

HEAT 4.0

Monthly - Industrial results by LOGSTOR

January 2022



Kingspan®



Our team today



Martin Lindgaard Pedersen

Head of Digital
martinl.pedersen@kingspan.com



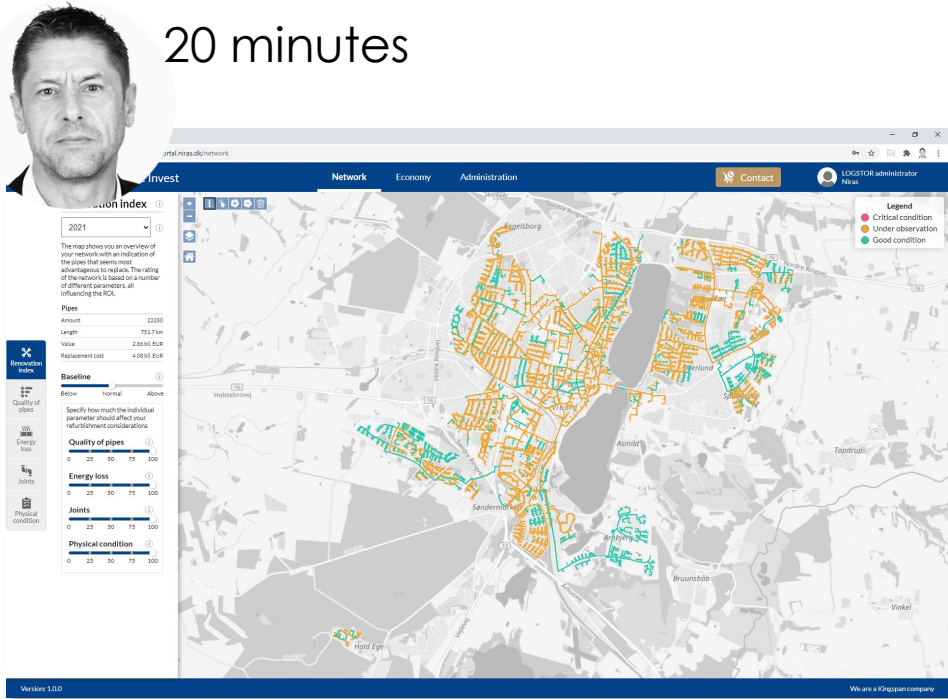
Peter Jorsal

Product & Academy Manager
peter.jorsal@kingspan.com



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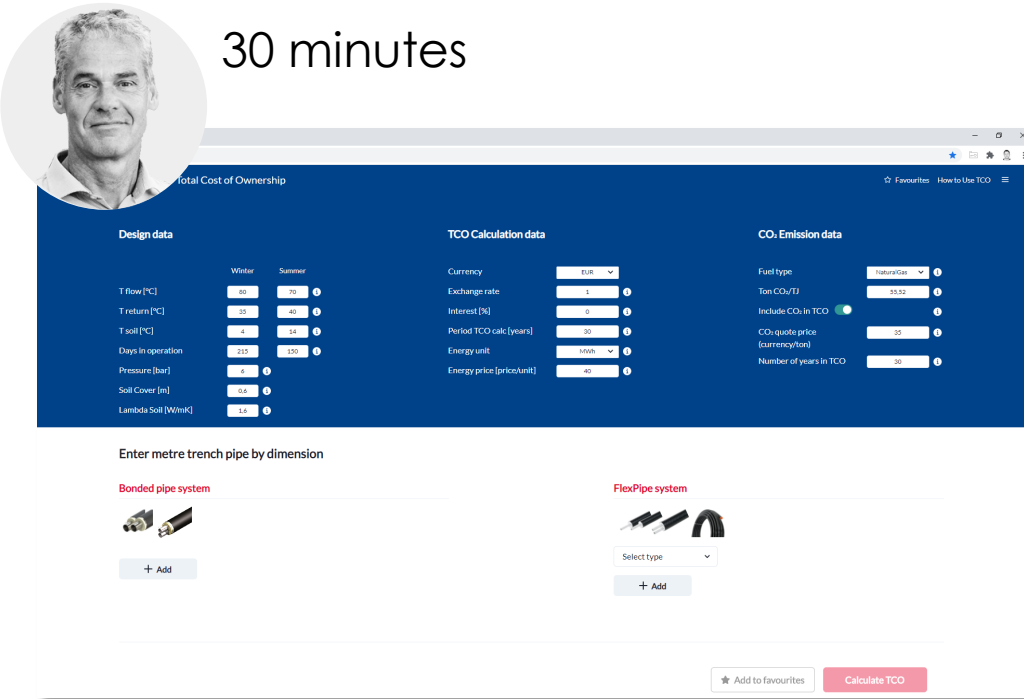
20 minutes



Pipeinvest

An Asset Management tool indicating **district areas**, **financial costs** and **timescale**, based on renovating your District Heating pipes.

30 minutes



TCO – Total Cost of Ownership

A tool which will assist you to select the best District Heating pipes with the lowest **Cost of Ownership**.

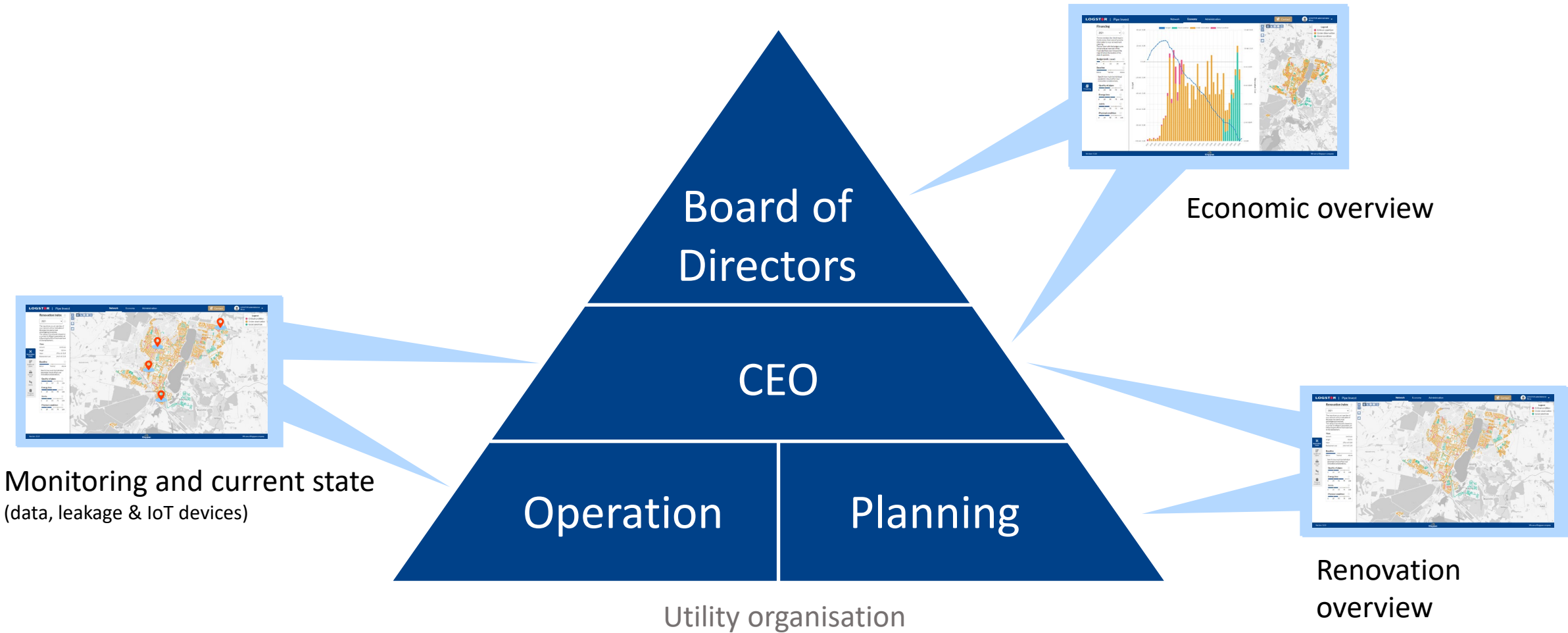


Pipe-invest

Disclaimer: Pipeinvest is currently under development. Expected release in Q2-2022.
We are looking for utilities that will participate in a pilot project.

PipeInvest

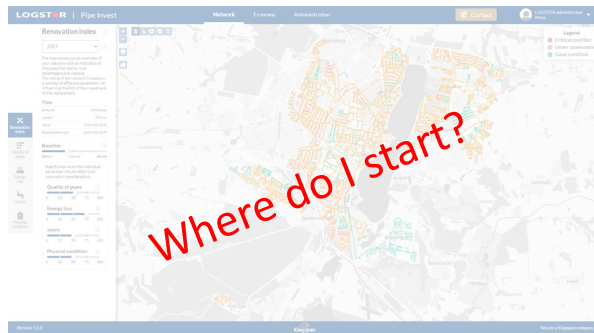
Different users with different roles and needs



PipeInvest

Renovation & Economy

Renovation overview



Where do I renovate and maintain my District Heating pipes to get most value for money and at the same time get a sustainable renovation?

Economy overview



Gives you an **overall** idea if current investment is balanced on a long-term perspective.

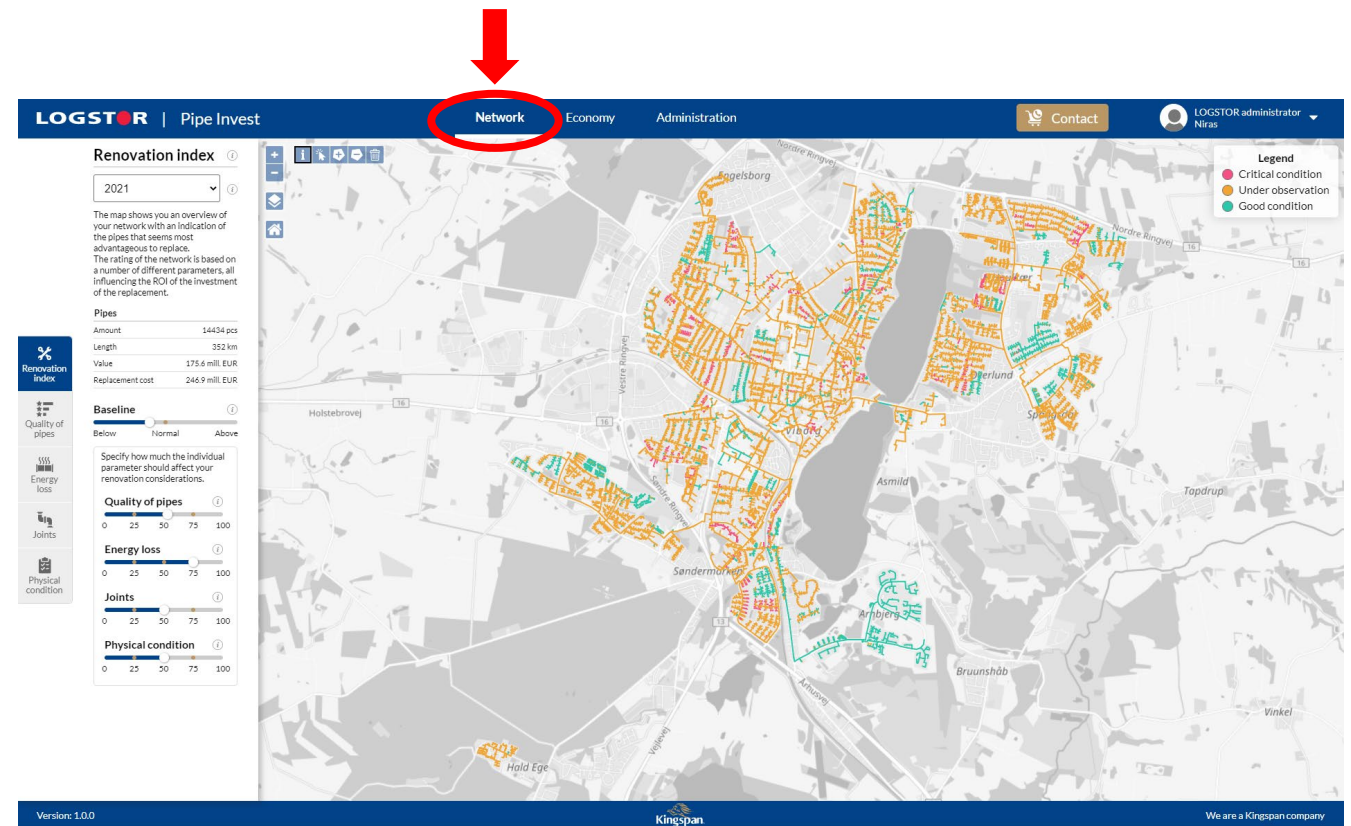
PipeInvest

This is how it works:

1. The District Heating pipes are imported into the PipeInvest tool.
This creates a “picture” (map) of the District Heating pipes , where the quality of the pipes are expressed in green, yellow and red colours.
2. The utility “calibrates” the model.
Currently 4 parameters can be adjusted, this is intended to be scaled according to customer inputs/wishes or more their experience from the district areas.
3. The economy overview indicates a timescale budget on renovation, either to keep or improve the quality of the District Heating pipes

PipeInvest

Network view

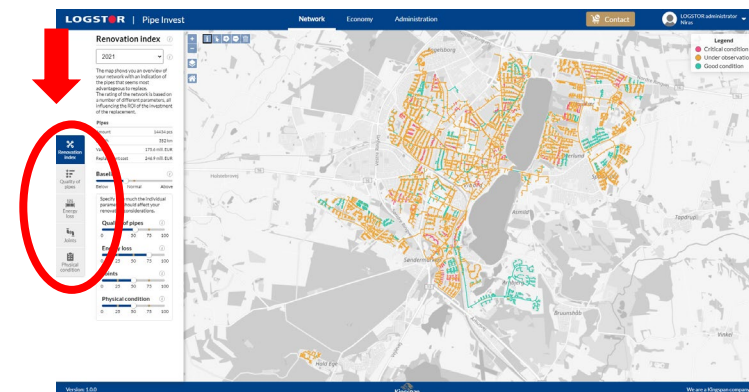



The map shows you an overview of your network with an indication of the pipes that seems most advantageous to replace.


- Calibrate the model on the sub-sections
- Evaluate the model and adjust the baseline


PipeInvest


Network view, sub-sections (currently 4)





Renovation index


Quality of pipes


Energy loss


Joints


Physical condition



based on the influence of Quality of pipes alone. This is based on the type of the individual pipes, including factors like age and life-time as well as alarm wiring.



based on the influence of Energy loss alone. This is based on the age of the individual pipe, pipe system (single or twin pipe) and factors like isolation series and diffusion barrier.



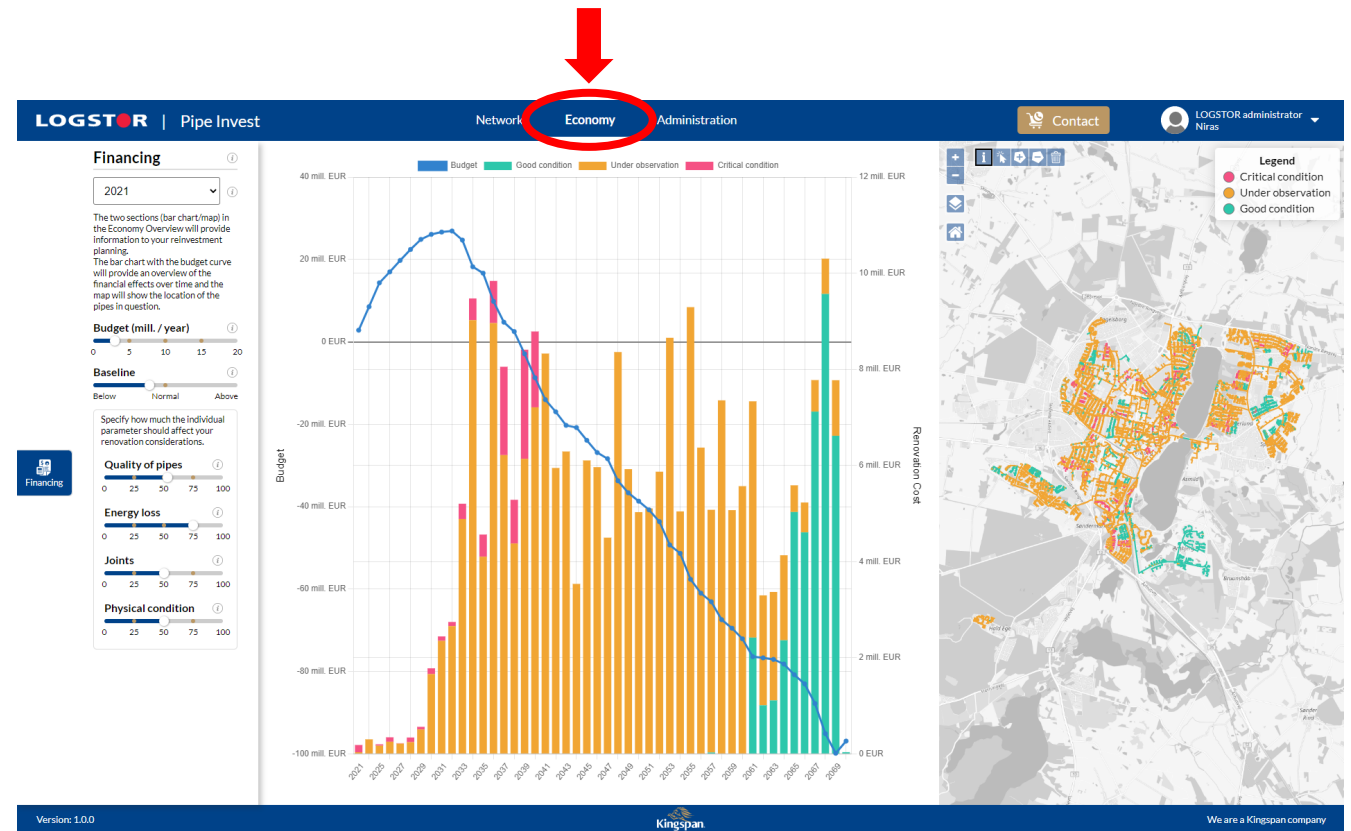
based on the influence of joints alone. This is based on available information regarding i.e. joint type, age, construction year and number of joints in a section of the network.



based on the influence of physical conditions alone. This is based on available information regarding the surroundings for your network i.e. type of soil, groundwater levels and how deep the network is buried. Age of the network and number of repairs also contribute to this index.

PipeInvest

Economy view



The two sections (bar-chart/map) will provide information to your reinvestment planning. The bar chart with the budget curve will provide an overview of the financial effects over time and the map will show the location of the pipes in question.

- Evaluate the budget
- Evaluate the investment period
- Look at short- and long-term economical consequences

PipeInvest

Live demo
(Viborg case)

TCO - tool

A tool that will guide you to make the best choice of pipe system based on Total Cost of Ownership

The TCO tool is a **free of charge** tool, that can be accessed on the LOGSTOR webpage:

tco.logstor.com

TCO - tool

Setting the stage

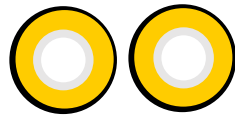
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The right choice of pre-insulated pipe system

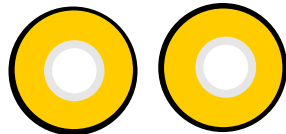
12 different choices of pre-insulated pipe systems

Available pipe systems

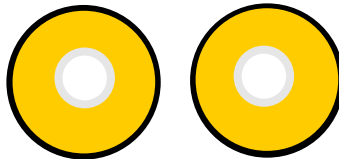
Series 1



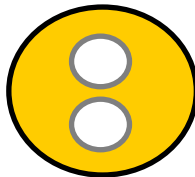
Series 2



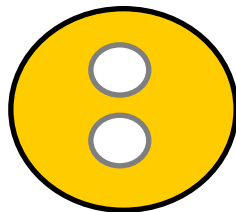
Series 3



Series 1



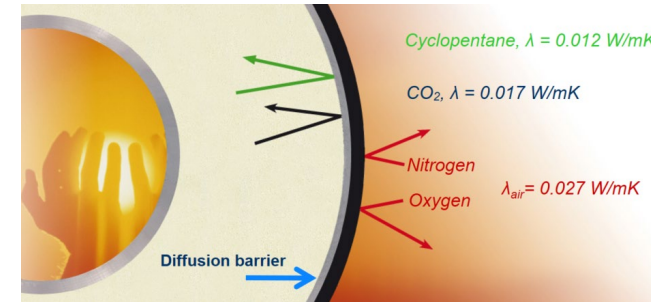
Series 2



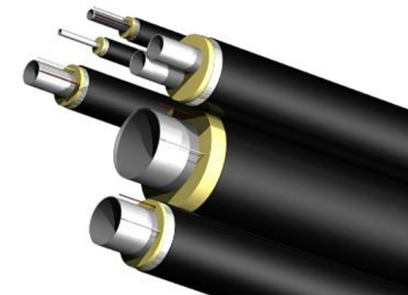
Series 3



- All these variants can be delivered with or without diffusion barrier
- The diffusion barrier secures that heat loss properties will remain the same during lifetime

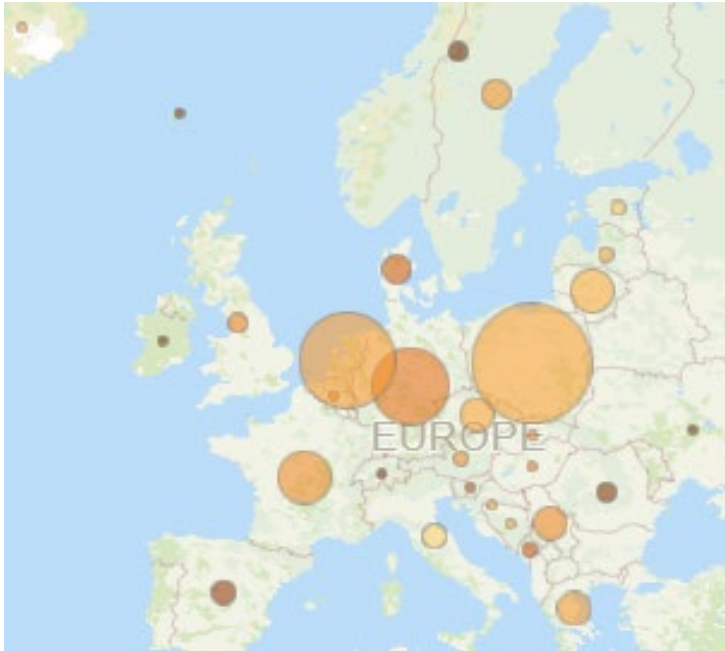


- => 12 different choices for the same project



Markets for pair of pipe

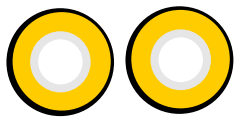
Pair of pipe series 1



Pair of pipe series 2



Pair of pipe series 3



Series 1 pair of pipe is 60% of the total market of pair of pipe

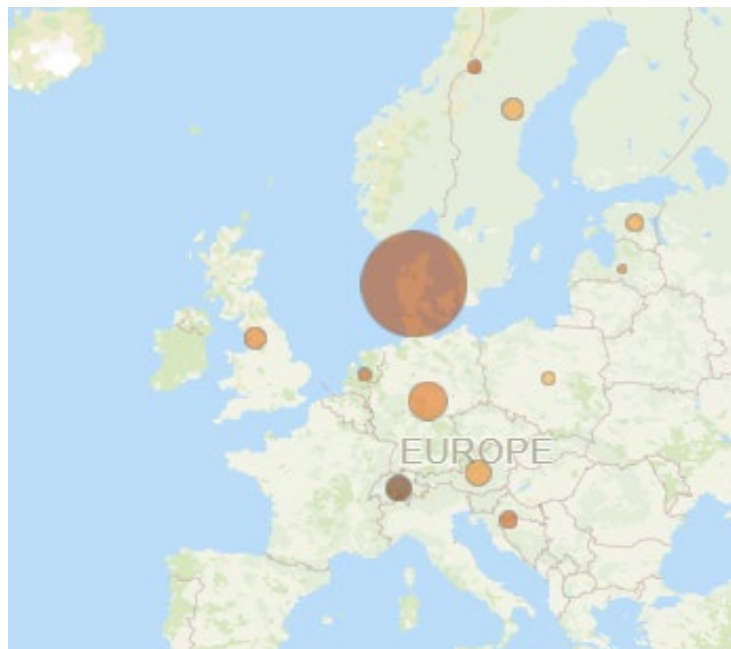
Series 1 pair of pipe is the pipe system with the worst insulation properties

Markets for TwinPipe – Lowest TCO with TwinPipe

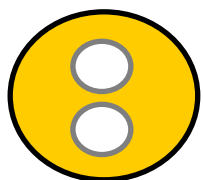
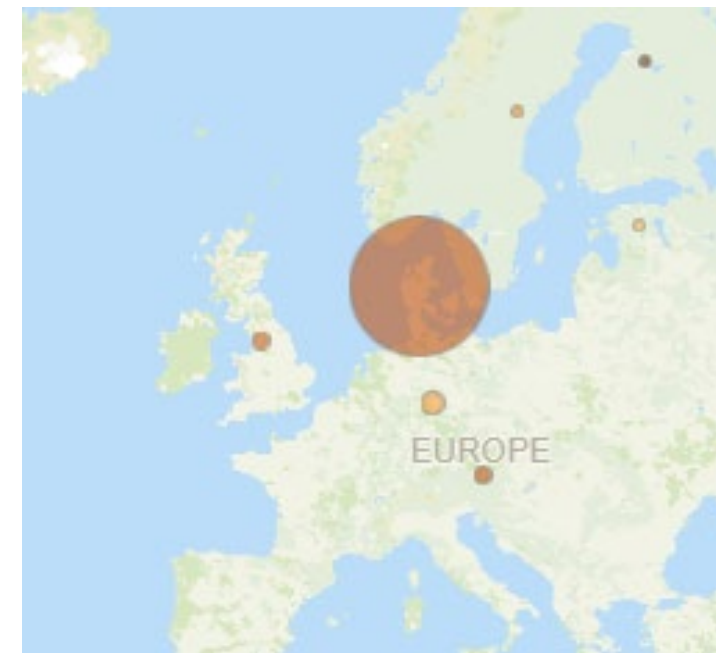
TwinPipe series 1



TwinPipe series 2



TwinPipe series 3



TwinPipe represents 35% of the total sales in dimensions where Twin is possible

In Denmark it is more than 70%, In Poland it is 5%

Lowest possible heat loss with TwinPipe

Provoking statement

We still see many energy companies that make their choice of pipe system based on

“We do what we do because this is what we always have done”

TCO - tool

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The right choice of pre-insulated pipe system

Total Cost of Ownership perspective (TCO)

Total Cost of Ownership includes

Investment (CAPEX)

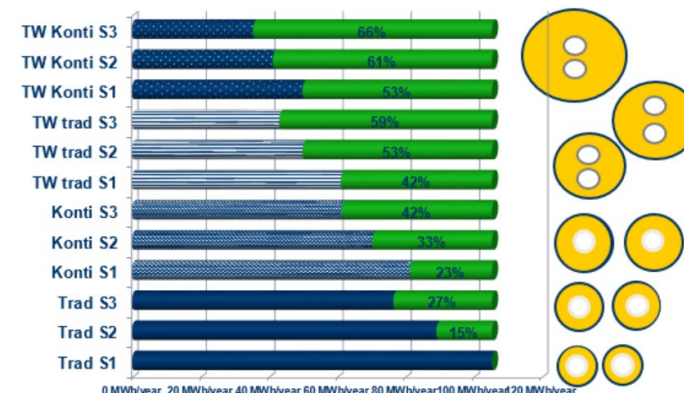
- Pre-insulated pipes
- Excavation and asphalt
- Pipe handling, welding and jointing
- Consulting, design
- Supervision

Operation (OPEX)

- Heat loss cost
- CO2 quote fee
- Pumping cost
- Repairs
- Maintenance
- Surveillance



Heat loss - 1000 m DN 80 – average 30 years



TCO – Tool

[Live demo](#)

End of presentation