AARHUS UNIVERSITY CENTRE FOR CIRCULAR BIOECONOMY

CBIO WEBINAR, 1 JULY 2020

PLEASE TURN OFF YOUR MIKE AND CAMERA – ASK QUESTIONS ON CHAT

UFFE JØRGENSEN
SENIOR RESEARCHER, HEAD OF CENTRE



THE MISSION OF CBIO IN THE GREEN TRANSITION OF OUR SOCIETY

UFFE JØRGENSEN, DIRECTOR CBIO

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OUR SOCIETIES HAVE USED THE LAST YEARS TO AGREE ON THE GOALS

DIFFERENT GOALS FOR DIFFERENT SECTORS IN DK

SOME ARE PUBLIC GOALS SOME PRIVATE SECTOR GOALS

The energy sector: 50% fossil fuel reduction by 2030 and fossil free in 2050

The farming sector: 30-50% GHG reduction by 2030 and GHG neutral by 2050

The waste sector: All municipal waste sorted by 2024, and the sector climate neutral in 2030

The seas: a vast potential for harvesting unexploited resources – EU WFD & Havplan Danmark

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NOW IS TIME FOR ACTION – GREEN TRANSITION

GREEN TRANSITION
DENMARK

BUSINESSES SET TO BE KEY PLAYERS IN THE GREEN TRANSITION

European Bioeconomy Alliance

Green Deal

Financing the green transition

Featured in Accelerating clean energy development through test and demonstration

European Commission

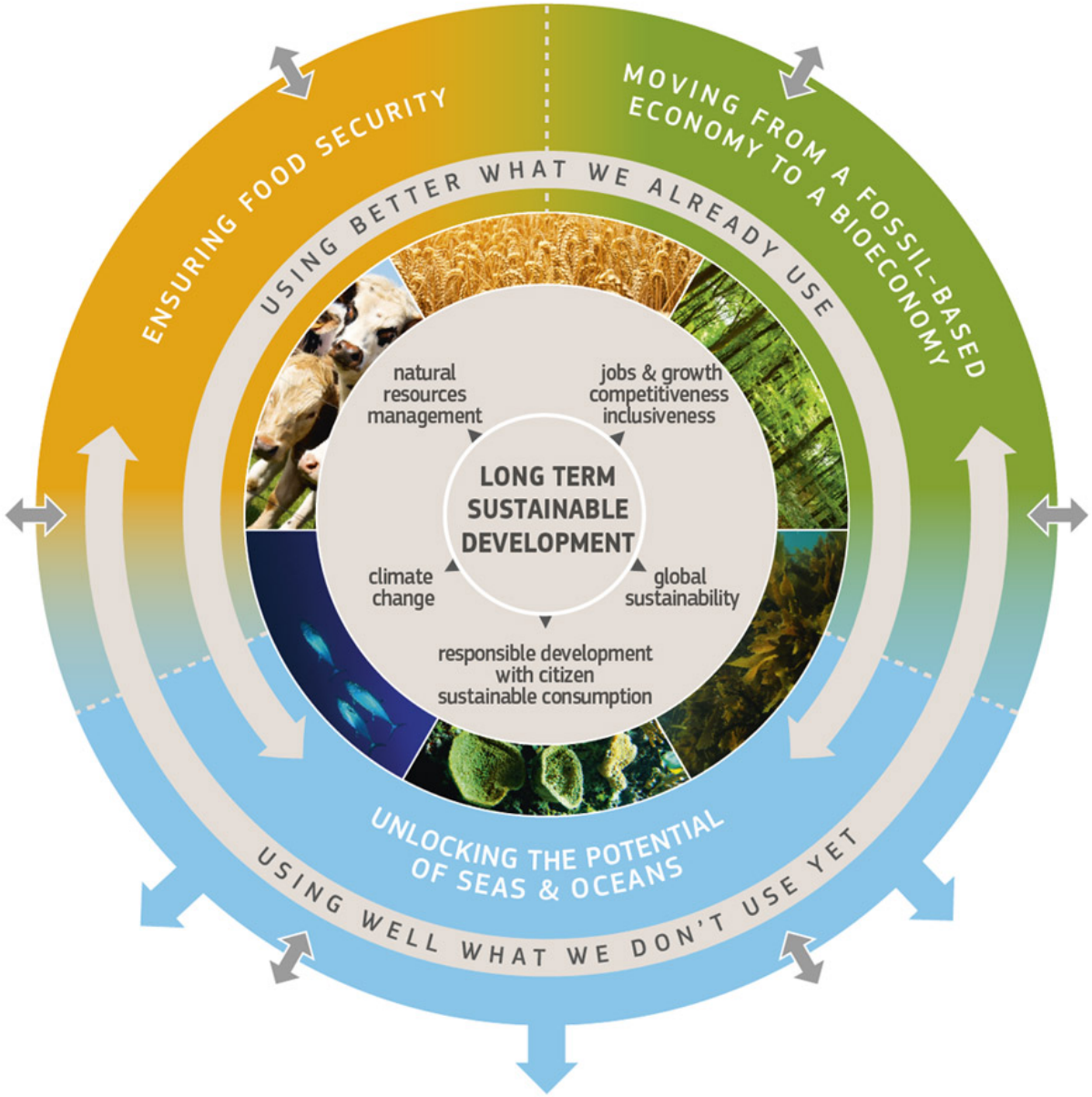
Investing in a Climate-Neutr
and Circular Econo
The European C

Research and Innovation Solutions Aiding the Green Transition

Research and innovation targeting the green transition that contribute to scientific/innovative breakthroughs enabling solutions that contribute to solve challenges for climate, the environment and nature in Denmark and globally.

GREEN DEAL

THE EU BIOECONOMY STRATEGY[1]: RESEARCH AND INNOVATION IS KEY TO UNLOCK THE FULL POTENTIAL OF THE BIOECONOMY



1: The EU Commission 2018: COM/2018/673 final

CBIO'S CIRCULAR BIOECONOMIC RESEARCH IS ORGANIZED AROUND 7 PILLARS

Production and management of agricultural biomass
Senior Researcher Uffe Jørgensen
Department of Agroecology

Environmental credibility, economic feasibility and social acceptance
Professor Marianne Thomsen
Department of Environmental Science

Production of marine biomass
Senior Researcher Annette Bruhn
Department of Bioscience

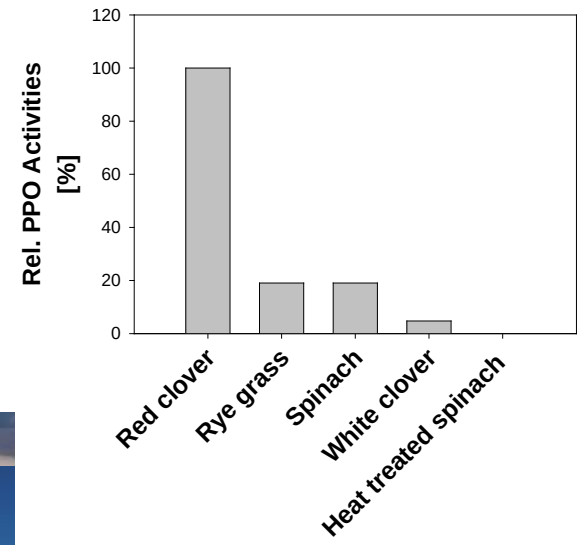
Utilization of biomass for food, ingredients and high-value products
Associate Professor Trine Dalsgaard
Department of Food Science

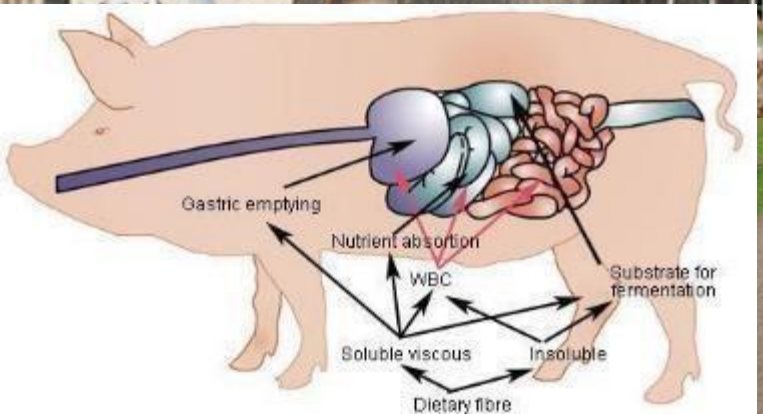
Biorefining, conversion and recycling
Assistant Professor Morten Ambye-Jensen
Department of Engineering

Feeds, by-products and feed ingredients
Professor Søren Krogh Jensen
Department of Animal Science

Biobased materials and bio-oils
Associate Professor Marianne Glasius
Department of Chemistry

THE BASIC CBIO MISSION IS TO COUPLE UNIQUE RESEARCH PLATFORMS WITHIN THE UNIVERSITY

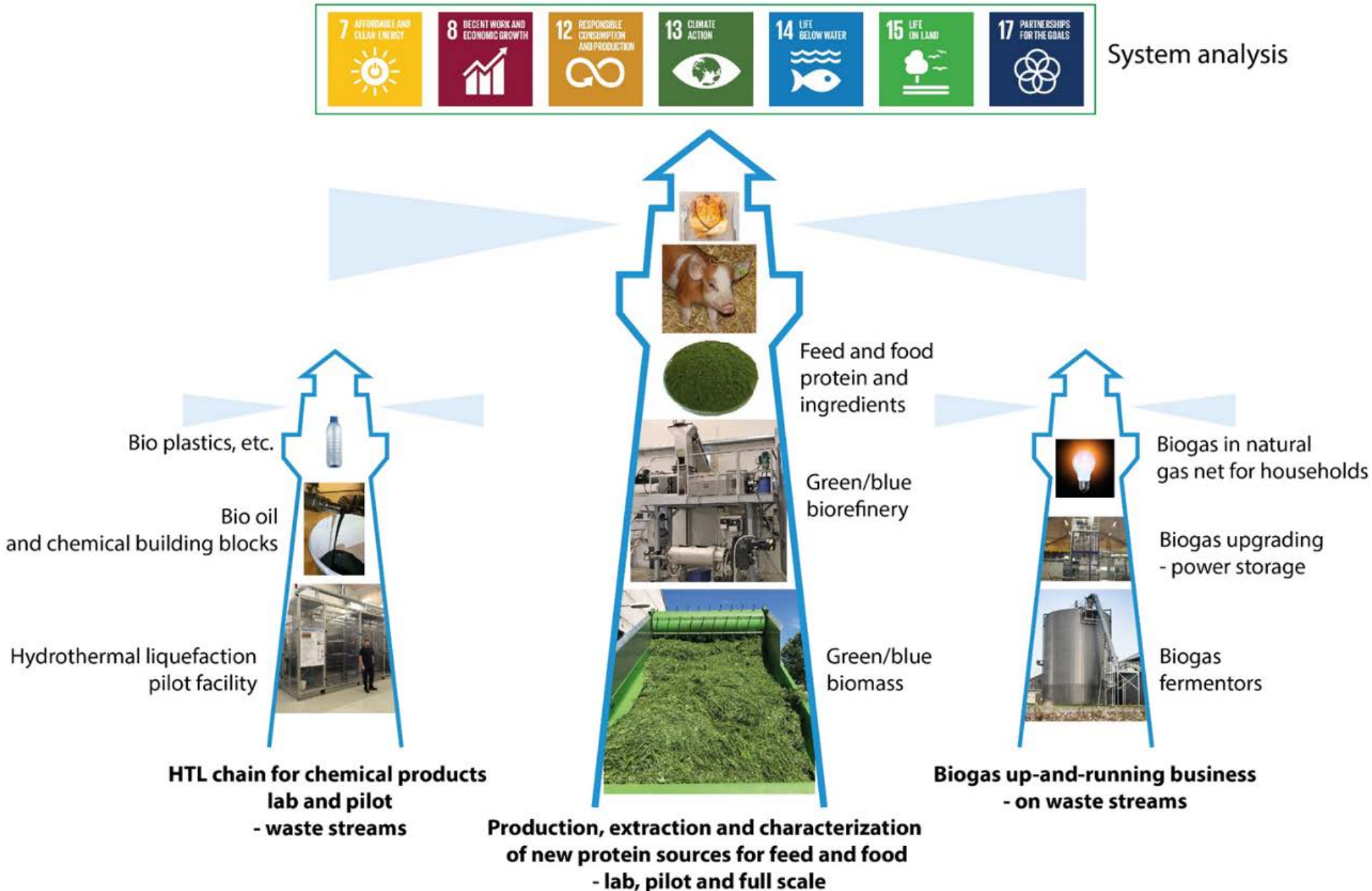




CBIO STRATEGIC MISSION

To boost research along the production circle of sustainable biomass supply, conversion, use and recycling in order to improve resource efficiency and reduce environmental impacts of bioproducts

CBIO LIGHTHOUSES DECIDES OUR MAJOR R&D FOCUS



AU DEMO-PLANT FOR GREEN BIOREFINERY NOW PAVES THE WAY FOR MARKET INTRODUCTION

Supported by public funding, and Arla, Danish Crown, DLG & DLF

GO-GRASS

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gudp

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement **N° 862674**

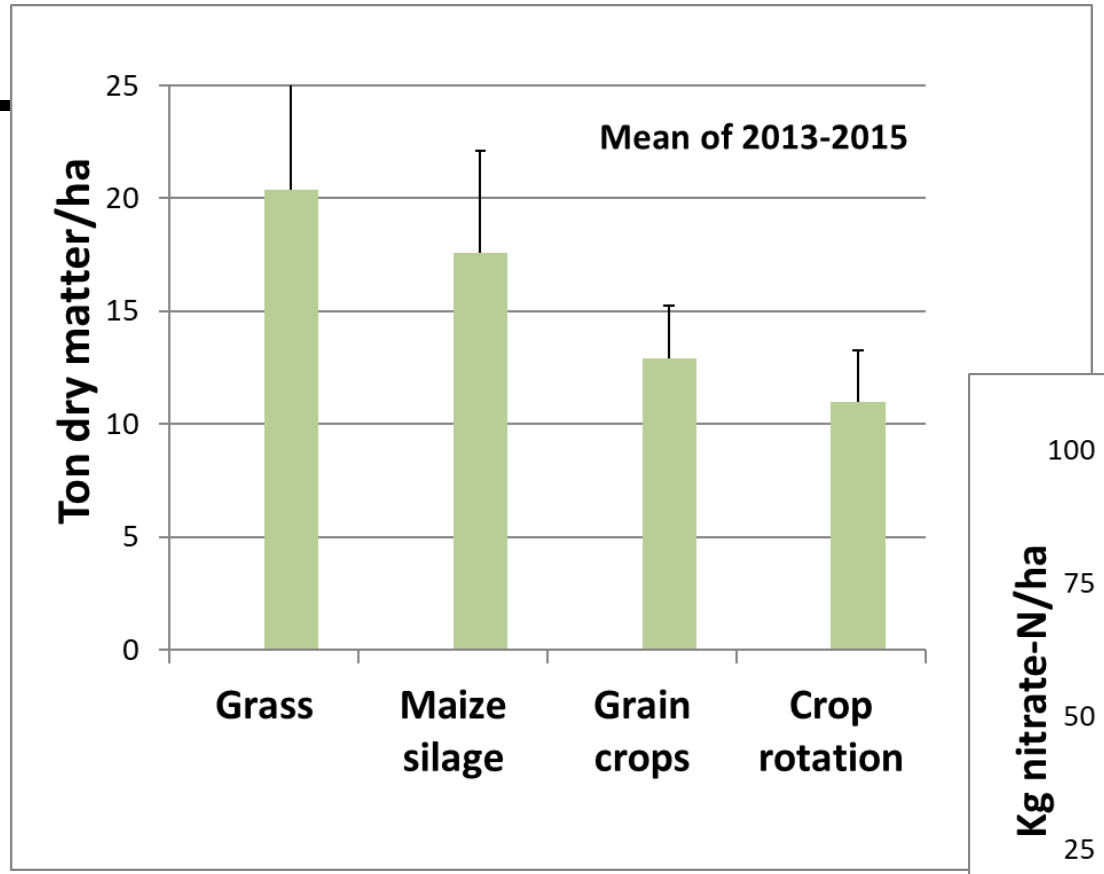
Interreg
Öresund-Kattegat-Skagerrak
European Regional Development Fund

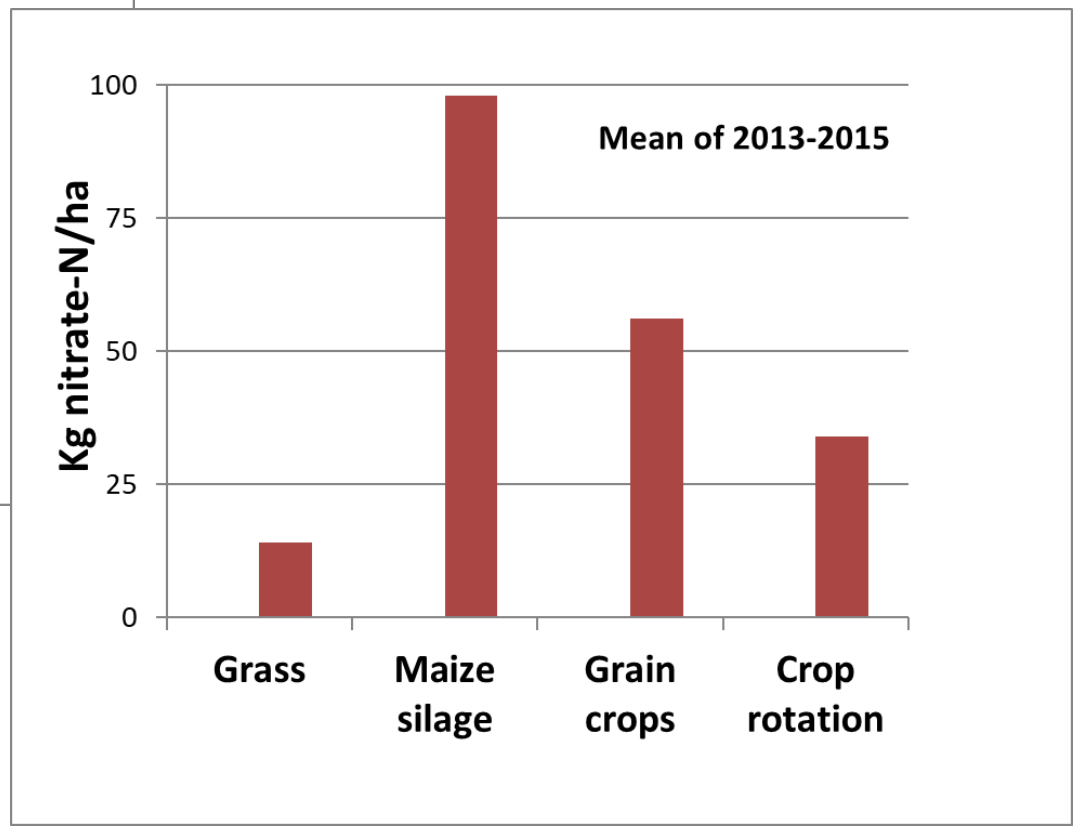
EUROPEAN UNION

Green Valleys

FARMERS CAN DOUBLE BIOMASS PRODUCTION

and halve nitrate leaching





Manevski et al., 2017; 2018

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BLUE BIOMASS WILL ALSO BE TREATED IN THE BIOREFINERY PLATFORM

- SeaSus-Protein – Biorefined seaweed – A sustainable protein source for functional foods
- The project aims to develop 2-3 functional food proteins from Danish macroalgae
- Sea lettuce, *Saccharina latissima, Alaria esculenta,* and *Palmaria palmate*

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HTL - HYDROTHERMAL LIQUEFACTION PILOT FACILITY – FOR JETFUEL, BINDERS AND OTHER MATERIALS

HTL Basic Operating Values

Feedstock capacity 60-100 l/hr

Conversion temperature 250 - 450 °C

Conversion pressure 200-350 bar

Feedstock tested
Wheat Straw (ws)
Barley Straw (bs)
Miscanthus (ms)
Switchgrass (sg)
Poplar (pr)
Willow (wl)
DDGS (dg)
Pine
Micro algea
Sewage sludge
Lignin
.....

Patent filed on a binder material

BIOGAS: AN IMPORTANT TECHNOLOGY FOR SIDE-STREAM PROCESSING INTO GAS AND FERTILISER

Biogas fermentors from1-1.200.000 L & unique CO_2 upgrading

BIOBASED INNOVATION STUDENT CHALLENGE, EUROPE (WWW.BISC-E.EU)

BASED INNOVATION
HALLENGE EUROPE

BISC·E
Biobased Innovation
Student Challenge Europe

website of the Biobased Innovation Student Challenge Europe, BISC-E. This
students the opportunity to explorer the emerging biobased field. A national
organized in several countries, followed by a european final for the winners.

H WEBSITE

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THE GREEN TRANSITION IS HERE – AND CBIO'S MISSION IS TO APPLY OUR UNIQUE RESEARCH FACILITIES AND DISRUPTIVE IDEAS TO ACHIEVE A SUSTAINABLE & CIRCULAR BIOMASS SUPPLY AND USE

WE DO IT IN COOPERATION WITH THE SOCIETY IN A BROAD SENSE – FROM FARMERS TO INDUSTRIES – FROM NGO'S TO MINISTRIES

FOR THIS WE HAVE EMPLOYED A LOT OF TALENT!!

SEE MORE ON:
WWW.CBIO.AU.DK

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