E.ON Energy Infrastructure Solutions

Leading the energy transition for cities and industries

Energy Infrastructure Solutions (EIS) in the E.ON universe

Energy Networks

European Network **Operator #1**

>500.000 connected assets

1.6 mn. km energy networks

Energy Retail

Leading European energy supplier

~51 Mio. customers

Energy Infrastructure Solutions

>250 heating and cooling networks

>500.000 heat customers

>6.000 assets in operation

Key facts & figures

~20 TWh
of heat, steam and power produced p. a.

Assets >6,000

>500k
customers

>5,000 km
heating and cooling grids

250
Heating and cooling networks

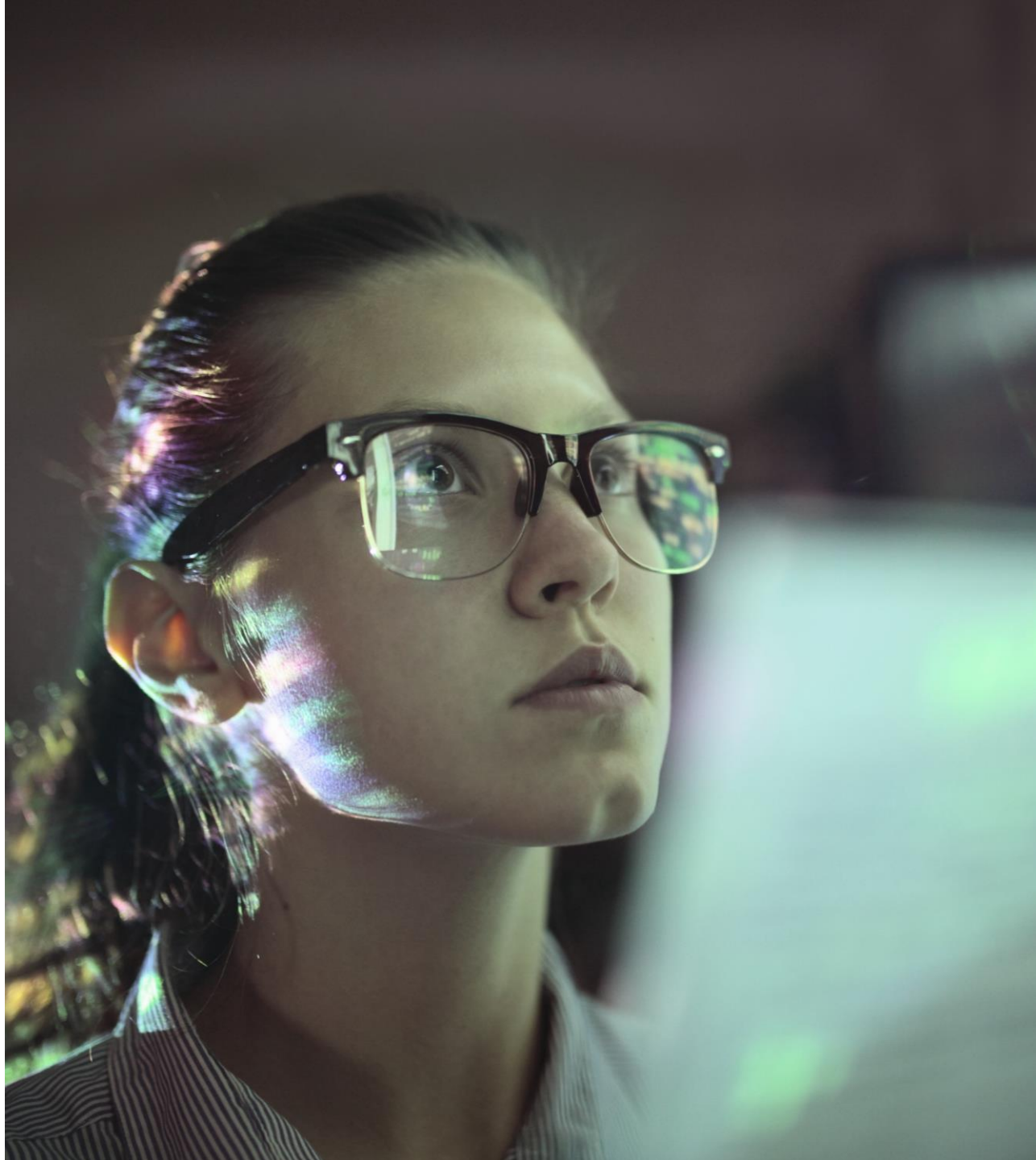
~5,000
employees

15 countries

Revenue (€m)
3,972

Investment (€m)
680

All numbers from 2023



E.ON brands united in EIS

e·on

Hanse Werk Natur

Süwag

FAMIS

GEOOP

avacon

BTB Energie... intelligent vor Ort

essent

LEW Lechwerke

bayernwerk

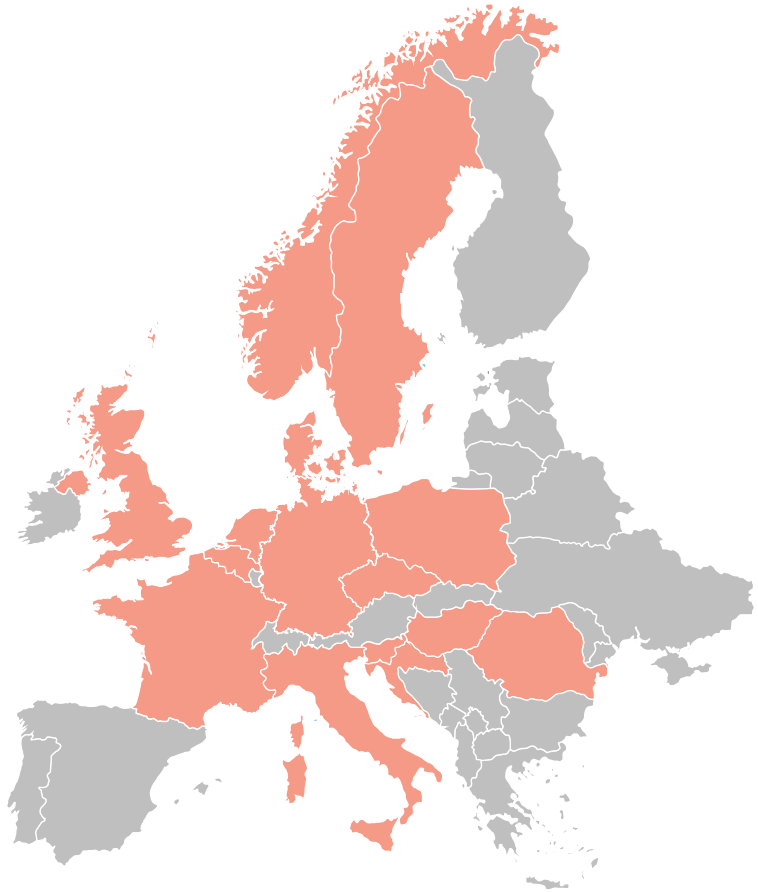
enviaM

Horisont energi

e.distherm

SEC SZCZECIŃSKA ENERGETYKA CIEPLNA

Coromatic
A part of the E.ON Group



Solutions for cities

District Heating

Providing high temperature heat to end customers connected to our urban grids; E.ON owns and operates grids and generation plants

City quarter solutions

Build entire low temperature energy systems for city quarters (power, heat, cooling); including retrofit solutions

District Heating & Cooling

Proposition

Heat delivery to end customers in cities;
heat produced in own or third-party power plants,
distributed via our district heating grids;
low-temperature heating and cooling grids

Characteristics

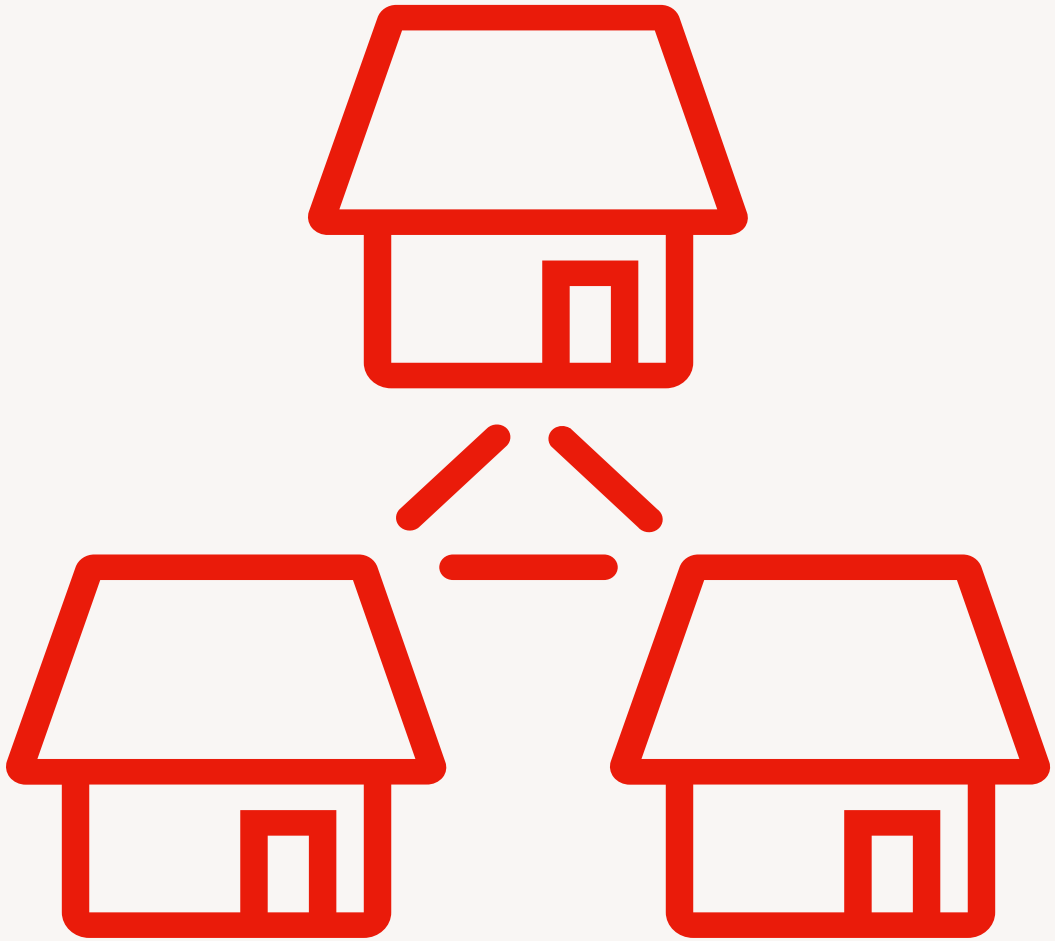
Operation of a grid infrastructure for multiple clients

Customers

Residential, commercials, municipal buildings
(e. g. households, shops, factories, hospitals)

Contract duration

~20 to 40 years plus



Low carbon heating and cooling networks in urban areas

Solutions for industries

Large-scale B2B

Onsite generation assets for energy intensive industries, mainly providing high temperature process heat, steam and power

Small & medium B2B / Commercial

Taylor made single or bundled energy solutions, mainly for power, heat and cooling

Industrial & Commercial Solutions

Proposition

On-site generation of heat, cooling, steam or electricity, using digitally enabled mix of technologies for single-site industrial & commercial assets

Characteristics

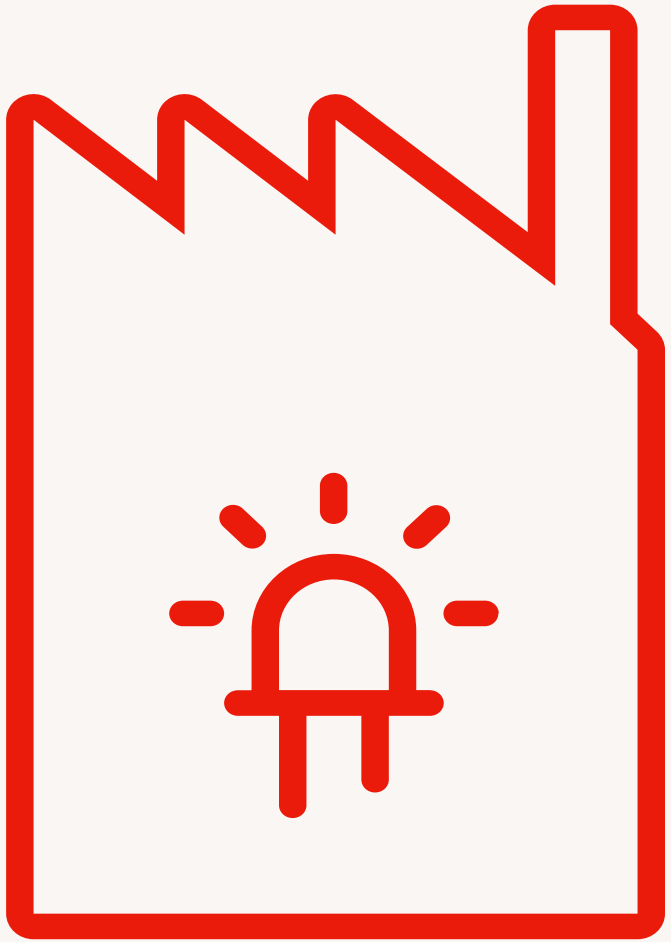
Single-site integrated energy solutions for individual clients

Customers

Industrial, commercial, or manufacturing
(e. g. factories, logistic centers, trade fairs)

Contract duration

~10 to 15 years



Integrated energy solutions for industrial and commercial customers

Add-on Solutions

Energy efficiency and digital services

Smart metering, asset optimization, uninterrupted power supply, HVAC, lighting, emergency power and other digital products

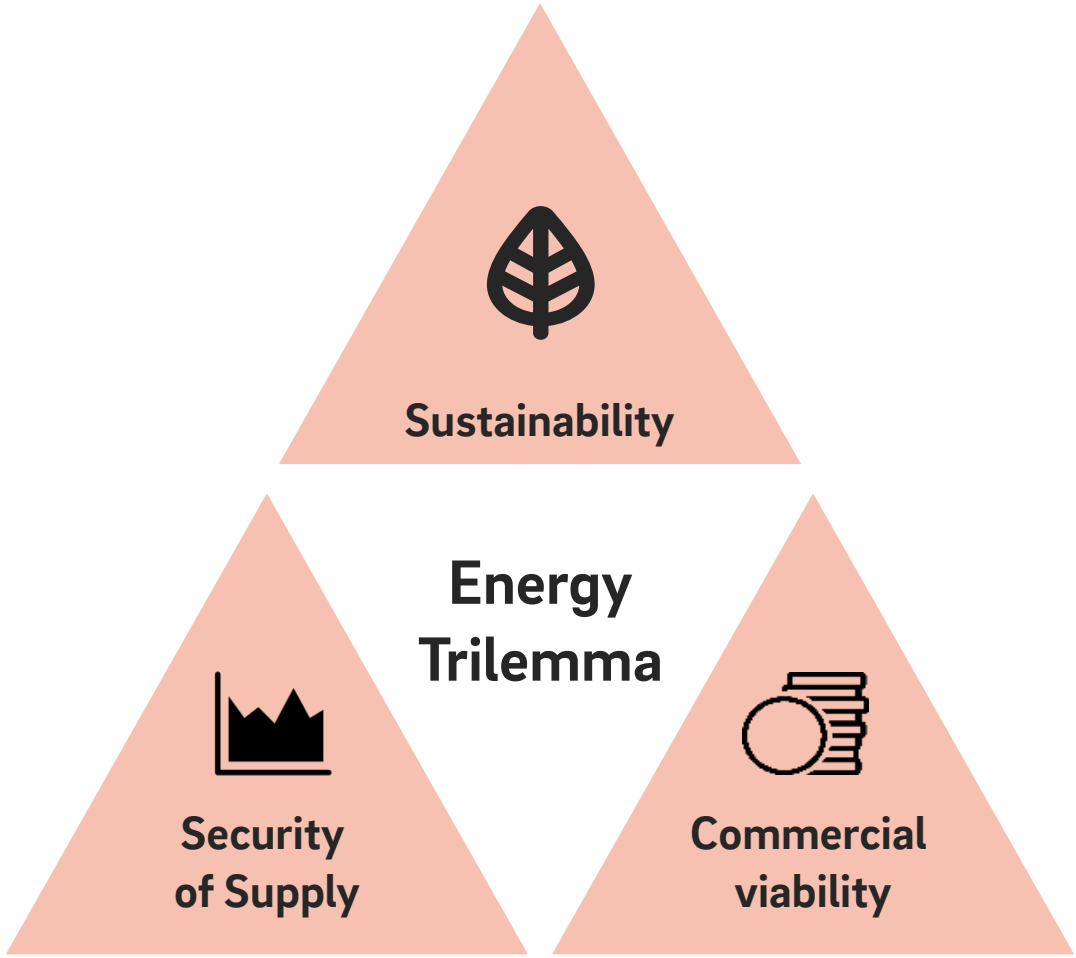
Carbon Capture & Storage / Usage

Closing the customers' carbon value chain by CO_2 capturing, transport and storage

As an energy partner we empower our customers to embark on a green transition

We are more than just an energy supplier

- Balancing sustainability, security of supply and commercials
- Engineering excellence at European scale
- Technology agnostic solutions
- Leading digital technology
- Regulation, financing and funding
- Broad value chain coverage (Design, Finance, Build, Operate)



Essent EIS

07/10/2024

Agenda

- **in a nutshell: Essent**
- **Challenges in the Dutch energy market**
- **Essent EIS proposition and technologies**

Essent

Since 1909. 100 + years of experience in the Dutch energy sector

Diverse portfolio of brands and companies which strengthen each other

Part of E.ON since 2019

Customer service with the highest NPS score

2.900 employees (FTE)

2,5 mln customers

12 service partners

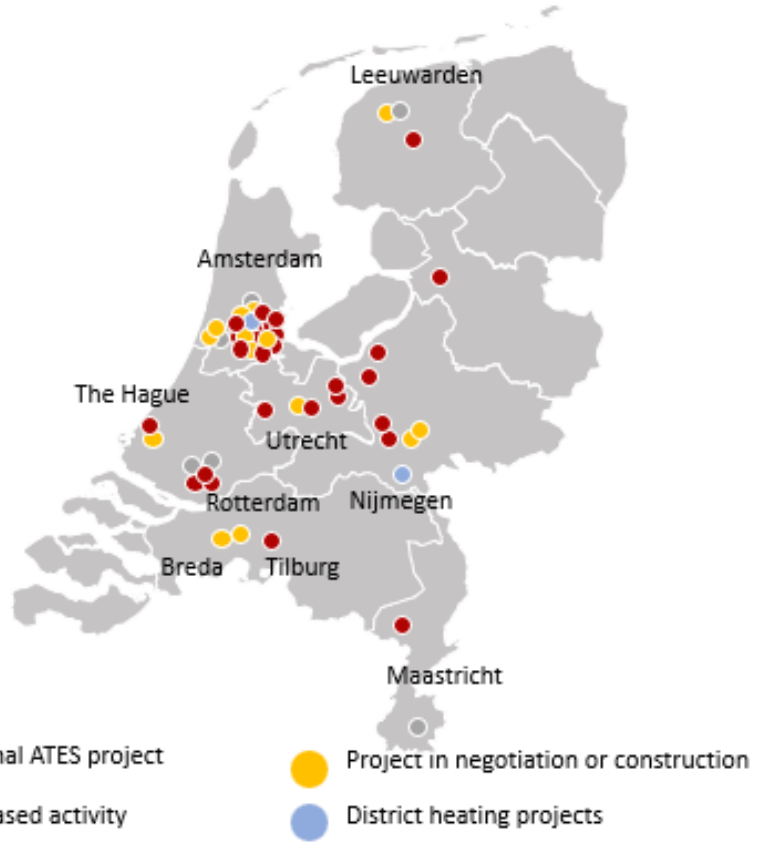
ENERGY SALES & MARKETS

FUTURE ENERGY HOME

ENERGY INFRASTRUCTURE SOLUTIONS

Essent Energy Infrastructure Solutions (EIS)

- 7.6K Residential connections / 9.6K HEQ
- 274 Commercial connections / 17.6K HEQ
- 104 GWh Heating energy production
- 36 GWh cooling energy production



Challenges in the Dutch energy market

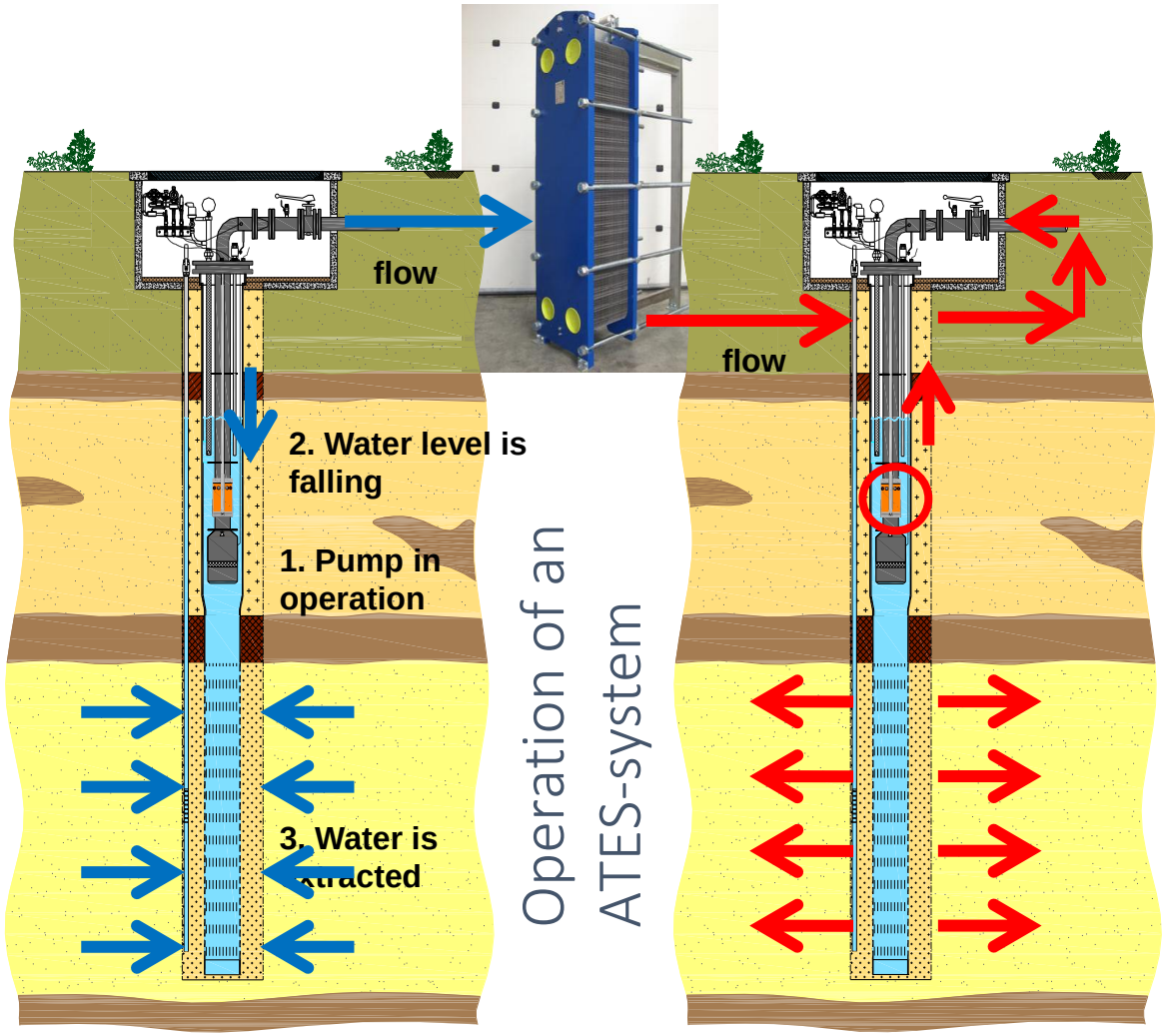
Affordability

New Heat Act

Congestion

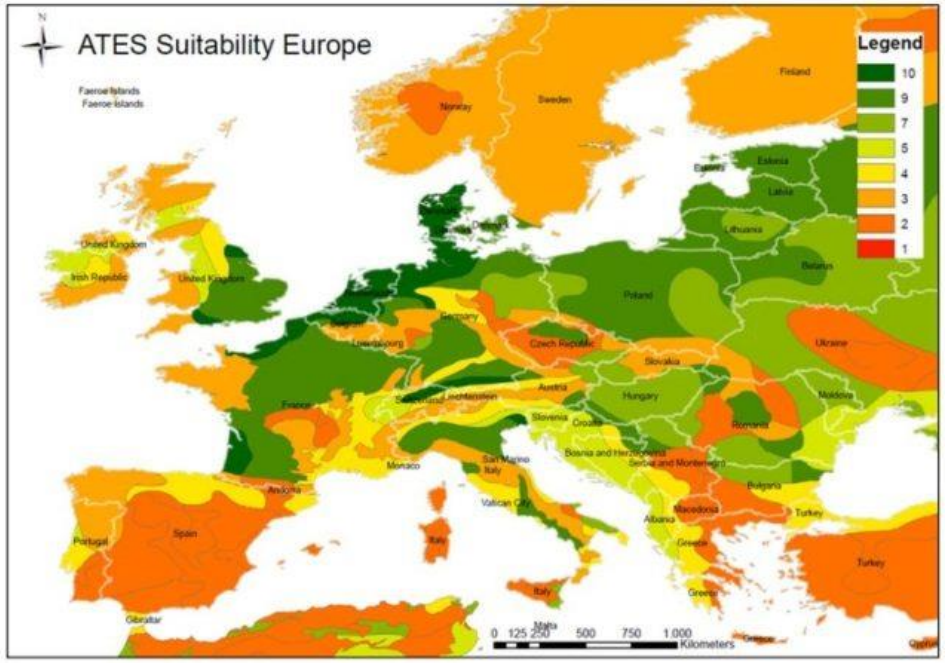
EIS –NL propositions and technologies

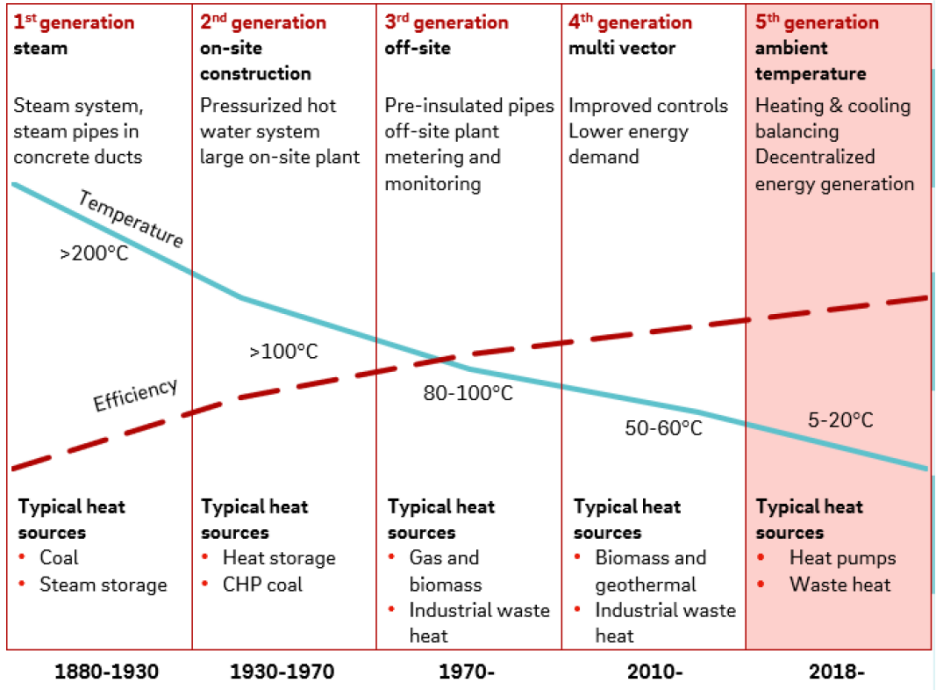
- DBFMO
- 30 years exploitation period
- New build with low temperature ATES driven



EIS –NL technology vs UK technology

Netherlands is frontrunner ATES in the world
2800 ATES systems in operation
2,5 TWh/a
85% located in the Netherlands





Some of our projects

Merwede

4250 -> 6000 app over 8 year build

72.000 -> 100.000 m^2 commercial

ATES pumps olympic swimming pool every 2 hours

Overhoeks Amsterdam

700 app

50.000 m^2 commercial

2008-2038

Development during 2008 financial crisis

Comfort Leidsche Rijn

750 app

48.000 m^2 commercial

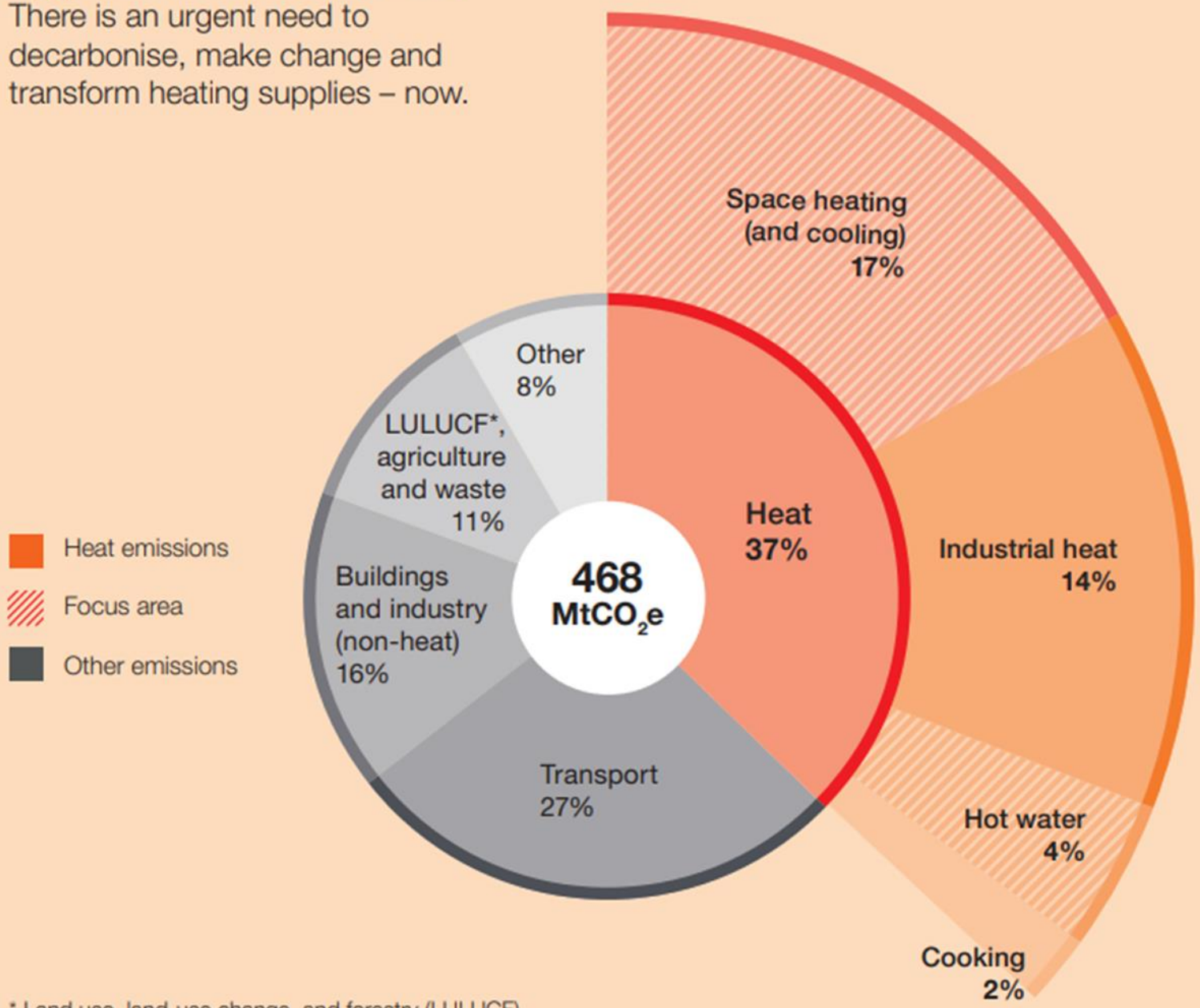
2018 - 2053

UK Heat Networks

Barry Shade
Sales Manager
EIS UK – Heat Networks
03/10/2024

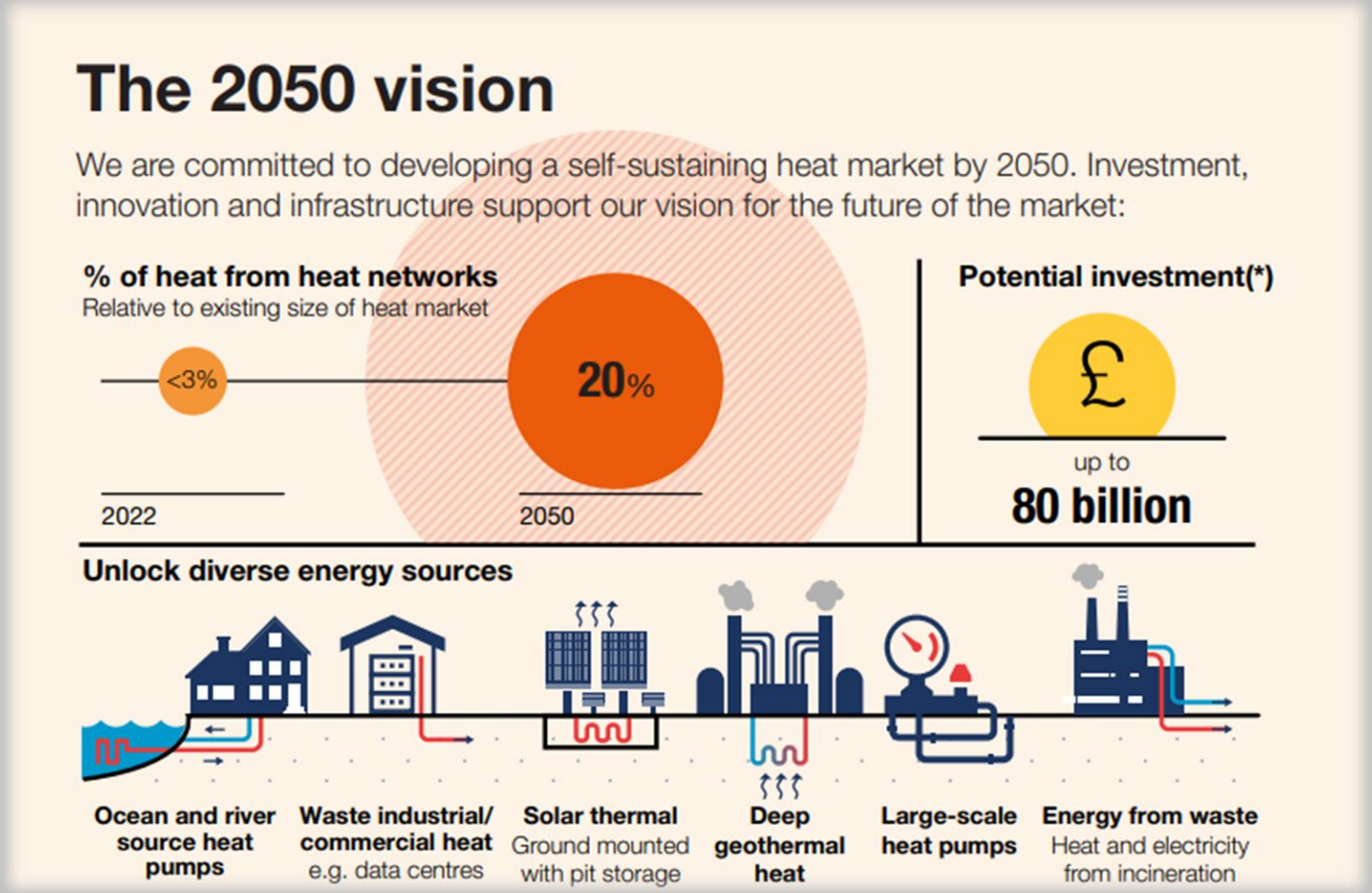
Decarbonisation of Heat

Heat in buildings is one of the biggest sources of UK emissions. There is an urgent need to decarbonise, make change and transform heating supplies – now.



* Land use, land-use change, and forestry (LULUCF)

UK Government Vision



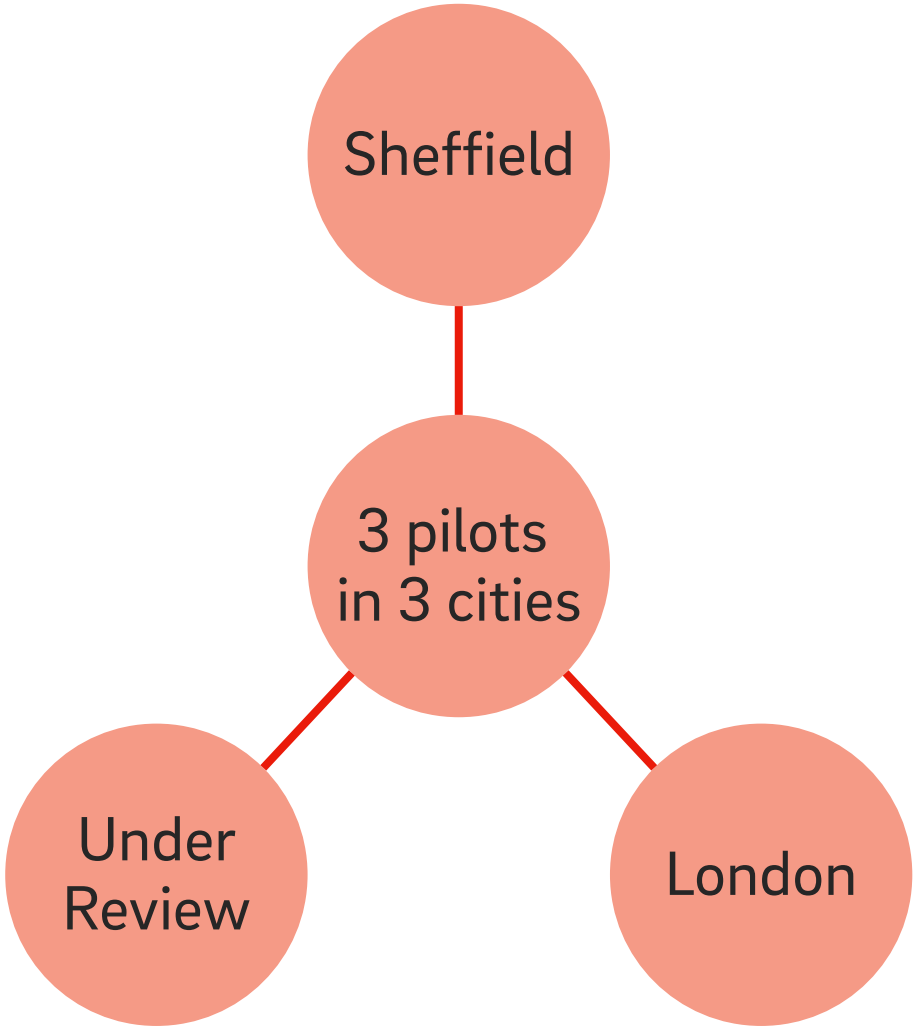
Future growth of heat networks – Heat Zoning

Context: UK Government 2050 Policy

	Today	2050	Change
	450,000 homes 2% of homes	5,000,000 18% of homes	18% Growth pa
	£300m CAPEX pa	£80 Billion Investment	£2,800M CAPEX pa
	Gas boilers & gas CHP engines	Heat Pumps & electric boilers	Power not gas Heat pump scale Skills shift

- Practical implementation in via local planning frameworks
- Infrastructure planning: E.ON dialogue with GLA + London Boroughs
- Quarterly meetings with Tower Hamlets, Newham, City of London etc.

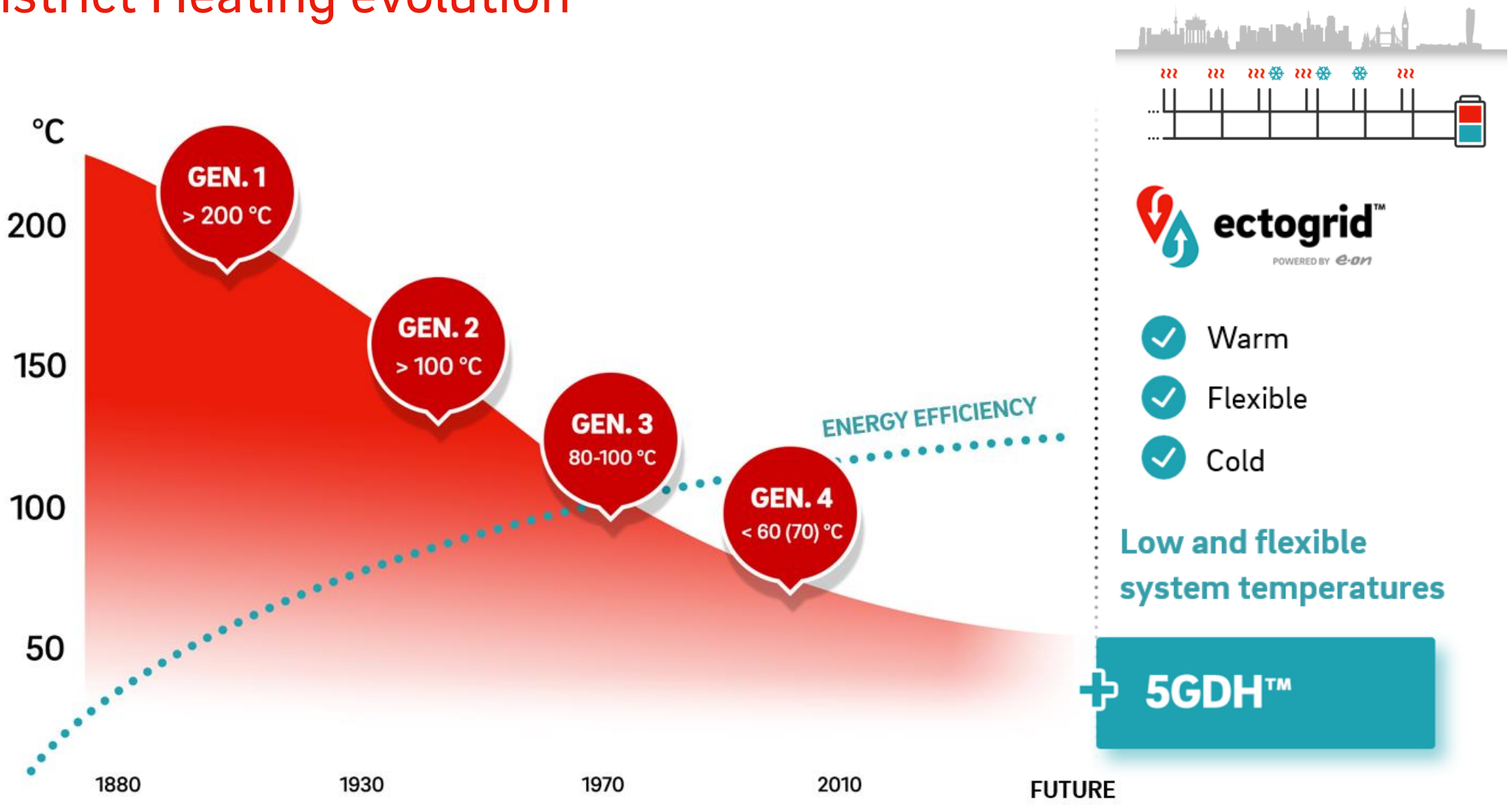
Our E.ON UK ambition



Sheffield

London

District Heating evolution



ectogrid™

E.ON ectocloud™

Cloud-based digital platform that controls and optimizes E.ON ectogrid using AI and IoT-technology.

Active balancing

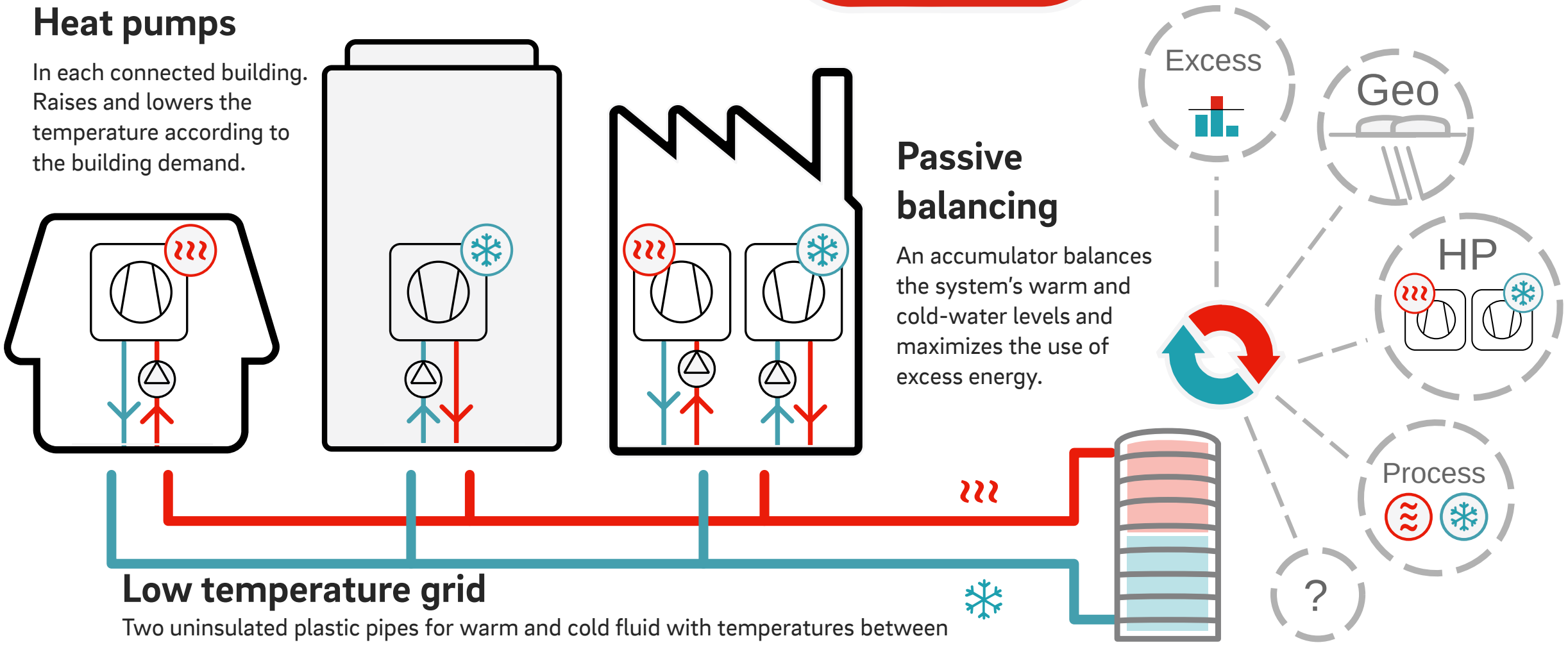
When all available energy has been balanced, new energy can be supplied with the help of different types of energy.

Heat pumps

In each connected building. Raises and lowers the temperature according to the building demand.

Passive balancing

An accumulator balances the system's warm and cold-water levels and maximizes the use of excess energy.



Low temperature grid

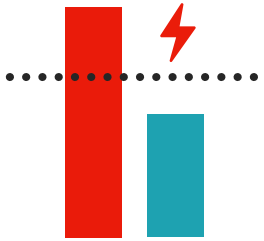
Two uninsulated plastic pipes for warm and cold fluid with temperatures between 10 and 40 °C. The flows are bi-directional due to distributed pumping.

Why choose E.ON ectogrid?

ectogrid™

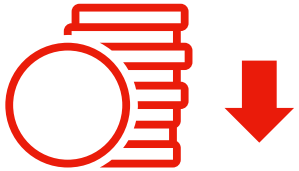
2-in-1-system

A complete energy system for heating and cooling



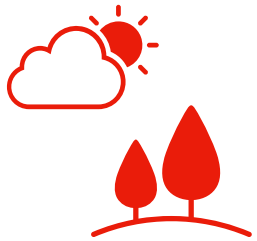
Minimize supplied energy

Always use all available energy in the system through balancing and sharing



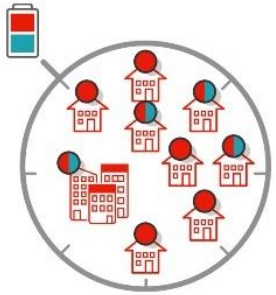
Reduce energy costs

Limiting the amount of supplied energy means more competitive prices



Minimize climate impact

Enabling greater use of intermittent renewable energy can result in a zero-emission solution.



Cost effective and scalable

The lack of expensive special components means a decentralized system that you can scale up to cover more buildings or even a whole neighborhood.

Silvertown

Our first ectogrid project in the UK.

6,000 residential units + 400,000 sqm mixed use space. Developed by Lendlease.

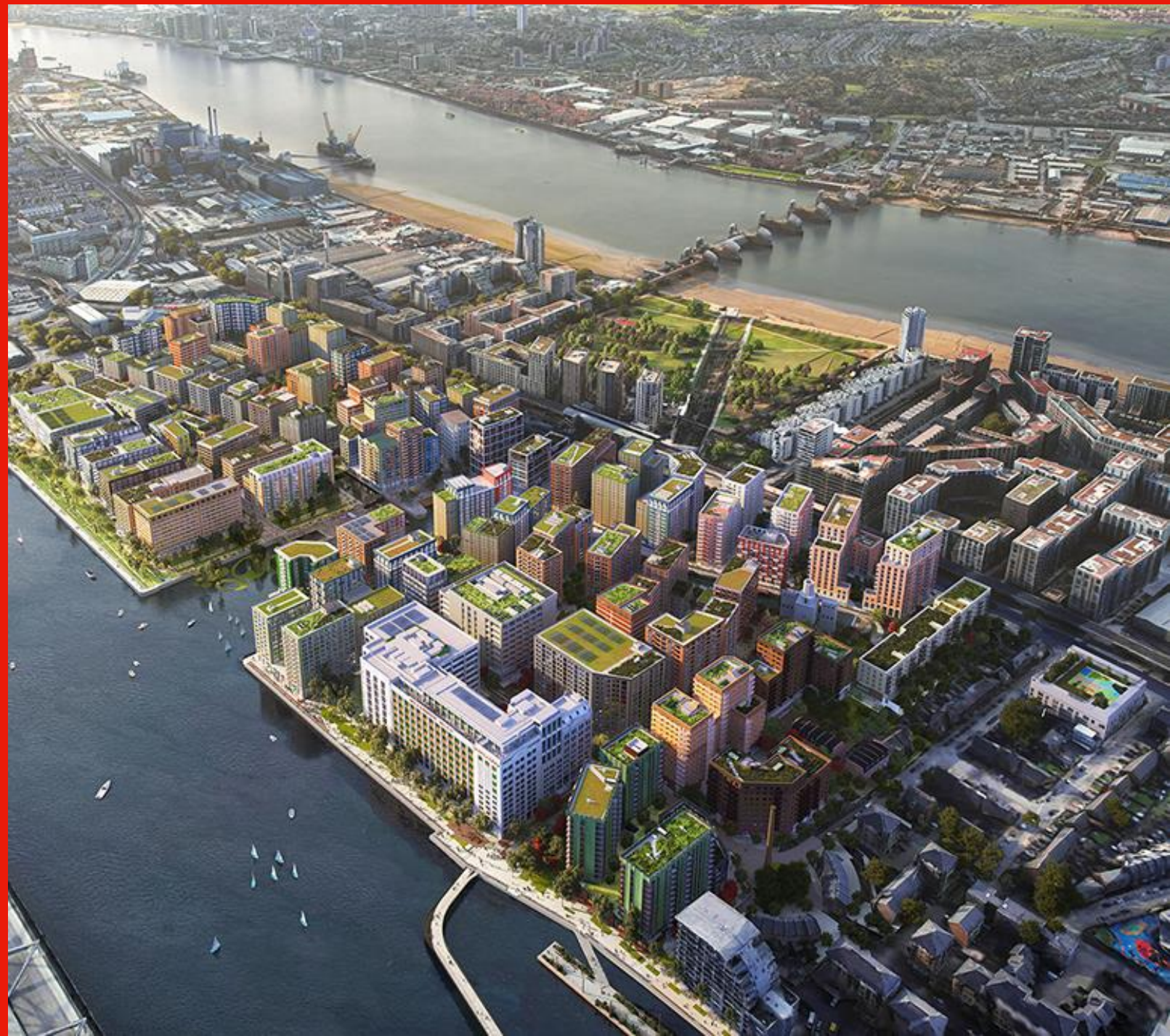
2023-2038 development schedule.

Heat on Q4 2024.

First residential plot Q4 2025.

- 34 MW heating & cooling demand.

- 4K tonnes of carbon savings per year.



Thank you

e·on