

Kalundborg Symbiosis

Surplus from circular production



Kalundborg
SYMBIOSIS



Kalundborg Municipality

Kalundborg Symbiosis

Novozymes

Novo Nordisk

Avista Green

Chr. Hansen

Boehringer Ingelheim

Kalundborg Utility

Unibio

Intertek

Saint-Gobain Gyproc

COMET

ARGO

Meliora Bio

APM Terminals

Ørsted

Kalundborg Bioenergy

Kalundborg Refinery

Mission & Vision



Renew

Strengthening
the partnership



Connect

Full resource
utilization



Promote

Sharing the
symbiotic mindset



The worlds leading
industrial symbiosis with
a circular approach to
production



Kalundborg Symbiosis
creates sustainable
development in our
companies through joint
projects



The Kalundborg Symbiosis Secretariat



Lisbeth Randers,
Head of Secretariat
MA in communication
& Master in Public Management



Per Møller,
Senior Symbiosis Developer
PhD in Biochemistry

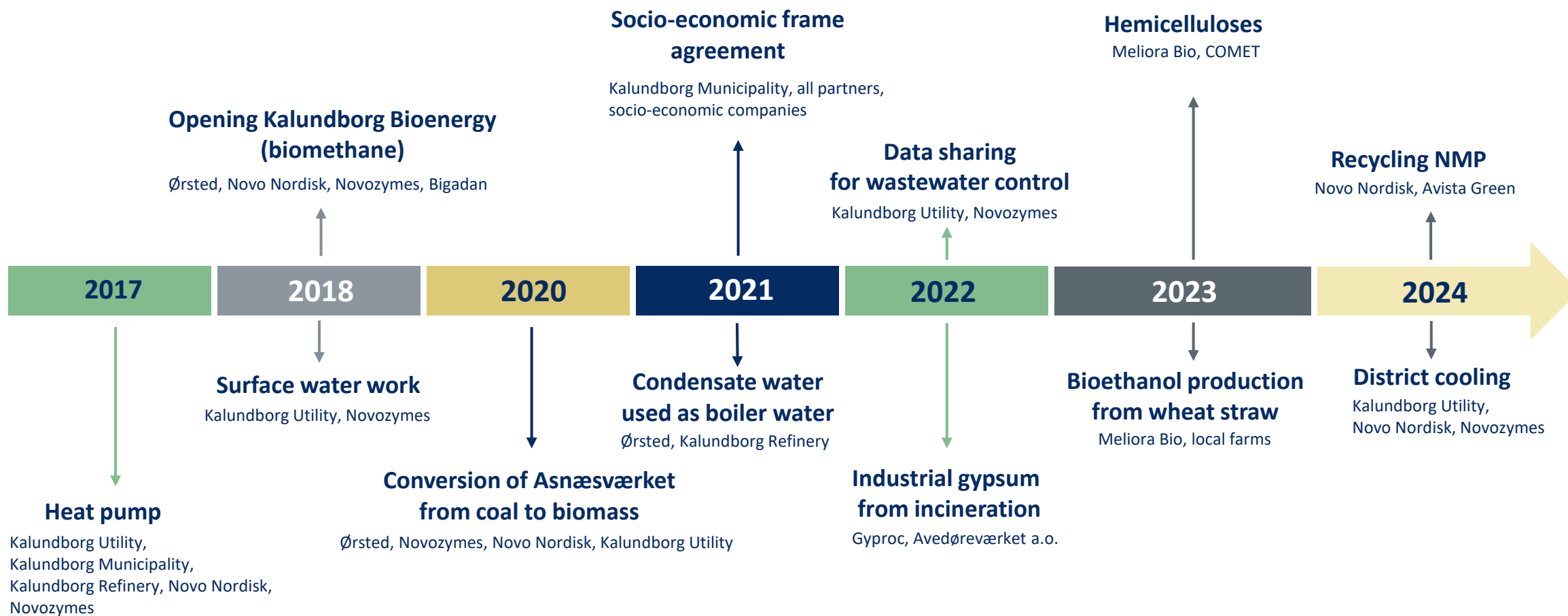


Nadejda Ulstrup-Hansen,
Administrative
Project Manager and Communicator
Master of Int. Business Communication

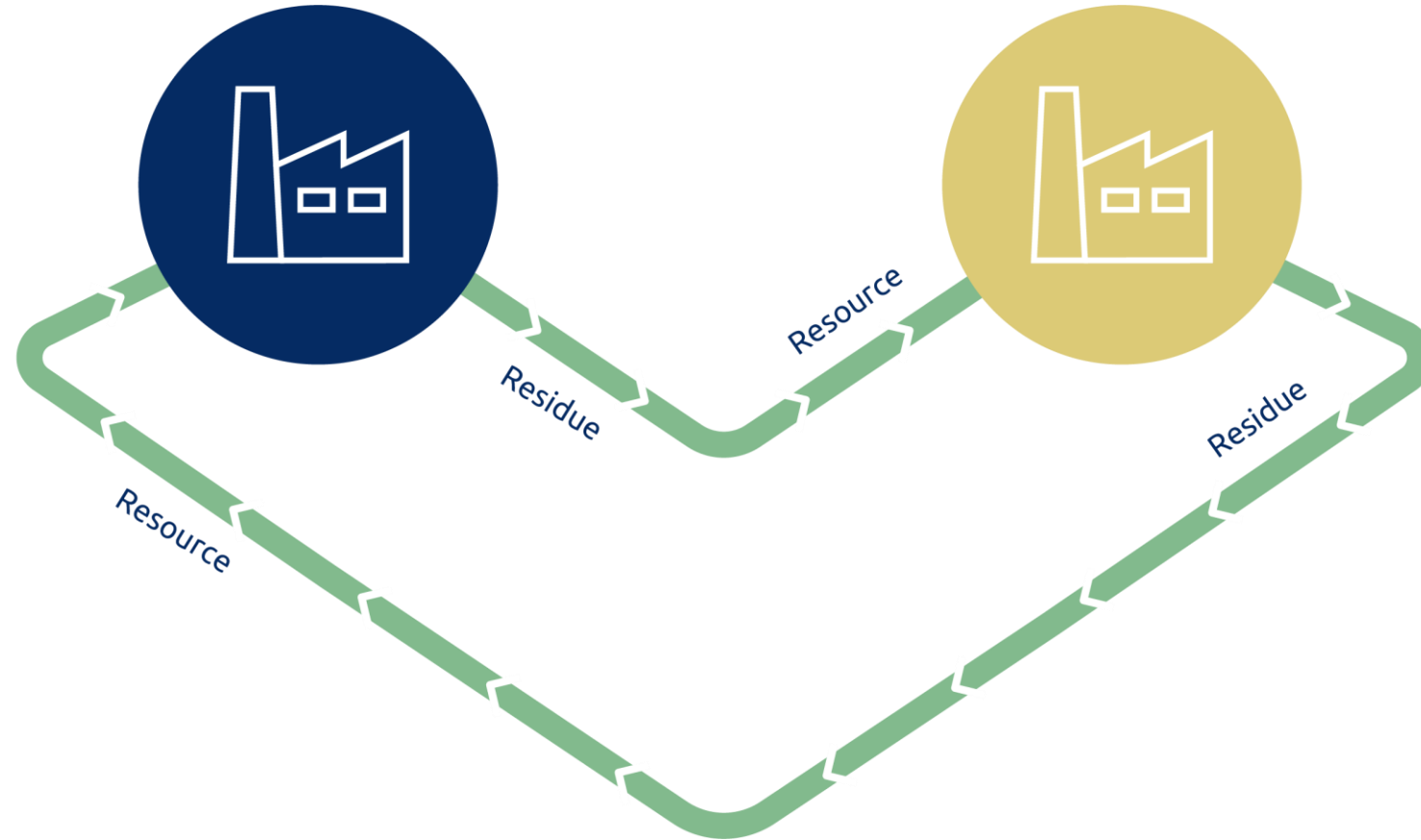


Mette Wendel,
Senior Project Manager
Teacher degree in Science

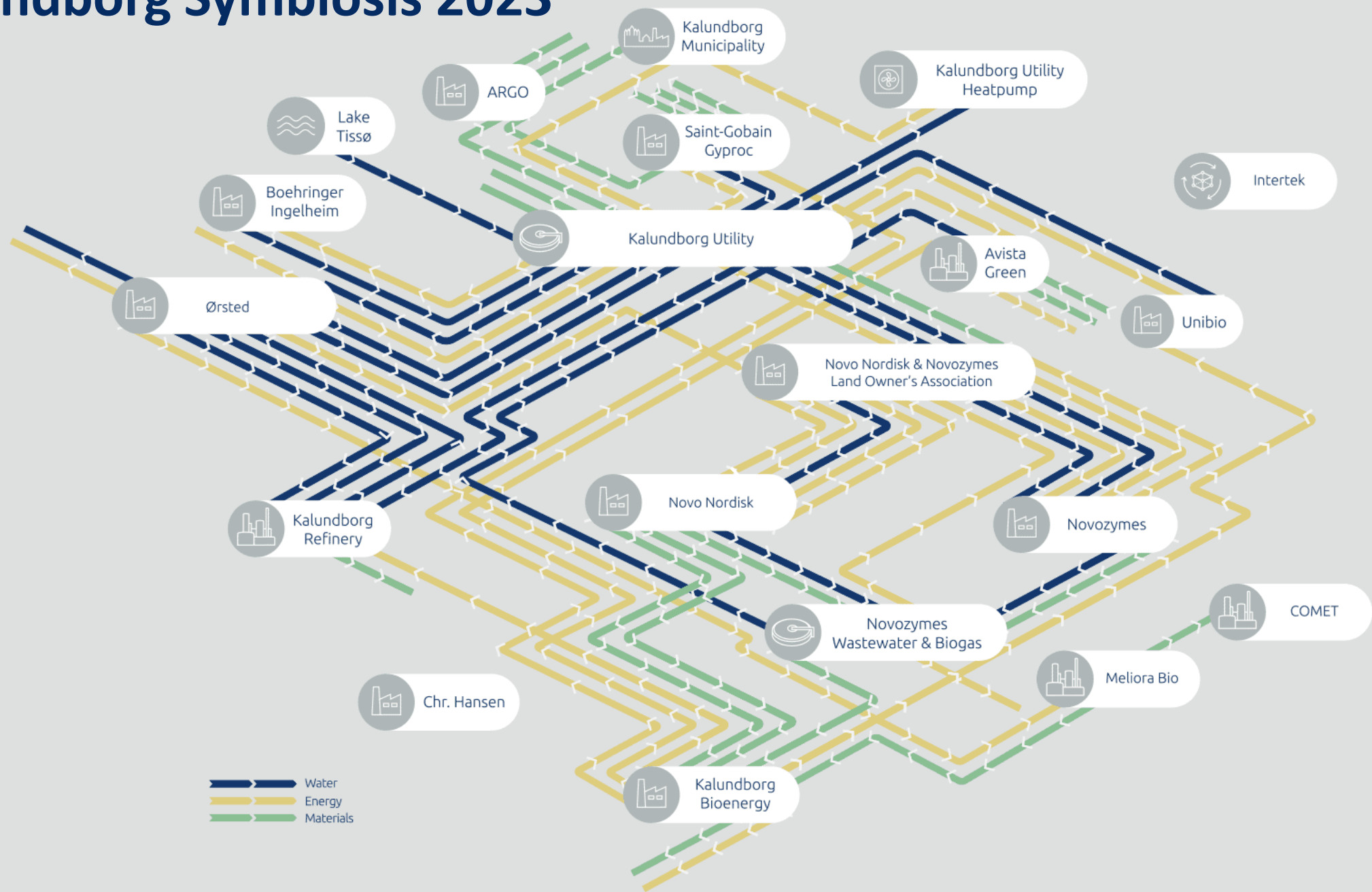
10 new streams before 2025



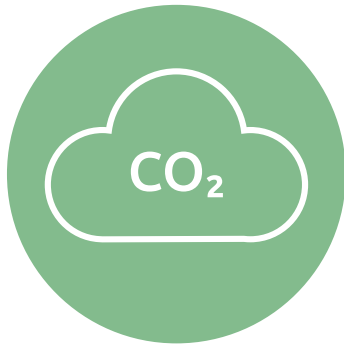
Industrial Symbiosis



Kalundborg Symbiosis 2023



Key numbers



586.000 tonnes CO₂
The local energy
production is now CO₂
neutral



4 million m³
of ground water



62,000 tons
of residual materials
recycled



3,68 billion €
investment



The investment will
create
**530+ new, permanent
jobs**



**12 new educational
degrees**
in Kalundborg

Kalundborg Symbiosis

Surplus from circular production



For more information please contact:

symbiosecenter@kalundborg.dk

Newest development – District cooling/excess heat





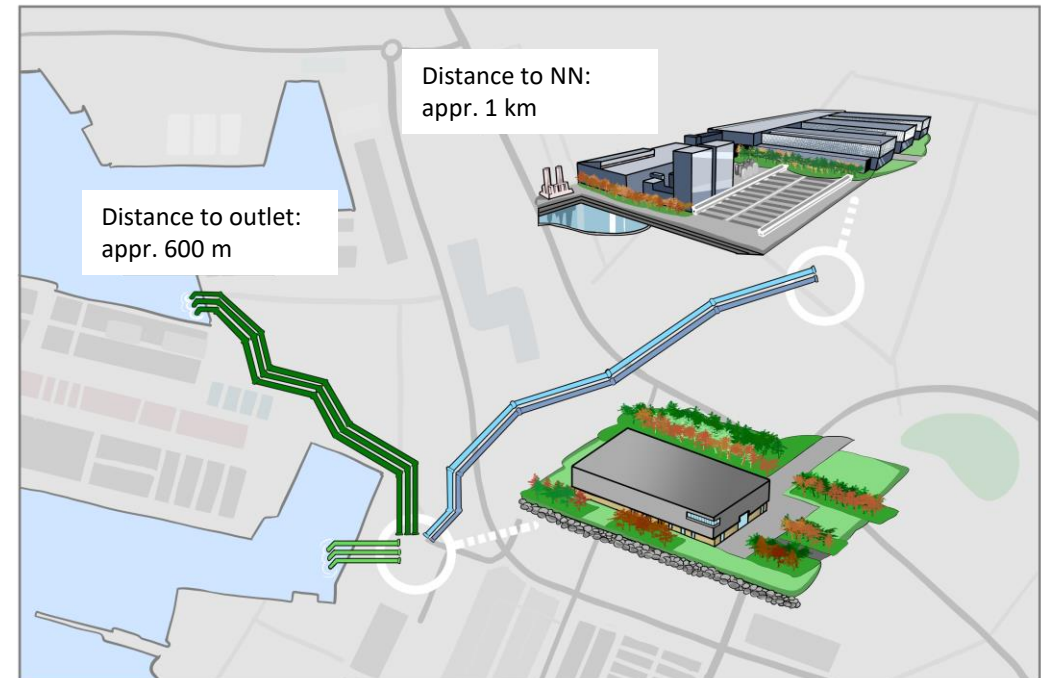
The biggest industrial combined cooling and heating central in Northern Europa

Key numbers behind the closed loop facility

- Investments: 1.4 mia. Dkr.
- Appr. 2 X 1 km underground pipes, 2 m diameter
- Operating in 2025
- Capacity: 166 MW cooling
- Sea water intake: 18.000 m³/h (max)
- Temperatures on the water flows:
 - Cooling for Novo Nordisk / Novozymes: 22,5° C
 - Heating from Novo Nordisk / Novozymes: 31,5° C
- Back-up chillers: 10 MW

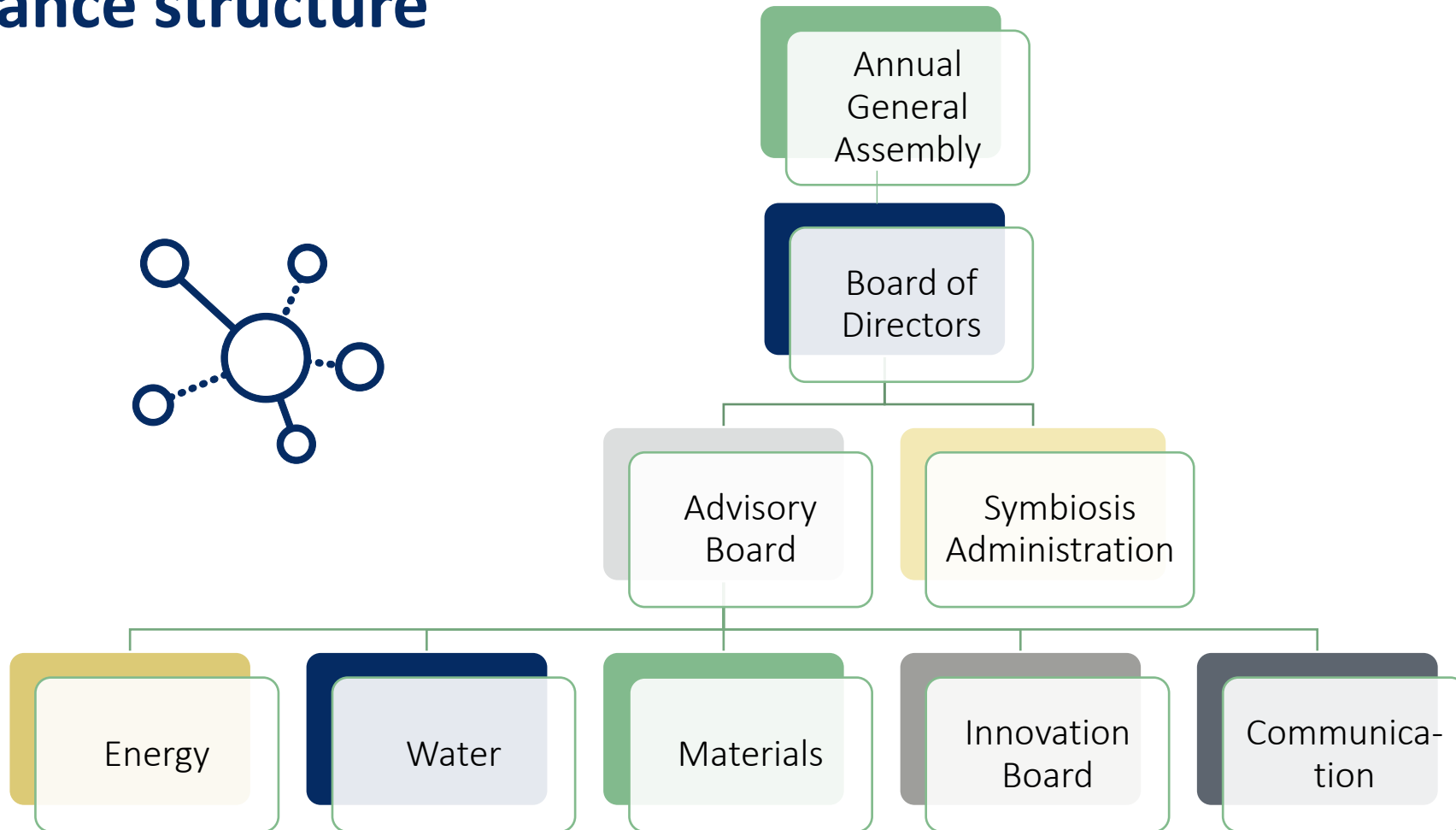
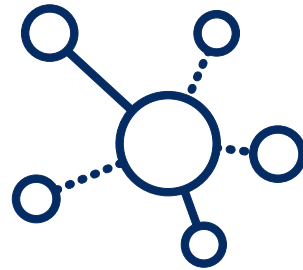
More info here: [Nordeuropas største industrielle fjernkøl- og varmecentral | Kalundborg Forsyning \(kalfor.dk\)](https://kalfor.dk/nordeuropas-største-industrielle-fjernkøl-og-varmecentral)

Saving water and chemicals, utilizing the potentials of excess heat





Governance structure



Innovation tracks



Fast track – INNOVATION BOARD

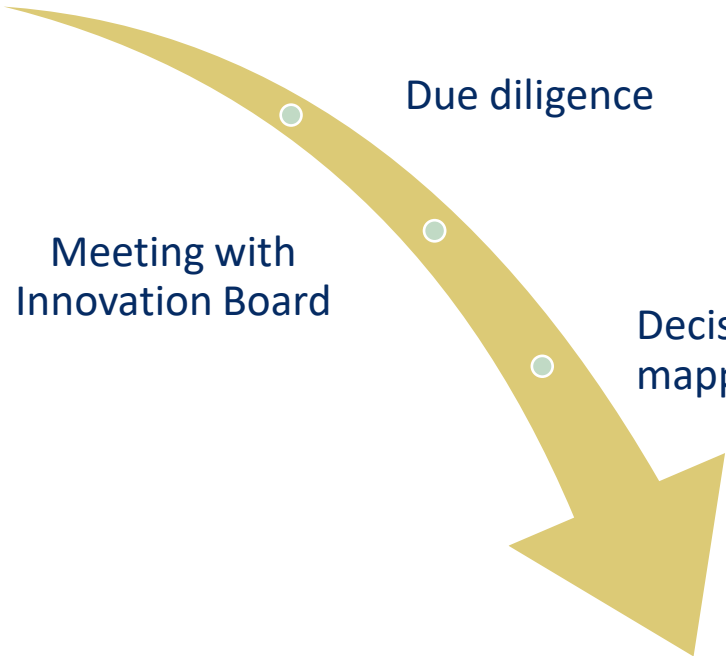
No wrong door

Due diligence

Meeting with
Innovation Board

Decision, reach out,
mapping

Final feed back



Slow track – ADVISORY BOARD

