

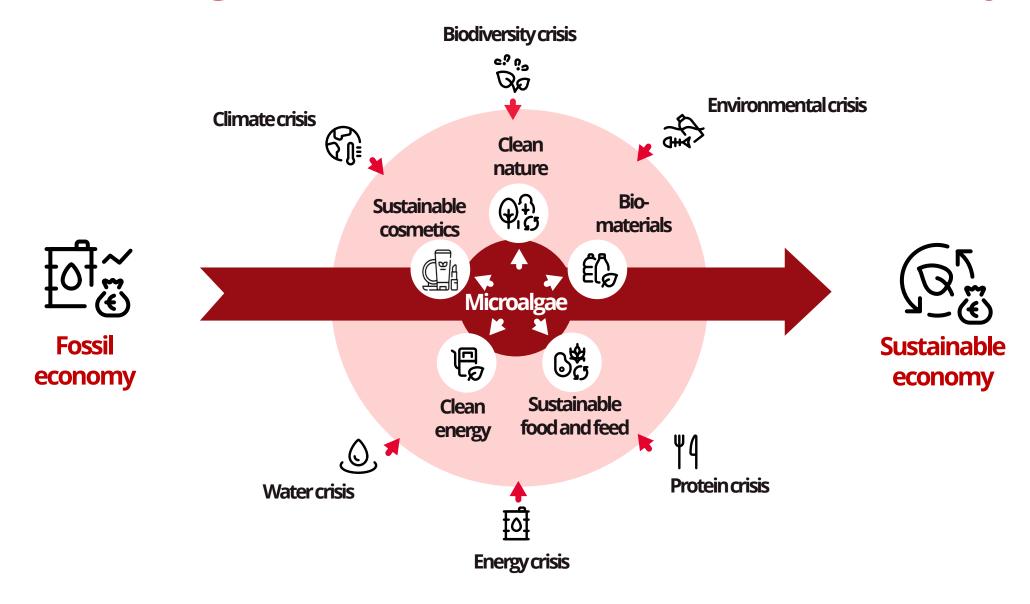
### **Bioprocess Services at DTI**

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## Microalgae for Sustainable Bioeconomy



## Microalgae section at DTI

### Customer services

#### Pilot GMO cultivation

- Validation of lighting systems for cultivation
- Validation of cultivation systems
- Flow cytometer analysis

Value chain

# R&D

### Cultivation

- PBR design and fabrication
- Sidestream valorization
- Contamination control
- ReMAPP (IFD, DK)
- ProLocAL (GUDP, DK)
- GeneBEcon (Horizon Europe, EU)
- ALGAESOL (Horizon Europe, EU)
- SOPHONSTER (ESA, EU)
- MICROFOAM (BSZ, DK)
- SEAlgaePower (SBEP, EU)

- Continuous centrifugation
- Membrane filtration
- Flocculation
- Magnetophoretic separation
- Freeze drying
- Spray drying
- Microwave drying
- Oven drying



### Harvesting

- Harvesting efficiency
- **Energy efficiency**
- Biomass quality
- ReMAPP (IFD, DK)
- ProLocAL (GUDP, DK)

### **Drying**

- Biomass/bioproduct quality
- **Energy efficiency**
- Time
- ReMAPP (IFD, DK)
- ProLocAL (GUDP, DK)

- Biomass extrussion
- ScCO<sub>2</sub> extraction (lipids and pigments)
- Short-path distillation
- Protein and EPS extraction
- Removal of off-flavours



### Biomass processing

- Improve bioavailability
- Biomolecules fractionation
- Refining
- MAGIC (BSZ, DK)
- MICROFOAM (BSZ, DK)
- PIGMENT (BSZ, DK)
- ReMAPP (IFD, DK)
- ProLocAL (GUDP, DK)
- SEAlgaePower (SBEP, EU)

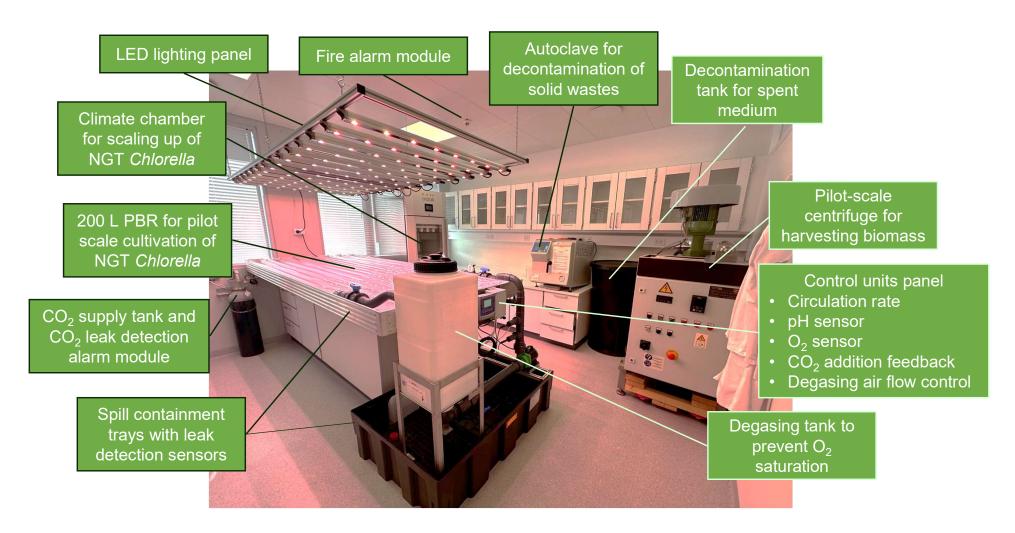
Food, feed, nutraceuticals and biomaterials development



### Product development

- Food ingredients
- Feed (poultry, aquaculture)
- Nutraceuticals
- MAGIC (BSZ, DK)
- ReMAPP (IFD, DK)
- ProLocAL (GUDP, DK)
- PIGMENT (BSZ, DK)
- SEAlgaePower (SBEP, EU)

## Pilot facility for GMO microalgae



In this facility, we are capable of handling cultures from 50 mL to 200 L GMO microalgae cultivation

### Pilot Plant Biorefining and Biofermentation (food grade)



INSTITUT



Multiple process units available at one spot

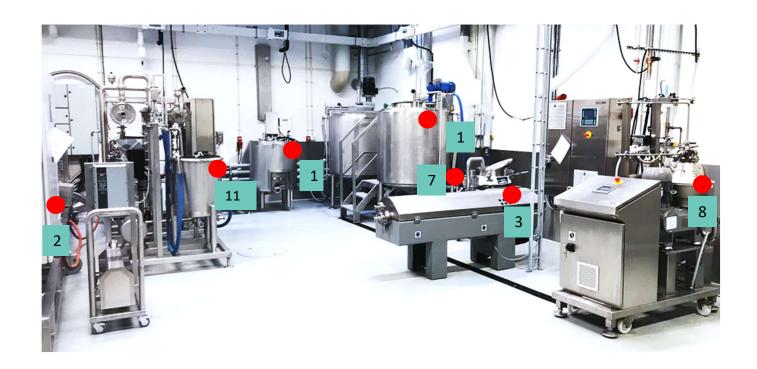
All units are adaptable to fit customized process

Certified for food production

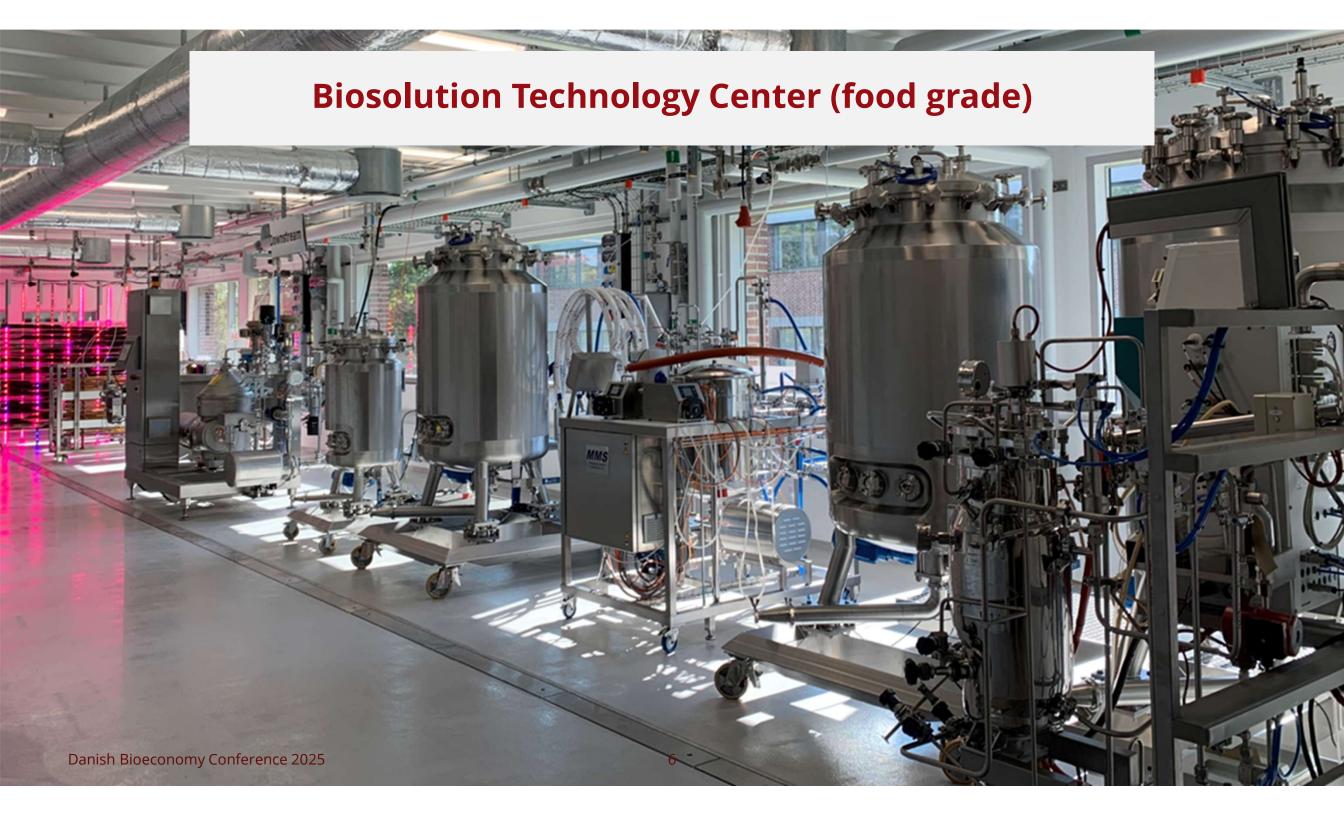


Process developed and adapted to every biomass

Minimal waste



Stirred tanks (100 – 1000 l	_) <1
Heat exchanger	2
Decanter centrifuge	3
Wet mill	4
Spray dryer	<b>5</b>
Decanter centrifuge	<b>6</b>
Vibrating sieve	7
Clarifier centrifuge	8
Column chromatography	9
Dry fractionation unit	(11
Membrane filtration	10
SANI membrane	(12
Fermenter (1 – 2000 L)	13
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### Feel free to contact us



Microalgae Expertise



Biosolutions Technology Center



Biofermentation & Biorefining