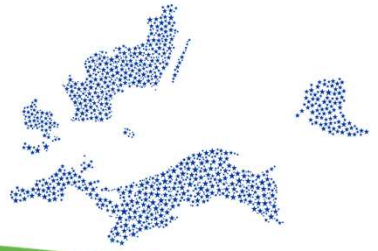
COASTAL BIOGAS

Cluster **O**n **A**naerobic digestion environmental **S**ervices and nu**T**rients remov**AL**

Introduction to the project

Kristin Sternberg
Agency for Renewable Resources
(FNR)



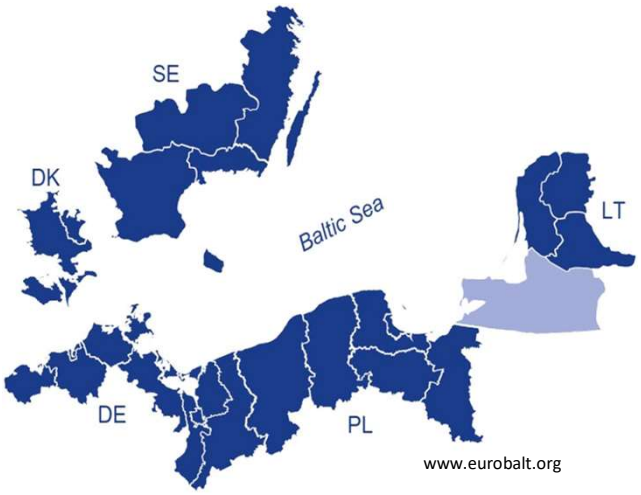
4th COASTAL Biogas Conference
09 December 2020
Online

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V., Gdańsk University of Technology, BEIC, Roskilde University, Universität Rostock, Lithuanian Energy Institute

Funded by Interreg South Baltic, European Union, European Regional Development Fund

Overview

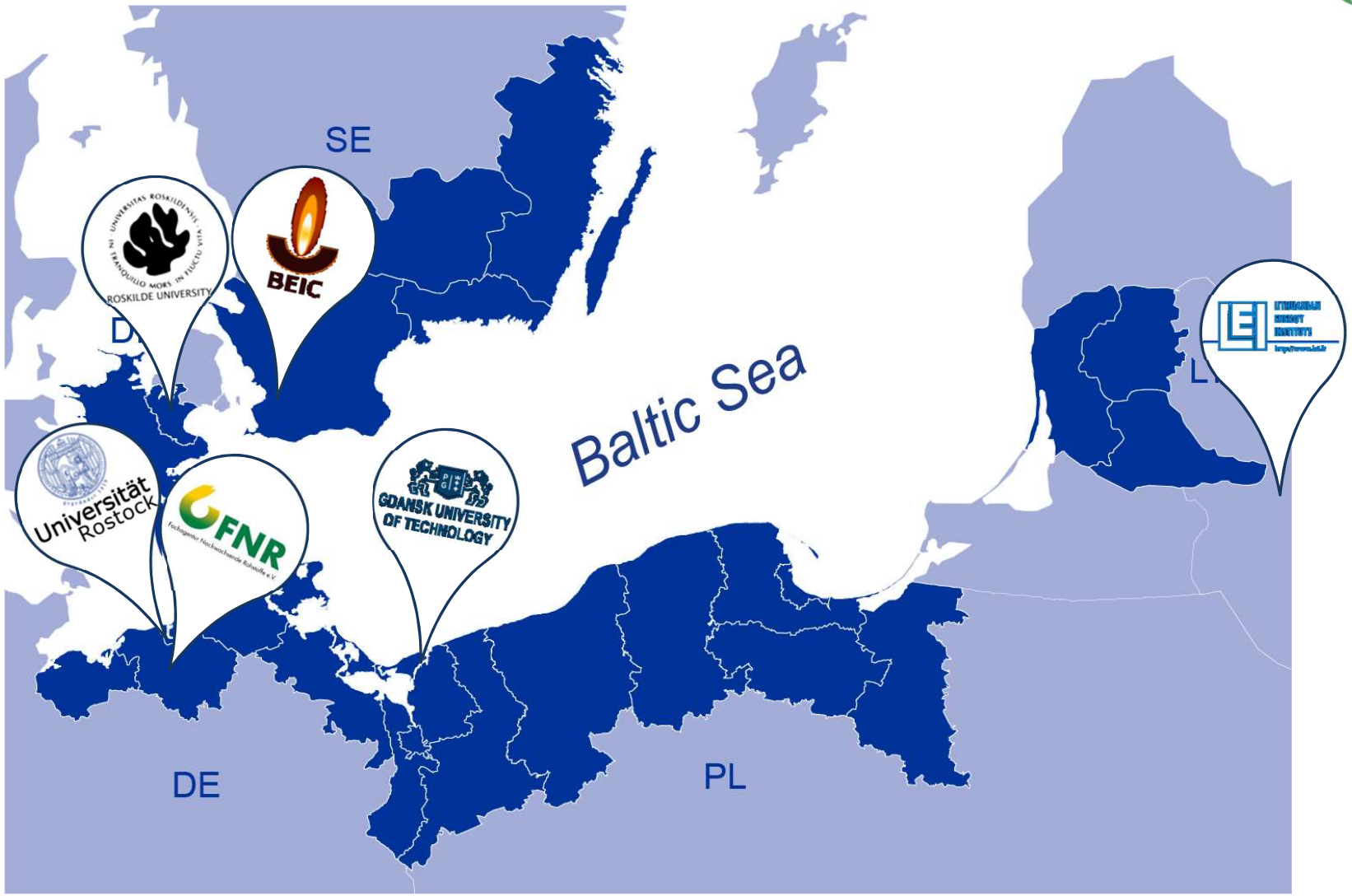
- Funding programme: Interreg South Baltic
- Project Budget: 1,575,378 €
- Duration: 36 months (07/2018 – 07/2021)
- Participation: 6 partners from 5 countries (DE, DK, LT, PL, SE)



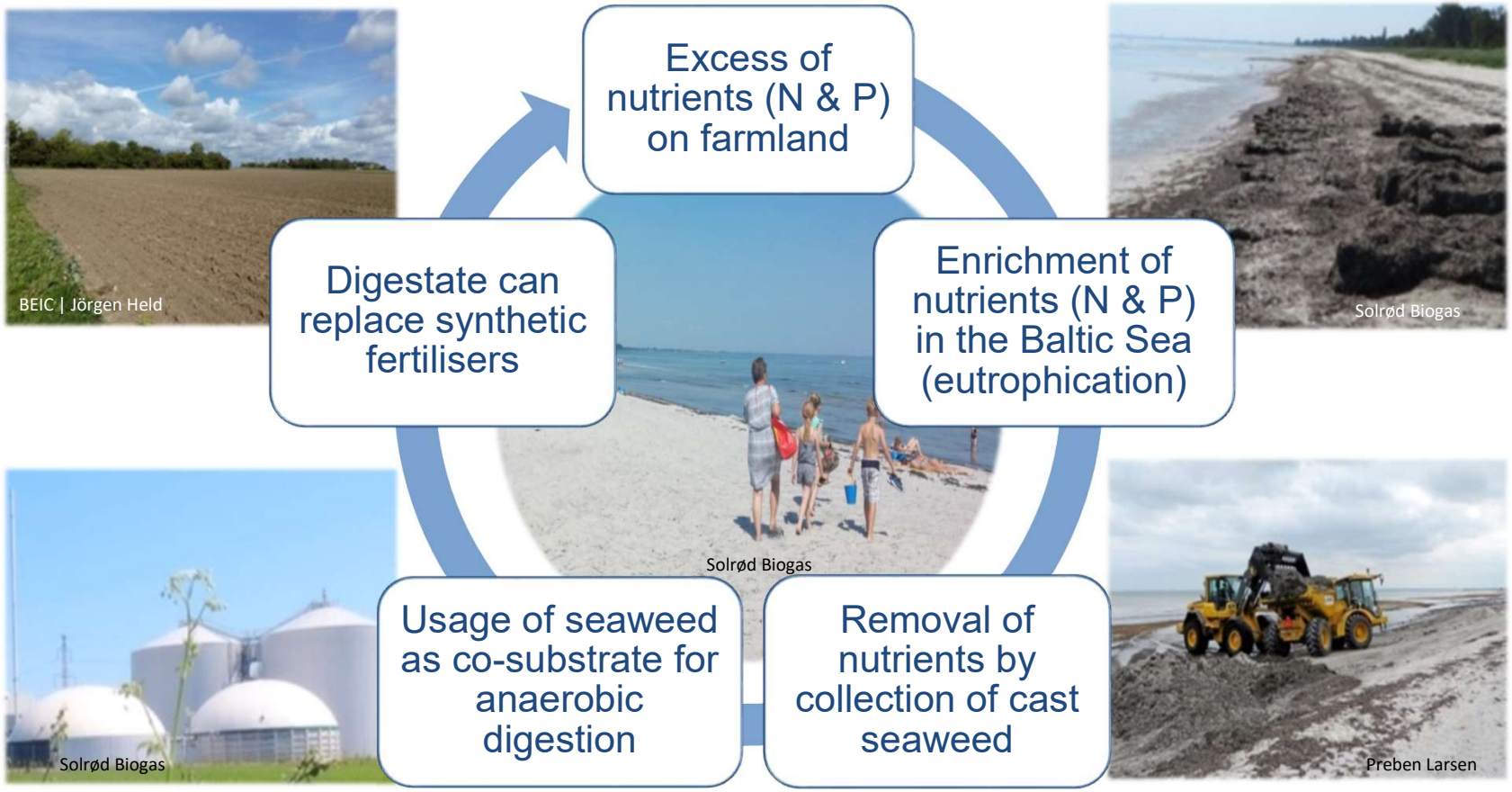
Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. GDAŃSK UNIVERSITY OF TECHNOLOGY BEIC ROSKILDE UNIVERSITY Universität Rostock LITHUANIAN ENERGY INSTITUTE

Funded by Interreg South Baltic EUROPEAN UNION European Regional Development Fund

Project Partners



What the project is about…



Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. · Gdańsk University of Technology · BEIC · Roskilde University · Universität Rostock · Lithuanian Energy Institute

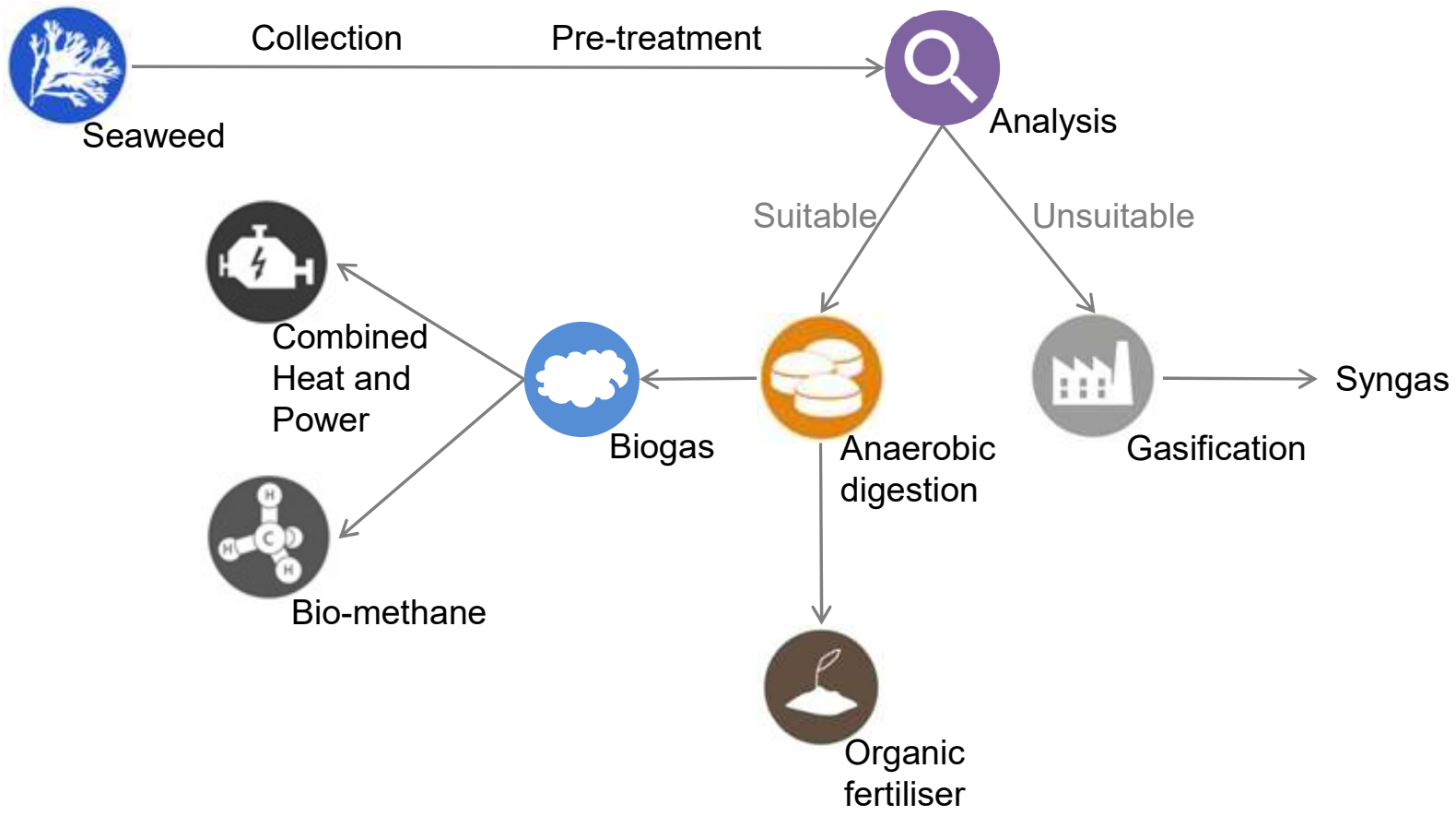
Funded by Interreg South Baltic · European Union · European Regional Development Fund

Objectives

- Removing nutrients from the Baltic Sea by collecting cast seaweed and using it as co-substrate for anaerobic digestion to counteract eutrophication
- Closing nutrient cycles by utilising the digestate as alternative to artificial fertilisers and therefore, contribute to the transition to a circular bio-economy
- Giving relevant stakeholders in South Baltic (SB) Sea area, the tools, knowledge and information about the possibilities of using cast seaweed for anaerobic digestion

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. | GDAŃSK UNIVERSITY OF TECHNOLOGY | BEIC | ROSKILDE UNIVERSITY | Universität Rostock | LITHUANIAN ENERGY INSTITUTE | Funded by Interreg South Baltic | EUROPEAN UNION | European Regional Development Fund

Technological chain



Partners
Fachagentur Nachwachsende Rohstoffe e.V.
GDAŃSK UNIVERSITY OF TECHNOLOGY
BEIC
ROSKILDE UNIVERSITY
Universität Rostock
LITHUANIAN ENERGY INSTITUTE
Funded by
Interreg South Baltic
EUROPEAN UNION
European Regional Development Fund

Collection techniques

- Different seaweed collection techniques have been tested and evaluated by LEI and RUC regarding sand content and environmental impact

Solrød Strandrens, Facebook post (23.06.2016)

Collection on the beach

Fredenslund et al. (2012)

Collection in shallow water

http://www.aquarius-systems.com/Pages/53/aquatic_weed_harvesters.aspx

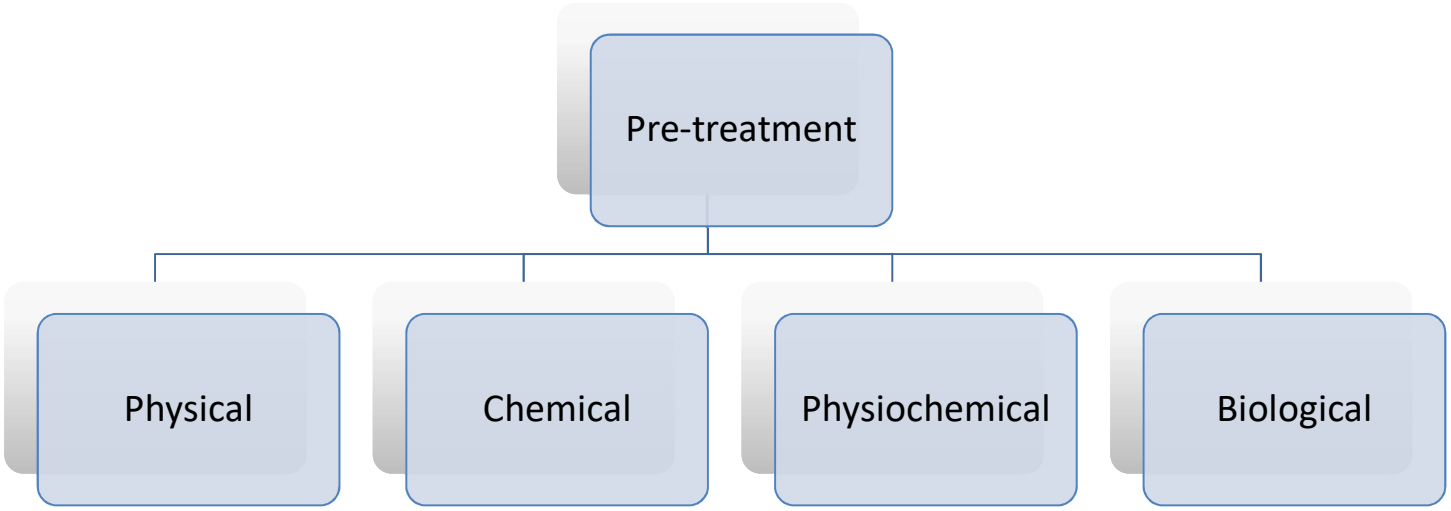
Collection in deep water

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. | Gdańsk University of Technology | BEIC | Roskilde University | Universität Rostock | Lithuanian Energy Institute

Funded by Interreg South Baltic | European Union | European Regional Development Fund

Pre-treatment

- Technologies of biomass pre-treatment are tested by GUT to improve anaerobic digestion process and methane yield



Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. GDAŃSK UNIVERSITY OF TECHNOLOGY BEIC ROSKILDE UNIVERSITY Universität Rostock LITHUANIAN ENERGY INSTITUTE
Funded by Interreg South Baltic EUROPEAN UNION European Regional Development Fund

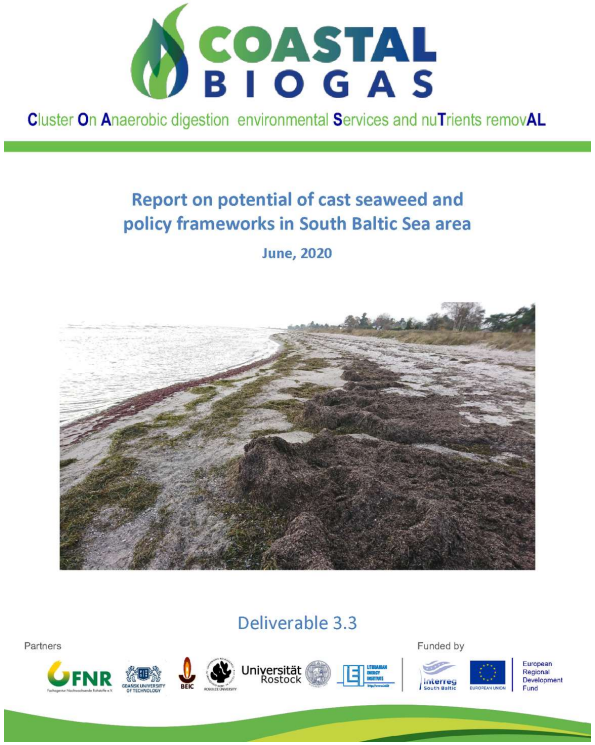
Outputs

- What have we achieved so far….

adapted from Wibke Baumgarten, FNR

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. | GDAŃSK UNIVERSITY OF TECHNOLOGY | BEIC | ROSKILDE UNIVERSITY | Universität Rostock | LITHUANIAN ENERGY INSTITUTE | Funded by Interreg South Baltic | EUROPEAN UNION | European Regional Development Fund

Reports



COASTAL Biogas report on potential and policy frameworks

COASTAL Biogas report on operating biogas facilities utilising anaerobic digestion of cast seaweed

Reports

<u>COMING SOON</u>:

COASTAL Biogas reports on

- Nutrients recycling and energy recovery from thermal gasification of digestate

- Beach cleaning and development of biogas plants based on marine substrates in the SBA


COASTAL Biogas Newsletter nr 1-2018. Problems to view it? View it in the web browser.

COASTAL BIOGAS

Welcome to the COASTAL Biogas Newsletter

COASTAL Biogas is an Interreg South Baltic Programme project, co-financed by the European Regional Development Fund and coordinated by FNR, Germany. The project focuses on the removal of nutrients from the Baltic Sea by collecting cast seaweed to counteract eutrophication. The collected seaweed will be used as co-substrate in anaerobic digestion and the digestate as a bio-fertiliser.

Project conferences and study tours

Within the project five conferences combined with study tours will be organised, one in each participating country, (SE, DK, LT, DE and PL). The first conference takes place 8 May 2019 in Malmö, Sweden followed by a study tour to Jordberga biogas facility the following day, 9 May. For information on programme and registration please visit: www.coastal-biogas.eu/events.

Cast seaweed - nuisance or resource?

There are several socio-economic benefits in using cast seaweed as a substrate for anaerobic digestion. Besides mitigating eutrophication, the inconveniences with rotten seaweed on the beach are eliminated, a high quality fuel (biogas) is produced, the digestate can replace synthetic fertilisers, job opportunities are created and a step towards the circular bio-economy is taken.

WP3 - Potential, benefits and good practice

The COSTAL Biogas project consists of five work packages. In WP3, led by Lithuanian Energy Institute, an inventory of projects related to reduced eutrophication and anaerobic (co-)digestion of cast seaweed is ongoing. The list of identified projects includes Wetland, Algae and Biogas (WAB), Advanced Technologies for Biogas Efficiency Sustainability and Transport (ATBEST),

COASTAL Biogas Newsletter

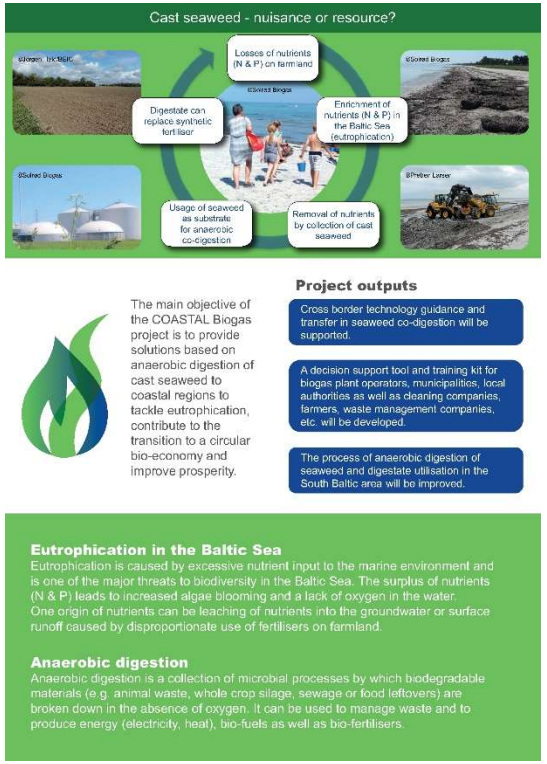
Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. | GDAŃSK UNIVERSITY OF TECHNOLOGY | BEIC | ROSKILDE UNIVERSITY | Universität Rostock | LITHUANIAN ENERGY INSTITUTE | Funded by Interreg South Baltic | EUROPEAN UNION | European Regional Development Fund

Information Kit

- Would you like to know more about the different topics COASTAL Biogas is addressing? Have a look at the project's Information Kit!

Information Kit – English, German, Polish, Swedish, Lithuanian, Danish

- Eutrophication
- Seaweed
- Biogas
- Organic fertilizer
- Further informational material online
- Educational Material

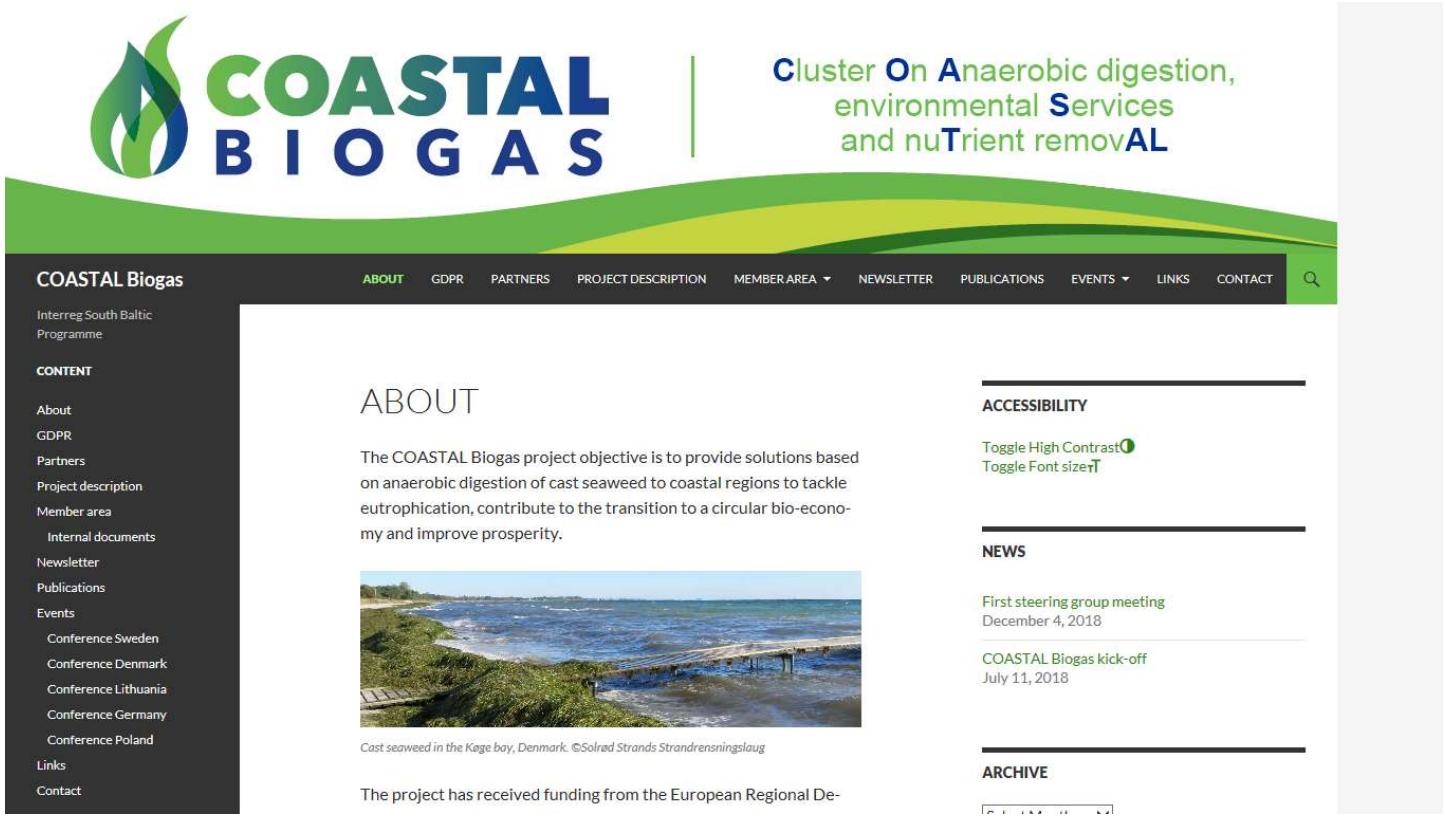


COASTAL Biogas Flyer (multilingual)

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. | GDAŃSK UNIVERSITY OF TECHNOLOGY | BEIC | ROSKILDE UNIVERSITY | Universität Rostock | LITHUANIAN ENERGY INSTITUTE

Funded by Interreg South Baltic | EUROPEAN UNION | European Regional Development Fund

www.coastal-biogas.eu



- Information
- Events (incl.summaries of previous conferences)
- Newsletter

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. | GDAŃSK UNIVERSITY OF TECHNOLOGY | BEIC | ROSKILDE UNIVERSITY | Universität Rostock | LITHUANIAN ENERGY INSTITUTE
Funded by Interreg South Baltic | EUROPEAN UNION | European Regional Development Fund

4th COASTAL Biogas Conference: Seaweed potential and policy frameworks

- **How much seaweed** is being washed ashore each year?
- How long is the **coast line** that has to be cleaned from seaweed and are those beaches accessible?
- Which regulations apply for **using seaweed for AD**?
- Which regulations apply for the utilisation of **digestate as fertilisers**?

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V. | Gdańsk University of Technology | BEIC | Roskilde University | Universität Rostock | Lithuanian Energy Institute

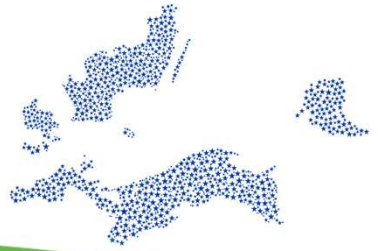
Funded by Interreg South Baltic | European Union | European Regional Development Fund

COASTAL BIOGAS

Cluster **O**n **A**naerobic digestion environmental **S**ervices and nu**T**rients remov**AL**

Thank you!

Kristin Sternberg
Agency for Renewable Resources
(FNR)



4th COASTAL Biogas Conference
09 December 2020
Online

Partners FNR Fachagentur Nachwachsende Rohstoffe e.V., Gdańsk University of Technology, BEIC, Roskilde University, Universität Rostock, Lithuanian Energy Institute

Funded by Interreg South Baltic, European Union, European Regional Development Fund