Urban Baltic Industrial Symbiosis

Per-Johan Wik, Gdansk 25 October 2019

Urban Baltic Industrial Symbiosis (UBIS)

Interreg South Baltic

2017 jan -2019 dec, 2 m€

10 partners in five countries

Sweden:	Skåne Energy Agency (LP), Sustainable Business Hub, City of Malmö, Municipality of Bjuv
Denmark:	Symbiosis Center Denmark, Kalundborg Utility
Lithuania:	Municipality of Silute, Lithuanian District Heating Association
Germany:	University of Rostock
Polen:	Gdańsk University of Technology

What is project aim?

Investment in industrial symbiosis at pilot sites

Developing tools and business models for identification of new industrial symbiosis sites

www.ubis.nu

Pilot investment in industrial symbosis

Malmö

Integration of industrial symbiosis in the planning tools in the city administration

Bjuv

Use residual heat in the local infrastructure (fokus on urban health)

Silute

Develop material recycling

Kalundborg

Architecture of water– replace ground water with surface water to the industry

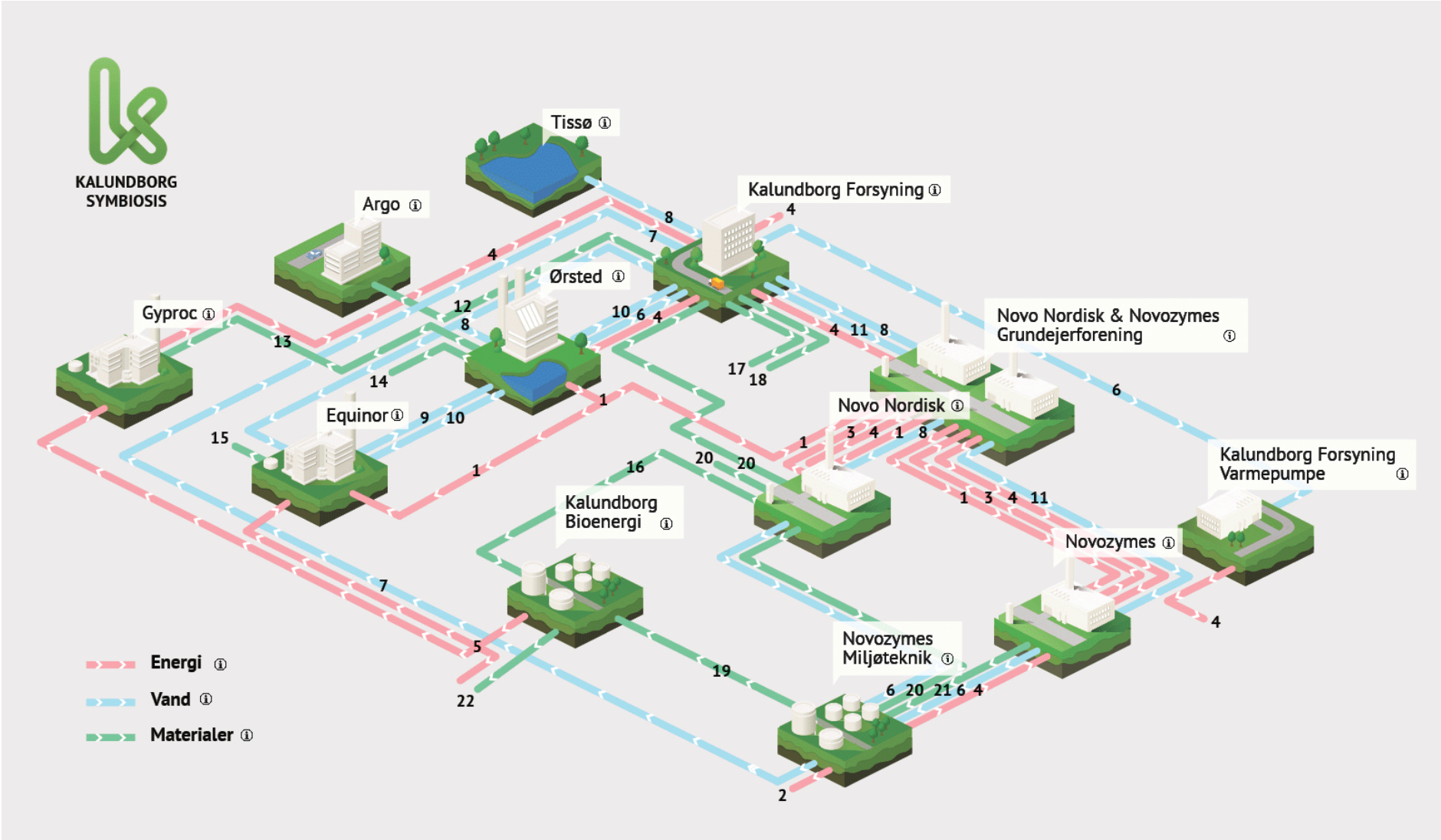
Gdansk

Recycling of low temperature of residual heat

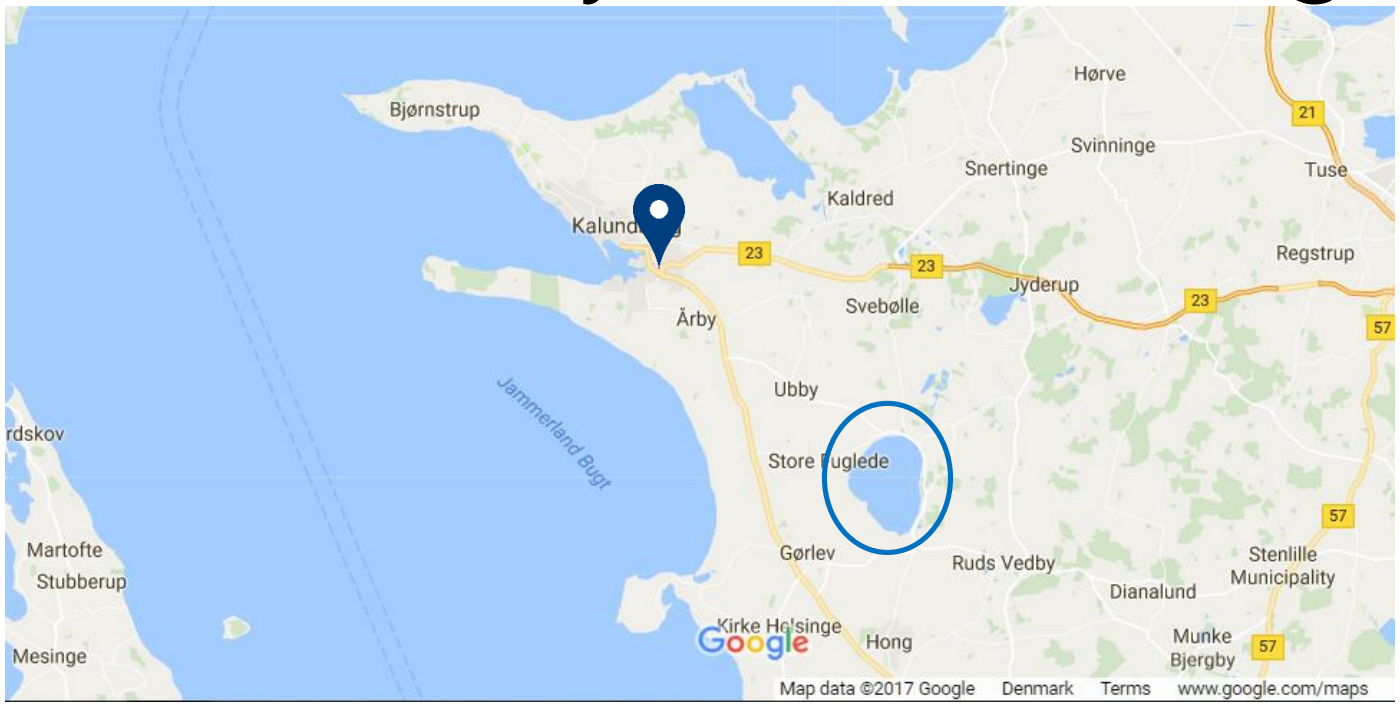
What is industrial symbiosis?

https://www.youtube.com/watch?time_continue=245&v=-xKjZcUb4k0

Pilot 1 – Industry water Kalundborg Symbiosis, DK



Surface Water from Lake Tissø to the industry in Kalundborg



Process water, about 3,5 mio. m3 process water and cooling water to industry based on surface water from Lake Tissø. Presently in 2 different qualities - problem with too warm water in summer and ice blocking at winter

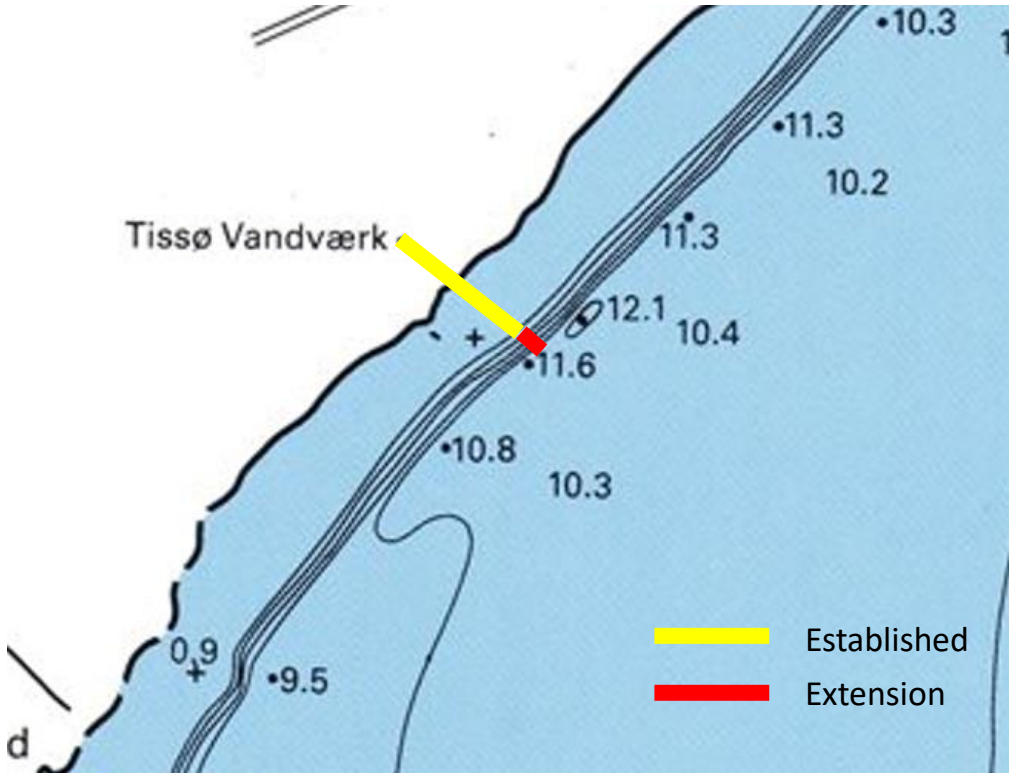
The Pilot in Kalundborg

Extension of 1 of the 3 intake pipes.

- Three pipelines supply fresh water from the lake to the pumping station. The three separate pipelines allows a slower and more environmental intake of water
- Extending 1 intake pipe into the deeper water just ahead of the currently established intakes.

Results:

- A more stable temperature in the supplied water all year
- Removes the risk of ice blocking during winter-time



Pilot installation using SFR reactor

Pilot 2 – Gdansk University of Technology, PL

Our task in the UBIS project was, design and construction of an installation for low-temperature heat recovery from exhaust gases of diesel engines.

The installation uses a new, very efficient gas-liquid heat exchange system in the Spinning Fluids Reactor SFR.

This heat can be used in another enterprise or in a public facility, e.g. greenhouses and for heating the sidewalk in the vicinity of public transportation stops in winter.

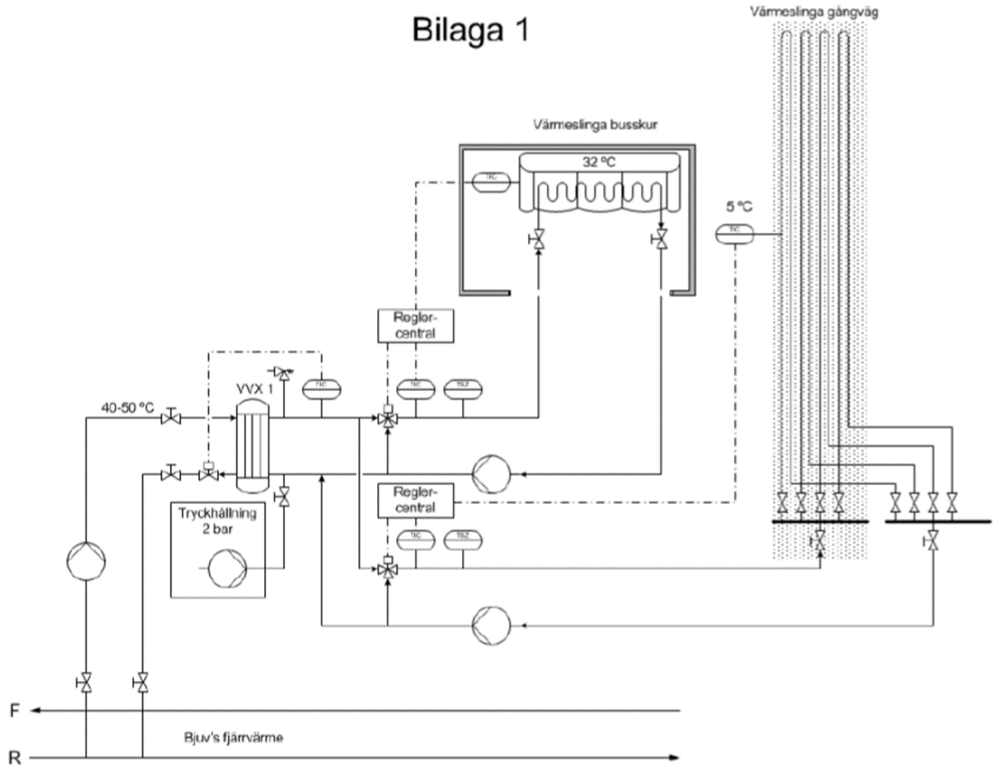
Incentive for the pilot

Industrial symbiosis is an important element of the circular economy as it offers tools to make better use of existing resources.
The industrial symbiosis - as understood at GUT - is mainly of economic importance, nevertheless, the undoubted environmental benefits also speak for its implementation.
Symbiosis contributes to local development and the increase of corporate social responsibility, as well as mitigates climate change.

Pilot 3 – Urban health in Bjuv muncipality, SE

- By using residual heat from local industries we create new healthy and social environments for people in urban areas.

- Our goal is to use residual heat to make park benches and bus stop warm and thereby a strong incentive for the commuters to take use of public transportations all year around.



Involve Stakeholders

- Attractive – social incentives
- Safe – traffic situation

Pilot - progress

Before - After

Shabby – inaccessible – unattractive - unsafe

Stylish – Attractive - Safe

Warm
Accessible

Pilot 4 – Waste management i Silute municipality

During the project, Šilutė District Municipality installed five semi-underground container sites in Rusnė, containing four semi-underground containers in each site (household waste, glass, plastic, paper) (hereinafter – pilot investments).

Main goal of the study

To carry out an evaluation of the symbiosis possibilities of the waste collection system in the Klaipėda region, taking into account pilot investments.

Pilot 4 – Waste management i Silute municipality, LT

Each container site contains 4 semi-underground containers for household waste, glass, plastic and paper. Even in the summer these containers have no smell, they are protected by fence and residents are given keys so that every apartment building has its own containers. That way citizens are motivated to sort their waste and witness the price of waste management decrease.

Increased sorting of waste also means getting closer to waste management and recycling targets of the EU.

Pilot 5 – Interctive planning tool in Malmö Harbour - three steps to facilitate matchmaking in Malmö, SE

- ☑ 1. Digitalisation of environmental yearly reports
- ☐ 2. Study - why, what and how?
- ☐ 3. The Interactive Map

2. Study - why, what and how?

- Why an interactive map? Who will benefit?
- What to show on the map?
- How do we make it happen?

Pilot Planning Tool for IUS in Malmö Harbour

More activities

Tool box

Analysing tools

Business models and financing solutions

Support to new symbiosis

Identify and support new potential cases of symbios

www.ubis.nu

and more activities…

International study visits

Skåne, Kalundborg, Gdansk, Vilnius

National study visits

To the pilot sites

Regional seminars

Thematic seminars, workshops

Thank you!

Per-Johan Wik

Skåne Energy Agency

Skåne Association of Local Authorities

per-johan.wik@kfsk.se