunity* for Uniprotein® Today…

… tomorrow's opportunities

Food

- ✓ ***Uniprotein® shows promise in many food applications***
- ✓ ***Several interesting opportunities in exploratory stages***
- ✓ ***Demonstration scale processes have been developed***
- ✓ ***Interest already received from potential partners***

Source: Company information, US Department of Agriculture, Euromonitor, UBS, ING, Good Food Institute, BCG, Blue Horizon.

Short term – Long term strategies

Priority 1 Feed

Priority 2 Petfood

Priority 3 Food

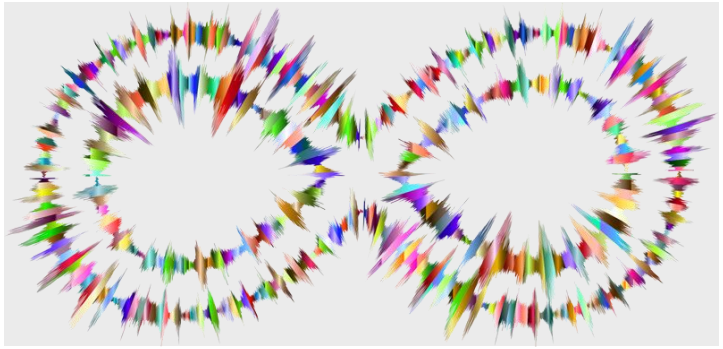
The long path to product development

Precommercial | Commercial

Ideation	Lab Proof of Concept - MVP	Pilot Scale - Prototyping	Demonstration Scale	Industrial Scale
Time required: *1 - 3mos*	*3 - 6mos*	*1 – 2yrs*	*1 – 2yrs*	*? yrs*

Regulatory / Novel Food Approval

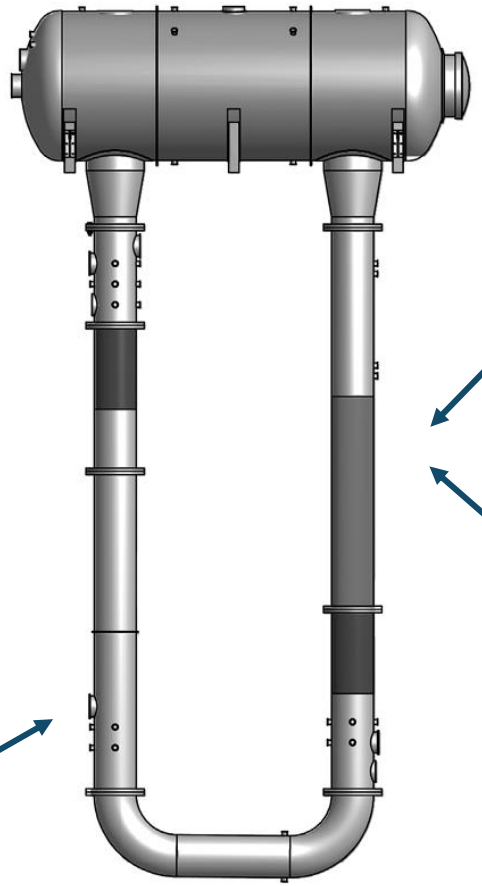
Time required:



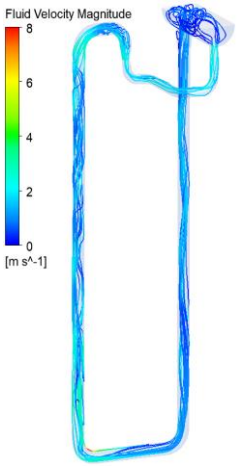
- Don't overinvest
- Work Agile
- Fail Early

The importance of the science behind

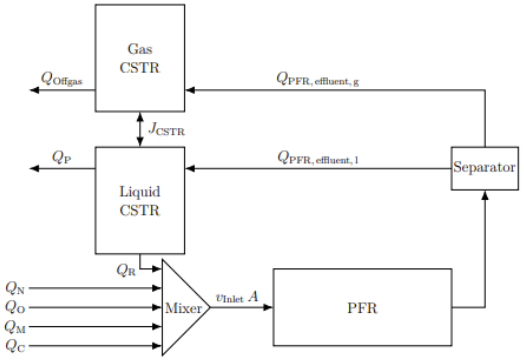
Invested in more than 20 years of research



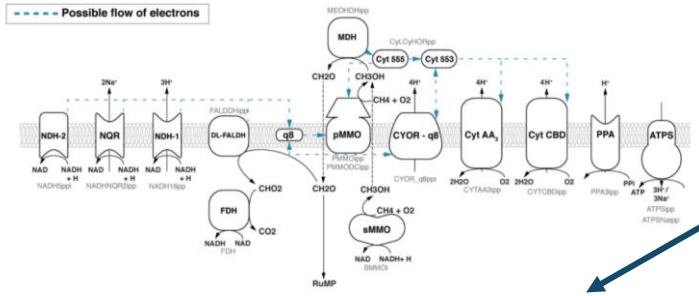
CFD



Mathematical models



Metabolic models



The importance of the science behind

Close collaboration with academia, including…

A future of creating sustainable change

Science & technology

Relentlessly improving our process and technology efficiency to produce more from less

Continuously developing DSP to fractionate our process stream into new products for human and animal nutrition

Strategic partnerships

Paving the way for global adoptions of BioSolutions with favorable regulatory pathways to commercialization through joint advocacy

Increasing our value creation by integrating with other green technologies in transformative set-ups

Transformative collaborations

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