



GreenIndustrialAreas



17.12.2025.

Seminārs

***“Uzņēmējdarbības infrastruktūras
attīstība pārejai uz klimatneitrālu
ekonomiku”***

Interreg
Baltic Sea Region  Co-funded by
the European Union

 ENERGY TRANSITION
GreenIndustrialAreas



Viedās administrācijas un
reģionālās attīstības
ministrija



Kalundborg Symbiosis

Surplus from circular production



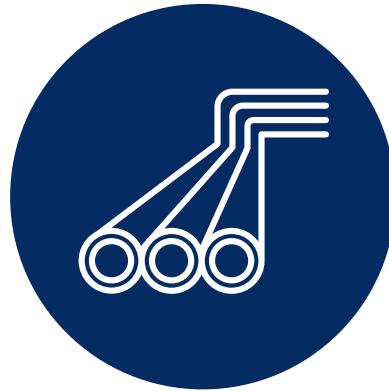
Kalundborg
SYMBIOSIS

Mission & Vision



Renew

Strengthening
the partnership



Connect

Full resource
utilization



Promote

Sharing the
symbiotic mindset



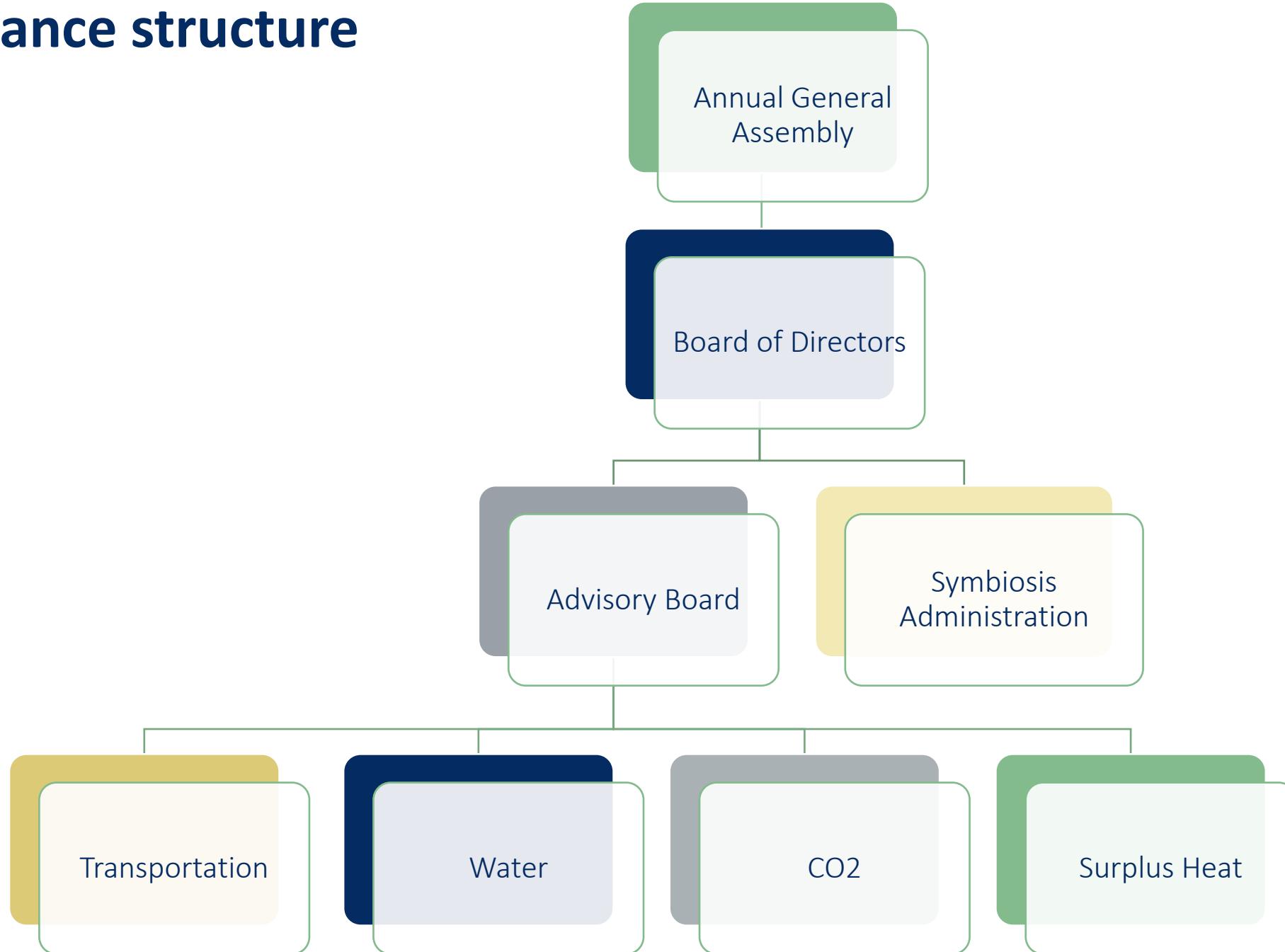
The world's leading
industrial symbiosis with
a circular approach to
production



Kalundborg Symbiosis
creates sustainable
development in our
companies through joint
projects



Governance structure



Kalundborg Symbiosis 2025



novonesis

Ørsted



argo

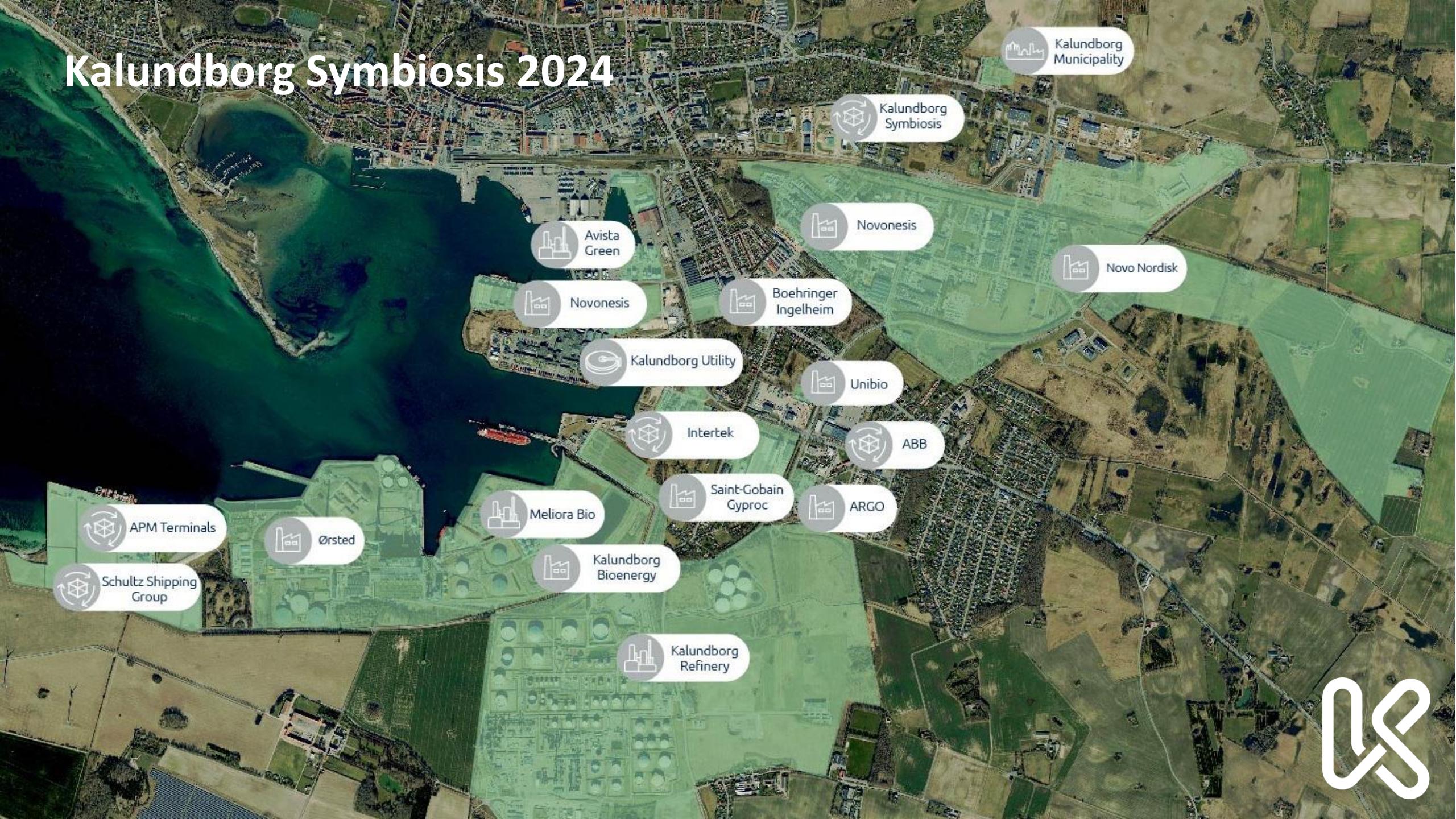
intertek
Total Quality. Assured.



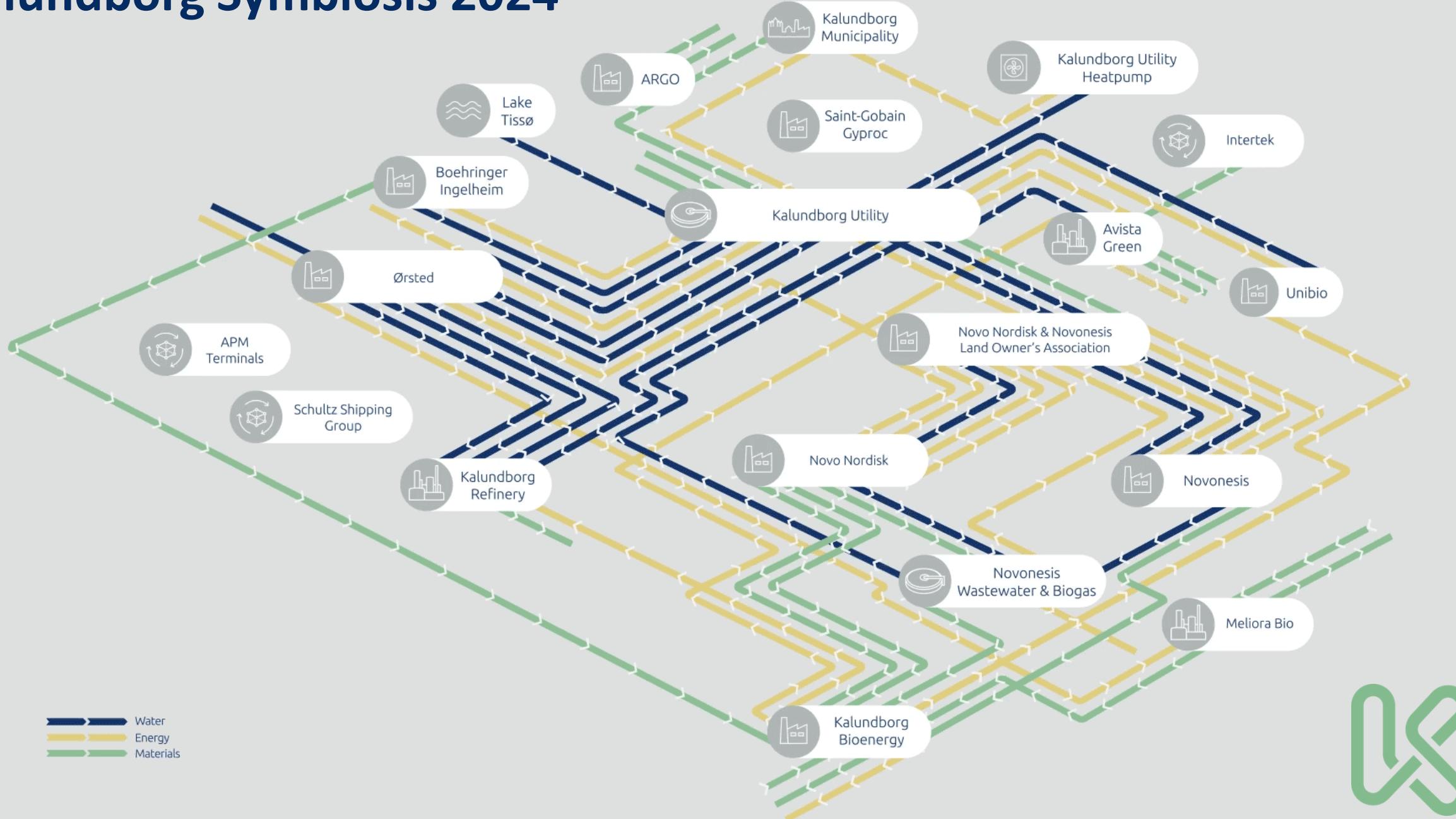
unibio



Kalundborg Symbiosis 2024

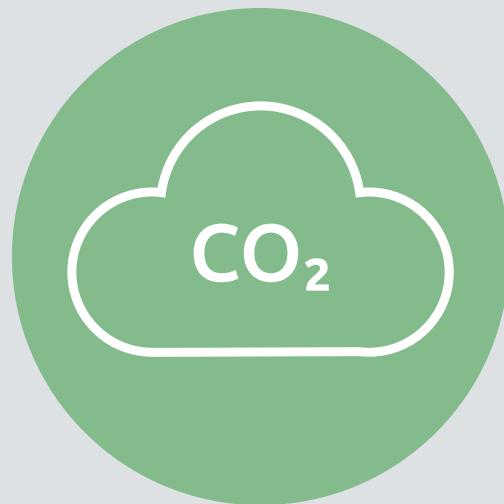


Kalundborg Symbiosis 2024





Annual savings since 2015



586,000 tons CO₂
The local energy production is
now CO₂ neutral



4 million m³
of groundwater



62,000 tons
of residual materials
recycled



Examples of local growth



€10 bn
investment



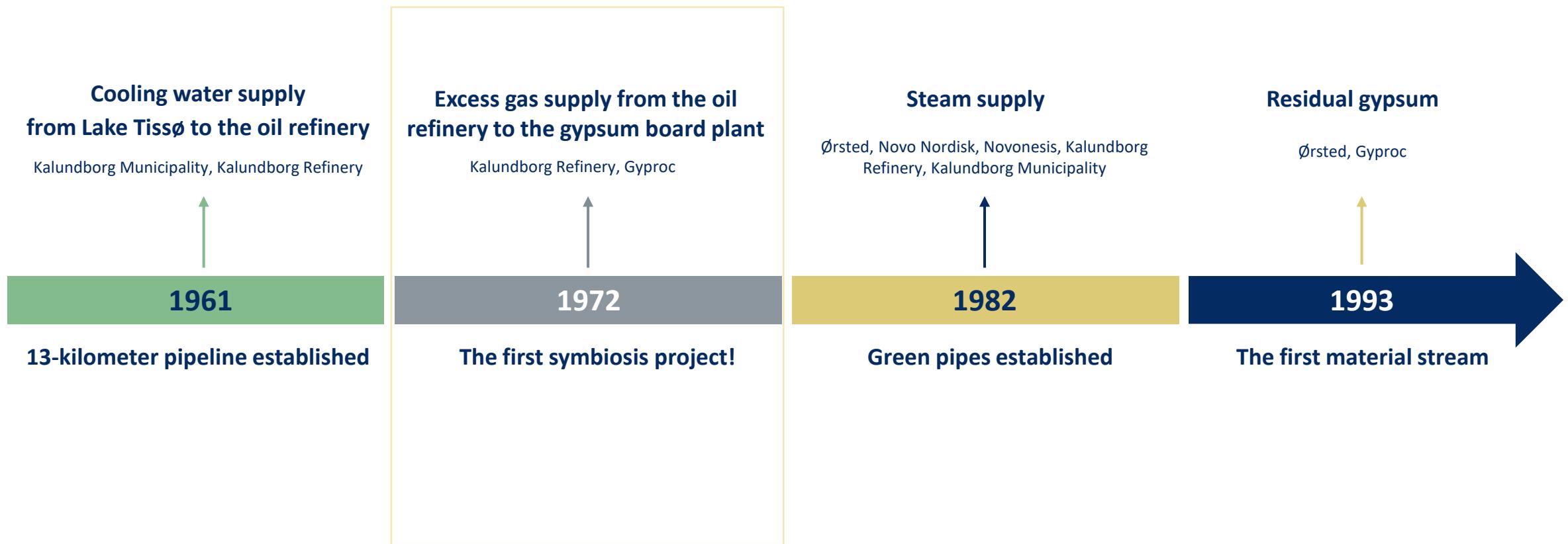
The investments
create
**1,300+ new,
permanent jobs**



**12 new educational
programs**
in Kalundborg

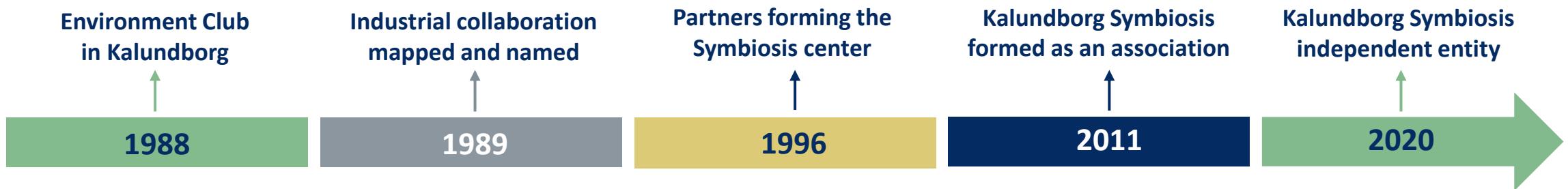


How it all started

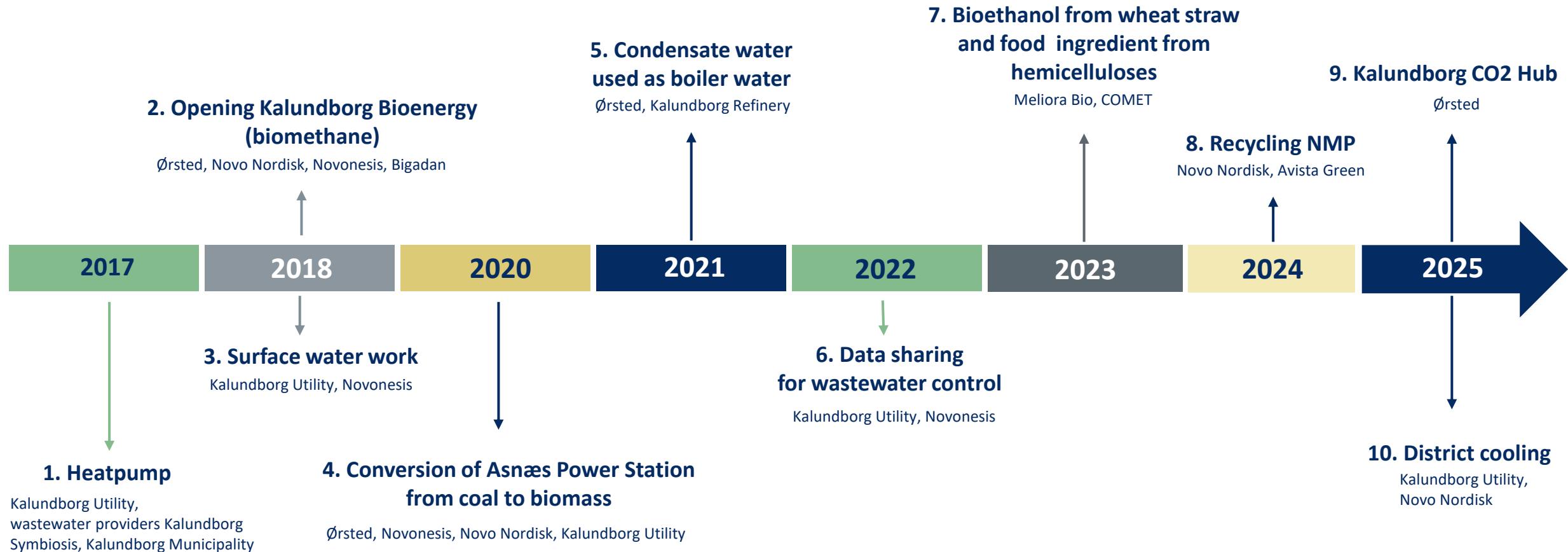




Organizational evolution

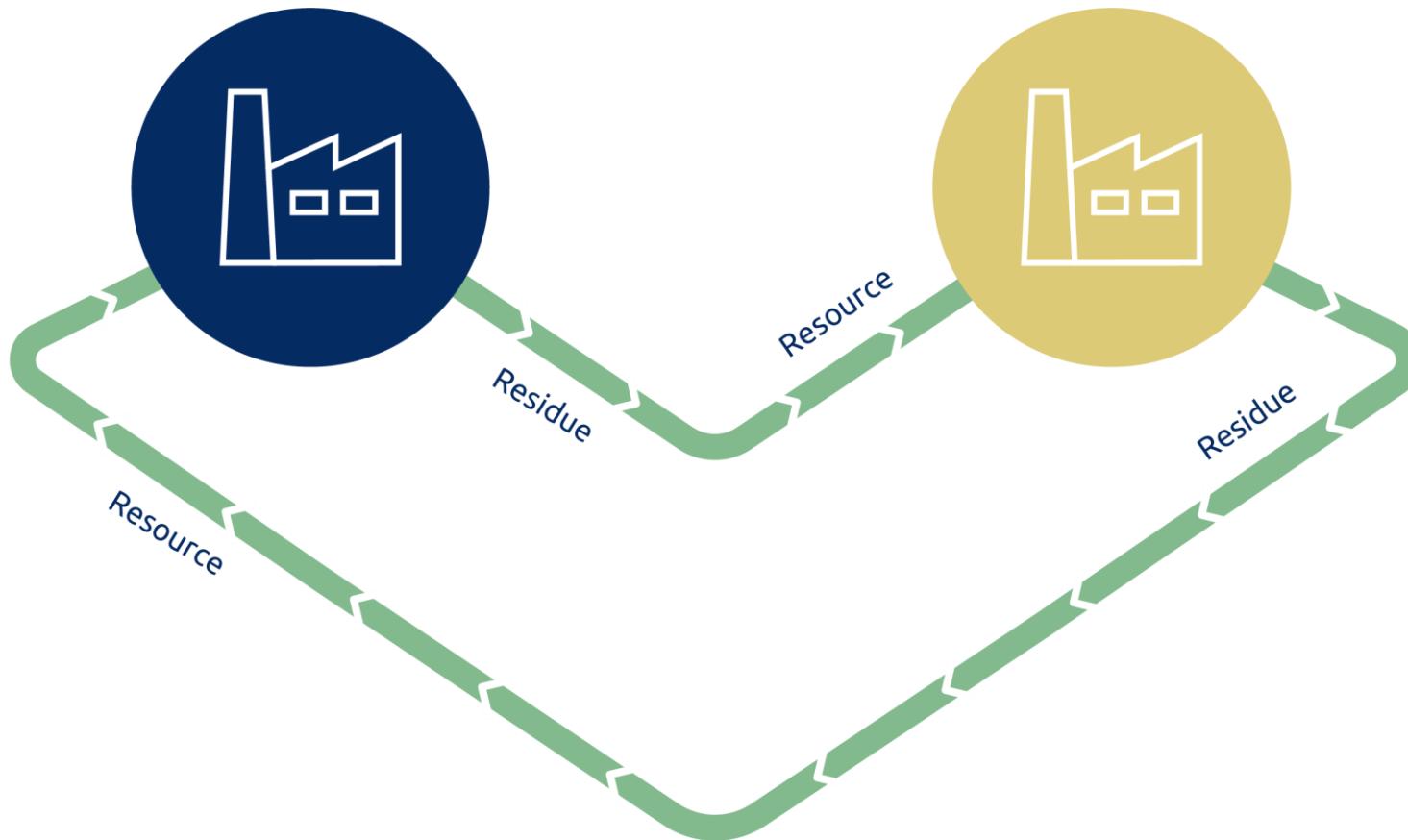


10 new streams by 2025

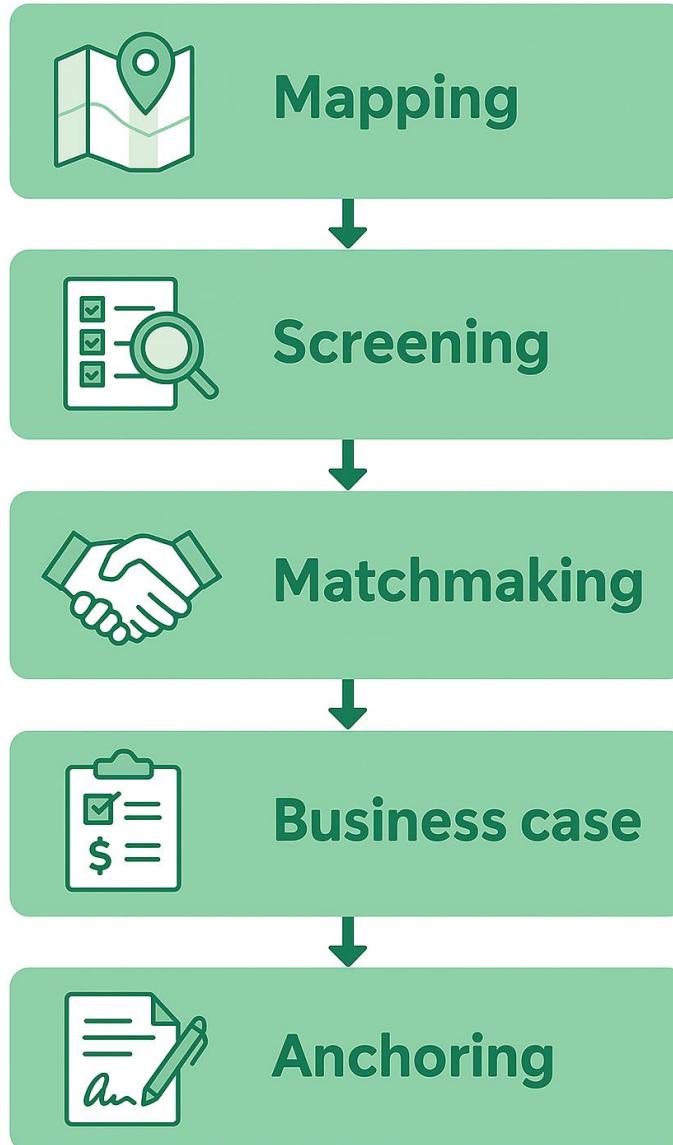




Industrial Symbiosis



The process of creating an industrial symbiosis



When establishing a new industrial symbiosis, potential members and partners first need to be identified and mapped

The screening identifies both the technical development potential of a company and its motivation and readiness to enter a symbiosis partnership

Successful symbiosis depends on trust, communication, and collaboration between companies, making initial facilitation crucial.

A symbiosis should be assessed like any investment, with a business case covering technical steps, legal aspects, and benefits for energy security, sales, and marketing.

Anchoring a symbiosis requires solid agreements and, for larger networks, planning and organization around a shared vision.

Screening Tool for Symbiosis Partnerships – Version 1

The dialogue-based screening tool assesses both a company's technical development potential and its motivation and readiness to engage in a symbiosis partnership. It was developed within the framework of the Interreg BSR project BIS.



Excel

Part 1 - Characterization of enterprise																																																															
Purpose: The purpose of this paragraph is to get a view into how your business model is structured.																																																															
1	2.1.1	2.1.2	2.1.3	2.1.4	2.1.5																																																										
2	Value proposition	A	B	C	D																																																										
3	What value do we deliver to the customer? Which of our customer's problems are we helping to solve? What products and services are we offering to each Customer Segment? Which customer needs are we satisfying?																																																														
4	3.3. Input-output: Water																																																														
5	3.3.1 Water types																																																														
6	These questions will determine what types of water you are using and what your costs are.																																																														
7	<table border="1"><thead><tr><th colspan="2">Please select the enterprise's water types</th><th colspan="2">Please list the water expenses</th><th colspan="2">Please list the annual consumption of water from that particular source</th><th colspan="2">Please do not change the measuring unit (1 m³ = 1000 litres)</th><th colspan="2">Comments</th></tr><tr><th>Number</th><th>Water (input)</th><th>Costs (EUR/year)</th><th>Amount/year</th><th>Measuring unit</th><th>Comments</th></tr></thead><tbody><tr><td>Water type 1</td><td></td><td></td><td></td><td>m³</td><td></td></tr><tr><td>Water type 2</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Water type 3</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Water type 4</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Water type 5</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Water type 6</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Water type 7</td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>					Please select the enterprise's water types		Please list the water expenses		Please list the annual consumption of water from that particular source		Please do not change the measuring unit (1 m ³ = 1000 litres)		Comments		Number	Water (input)	Costs (EUR/year)	Amount/year	Measuring unit	Comments	Water type 1				m ³		Water type 2						Water type 3						Water type 4						Water type 5						Water type 6						Water type 7					
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9	4. Readiness																																																														
10	Score																																																														
11	Data input																																																														
12	45																																																														
13	OK																																																														
14	<table border="1"><thead><tr><th colspan="2">What is the enterprise's level of readiness to engage in new Resource Efficiency, Green Business Models and Industrial Symbiosis projects?</th></tr></thead><tbody><tr><td>We are willing to participate in a project on increased reuse/recycling internally or with other enterprises</td><td>0</td></tr><tr><td>We are willing to invest in green business development and sustainability</td><td>9</td></tr><tr><td>We are willing to increase cooperation and communication with other enterprises</td><td>0</td></tr><tr><td>We are interested in changing our business model in a greener and more sustainable direction</td><td>2</td></tr><tr><td>Sustainability and green business development have a great influence on our business in the future</td><td>4</td></tr><tr><td>We are interested in participating in networks on green business development and sustainability</td><td>2</td></tr><tr><td>Our company management wishes to work further with green business development and sustainability than we do today</td><td>4</td></tr></tbody></table>					What is the enterprise's level of readiness to engage in new Resource Efficiency, Green Business Models and Industrial Symbiosis projects?		We are willing to participate in a project on increased reuse/recycling internally or with other enterprises	0	We are willing to invest in green business development and sustainability	9	We are willing to increase cooperation and communication with other enterprises	0	We are interested in changing our business model in a greener and more sustainable direction	2	Sustainability and green business development have a great influence on our business in the future	4	We are interested in participating in networks on green business development and sustainability	2	Our company management wishes to work further with green business development and sustainability than we do today	4																																										
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21	<p>Part 2 - Business model</p>																																																														
22	<p>Part 3 - Input-Output</p>																																																														
23	<p>Klar Tilgængelighed: Underøg</p>																																																														
24	<p>BALTIC INDUSTRIAL SYMBIOSIS</p>																																																														
25	<p>Interreg Baltic Sea Region</p>																																																														
26	<p>EUROPEAN REGIONAL DEVELOPMENT FUND</p>																																																														
27	<p>EUROPEAN UNION</p>																																																														

Digital screening tool for Symbiosis Partnerships – Version 2



Motivation (VPI Index)

Discover what drives your company to participate in a symbiosis partnership.
Please rate the importance of the following factors for your company.

14. QuestionValue Propositions Index (VPI) *

Very High	High	Medium	Low	Very Low	Cannot Answer
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Secure existing jobs
Create new jobs
Strengthen resilience community
Secure and develop infrastructure
Attract strategic investors

WATER Input
Please specify the types of water entering your production facility.

15. Commercial water, Input

Potable water from natural sources

16. Other types o

Skriv dit svar

17. Shared water,

Process wat
 Surplus wat
 Wastewater

Kalundborg Utility

About Motivation VPI Index Resource flows Internal Evaluation Opportunities Readiness

1 - Participation

2 - Motivation

3 - Resource flows

4 - Internal Evaluation

5 - Opportunities

6 - Readiness

Resource

Other, commercial non-renewable material
Other, internal material reuse
Other, commercial non-renewable material
Other, commercial renewable material
Other, shared water
Other, lost water
Other, commercial non-renewable material
Other, commercial non-renewable material
Other, commercial renewable material
Commercial water
Commercial renewable energy
Commercial non-renewable energy
Commercial non-renewable material

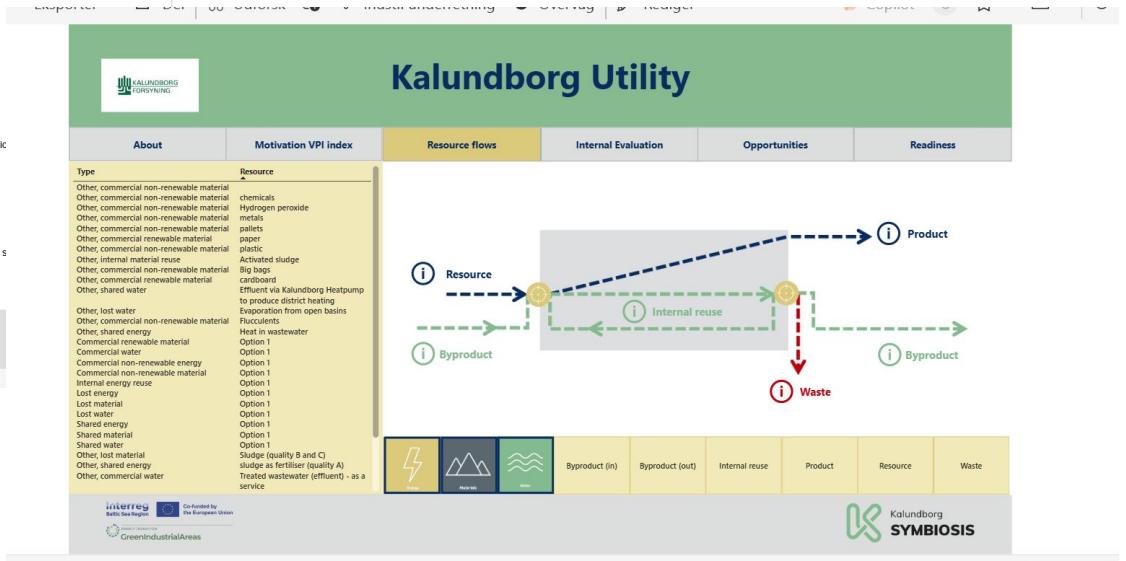
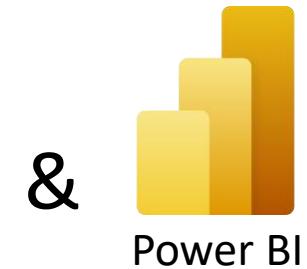
Byproduct

chemicals
hydrogen peroxide
residues
pallets
paper
plastic
Activated sludge
Big bags
cardboard
Treatment via Kalundborg Heatpump
to produce district heating
Evaporation from open basins
precursors
Heat in wastewater
Option 1
Option 1
Option 1
Option 1

Intercity
GreenIndustrialAreas

Supported by
GreenIndustrialAreas

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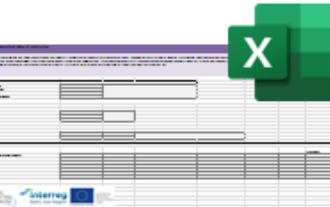




Digital screening tool - Report distribution



Forms link is sent out to intended respondents



Responses with timestamps are stored in the SharePoint/ excel database



After report refresh the responses can be selected in the BI front-end and presented



The report can be exported to PDF format and forwarded to respondents



Kalundborg Symbiosis

Surplus from circular production



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Project and Communications Manager
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