



The right choice of pre-insulated  
pipe systems

Total cost of ownership introduction

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# Who is Kingspan - LOGSTOR

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District Heating



District Cooling



Thermal Solutions



Industry



# LOGSTOR UK & IRE Solutions

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Market Leading Manufacturer of pre-insulated pipe solutions for Heat Networks, bringing 60 years of expertise to your project via our UK team

- Academy
- Design
- Technical Support
- Service solution
- Sales
- Leak Detection
- Total Cost of Ownership
- CPD's
- Bespoke Fabrications



# Total Cost of Ownership - selections



- Available pipe systems

- **Pair of pipe**

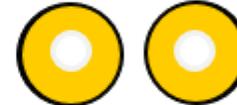
Series 1



Series 2



Series 3



- **Twin Pipe**

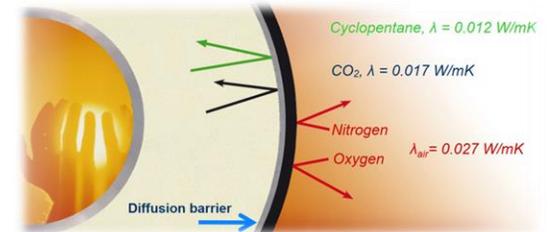
Series 1



Series 2



Series 3



12 different choices for the same project



# Total Cost of Ownership - selections

Design data			TCO Calculation data		CO <sub>2</sub> Emission data	
T flow [°C]	Winter: 80	Summer: 70	Currency	GBP	Fuel type	CO <sub>2</sub> Neutral
T return [°C]	35	40	Exchange rate	0,84	Ton CO <sub>2</sub> /TJ	0
T soil [°C]	4	14	Interest [%]	0	Include CO <sub>2</sub> in TCO	<input type="checkbox"/>
Days in operation	215	150	Period TCO calc [years]	30		
Pressure [bar]	6		Energy unit	MWh		
Soil Cover [m]	0,6		Energy price [price/unit]	50		
Lambda Soil [W/mK]	1,6					

Enter metre trench pipe by dimension

## Bonded pipe system



100	DN80 / ø88,9	▼	🗑️
250	DN125 / ø139,7	▼	🗑️
300	DN150 / ø168,3	▼	🗑️
+ Add			

## FlexPipe system



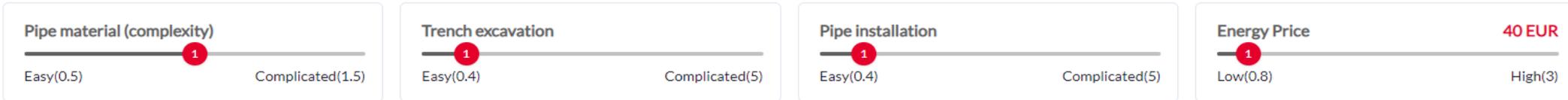
PexFlextra		▼	
100	DN32 / ø32	▼	🗑️
200	DN50 / ø50	▼	🗑️
+ Add			

★ Add to favourites

Calculate TCO

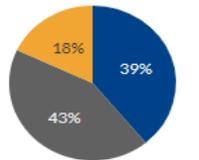
# TCO – Total Cost of Ownership

## Adjust project calculation ⓘ



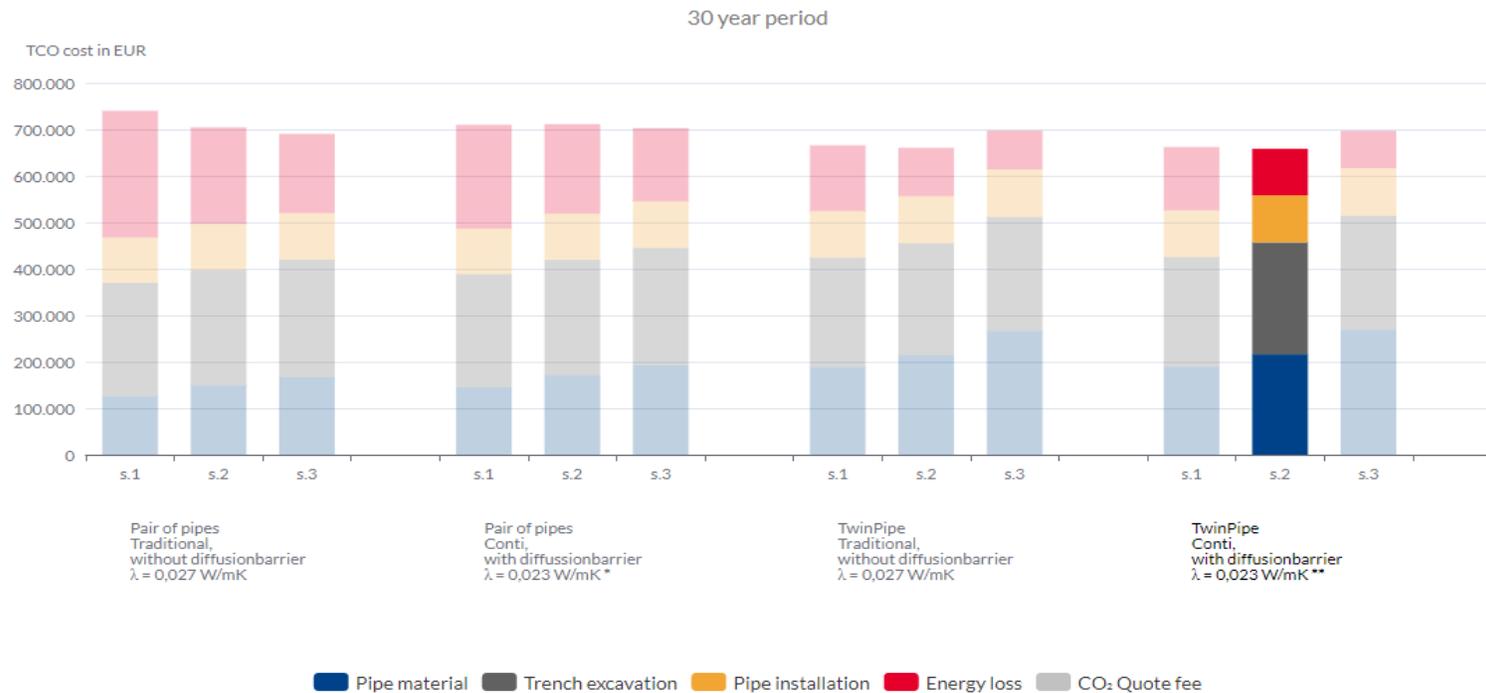
## Results of calculation

### Dimensions DN20-DN200



TwinPipe Conti, s.2 with diffusion barrier  $\lambda = 0,023 \text{ W/mK}^{**}$

DN20-DN200 note regarding lambda values:  
 \* Pair of pipes, Conti in DN200 series 2 and series 3 have lambda value at 0,025 W/mK  
 \*\* Twin pipes, DN100 series 2/3 and DN125-DN200 series 1/2/3 have lambda value 0,027 W/mK



# TCO – Total Cost of Ownership

Energy loss for first year

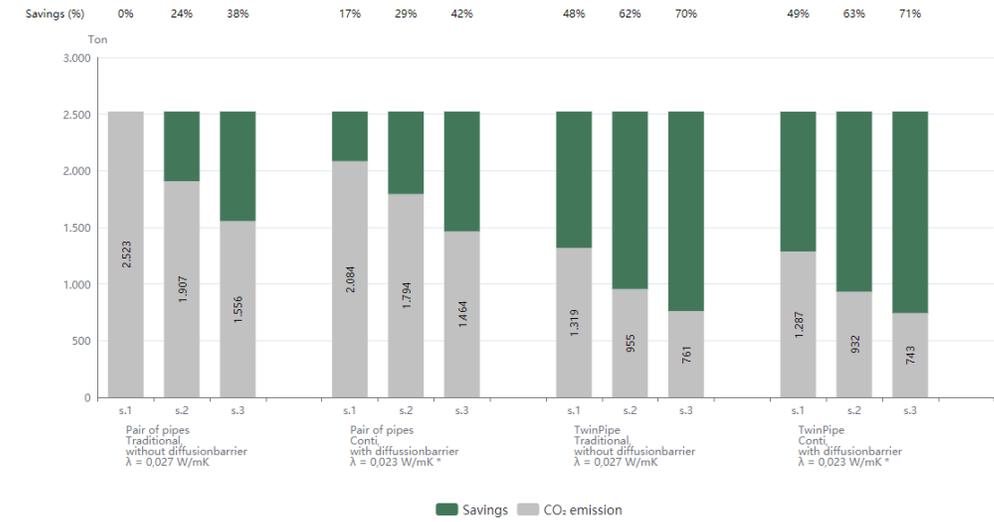
Dimensions DN20-DN200



CO<sub>2</sub> emission

Values are summarized across all years and compared to the pipe solution with the highest CO<sub>2</sub> emission

Dimensions DN20-DN200



Put heat pipe image here of our pipes from other calculation tool.

# TCO – Total Cost of Ownership

+ Energy loss for first year

+ CO<sub>2</sub> emission

- Compare 2 systems

## Dimensions DN20-DN200

To make a comparison between two solutions, select the systems you want to compare:

Pair of pipes Conti, s.2 with diffusionbarrier

TwinPipe Conti, s.2 with diffusionbarrier

Budget price *i*

99.255

248.139

148.883

Manual price *i*

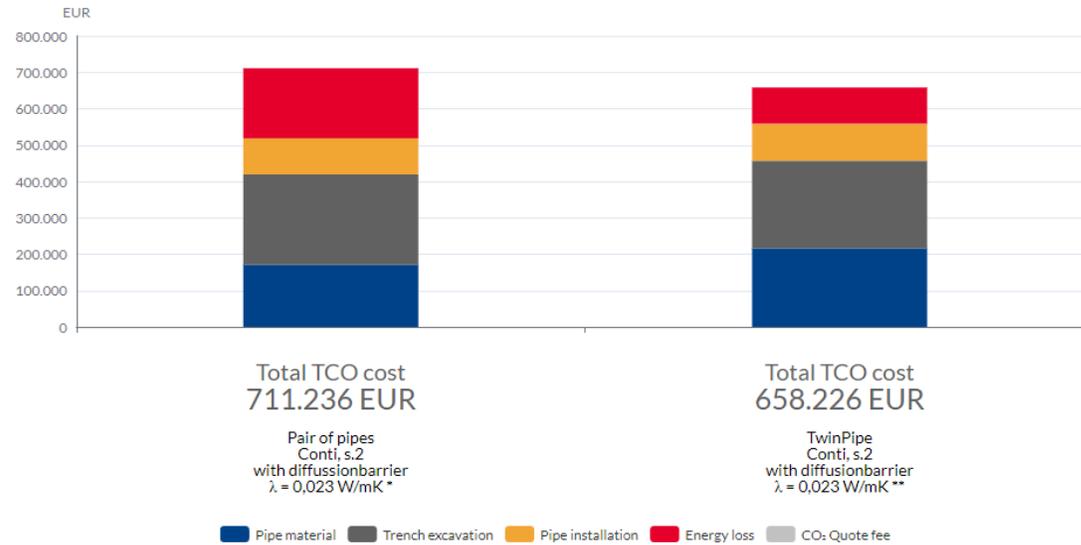
Budget price *i*

99.255

248.139

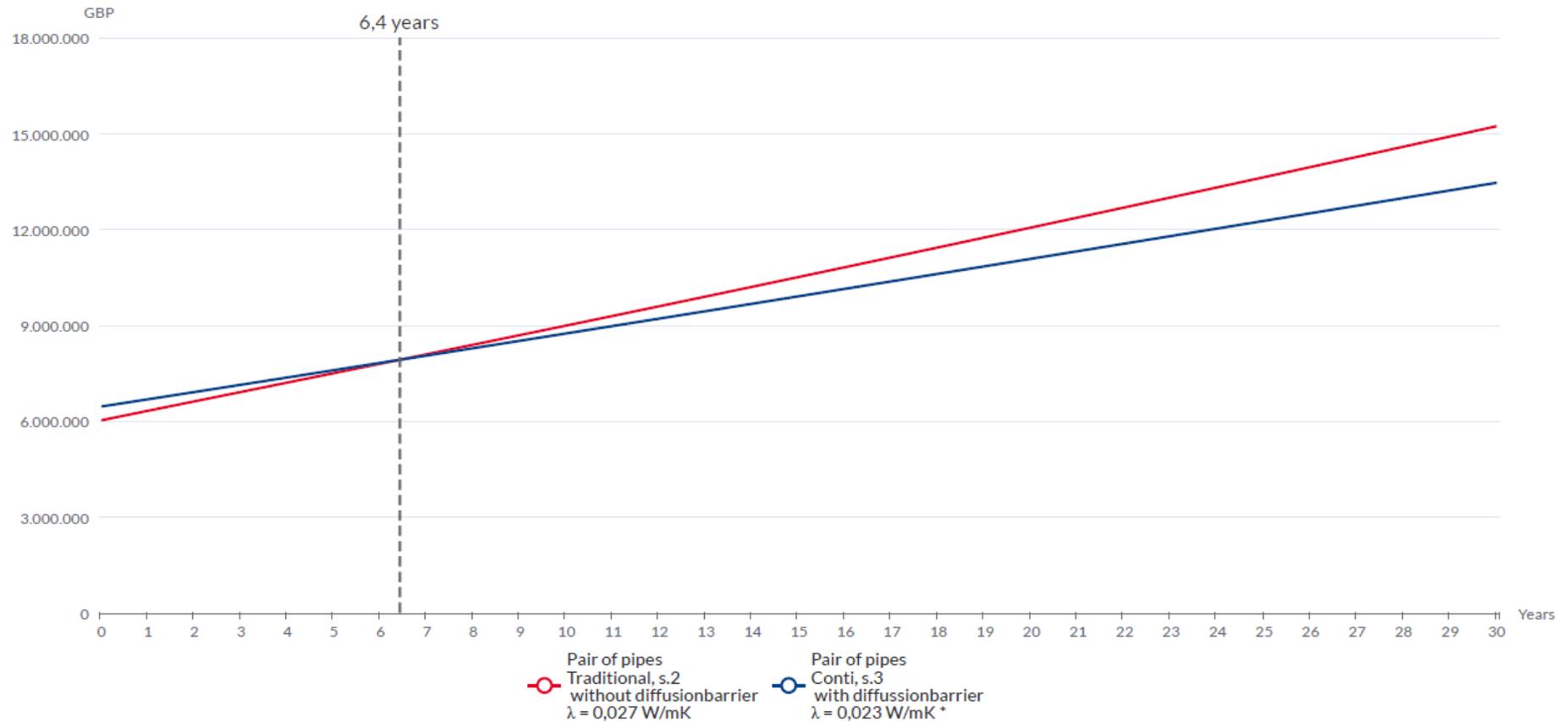
171.215

Manual price *i*



# TCO: Overview - ROI

Dimensions DN20-DN200



# Total Cost of Ownership perspective – UK guide lines

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- Heat Network code of Practice
  - The code is setting minimum requirements
  - Life cycle cost evaluation shall be included when choosing a system
  - "to achieve a low cost network – optimisation of routes and pipe sizing for minimum life cycle cost"
- Who are the stakeholders
  - Energy companies as the pipe owners
  - Developers
  - Contractors
  - Consultants

# How do the stakeholders act in relation to TCO evaluation

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- Energy companies as the pipe owners
  - Overall life cycle cost is taken into account by energy companies and system owners
  - However CAPEX is always a deciding factor (Think longer term than just upfront cost)
- Consultants
  - Some are still designing to the minimum requirement depending on the project.
  - Minimum requirement is understood as series 2, single pipe
- Contractors
  - Think about CAPEX



Thank you

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