

# Citigen Decarbonisation

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# The next 8 minutes

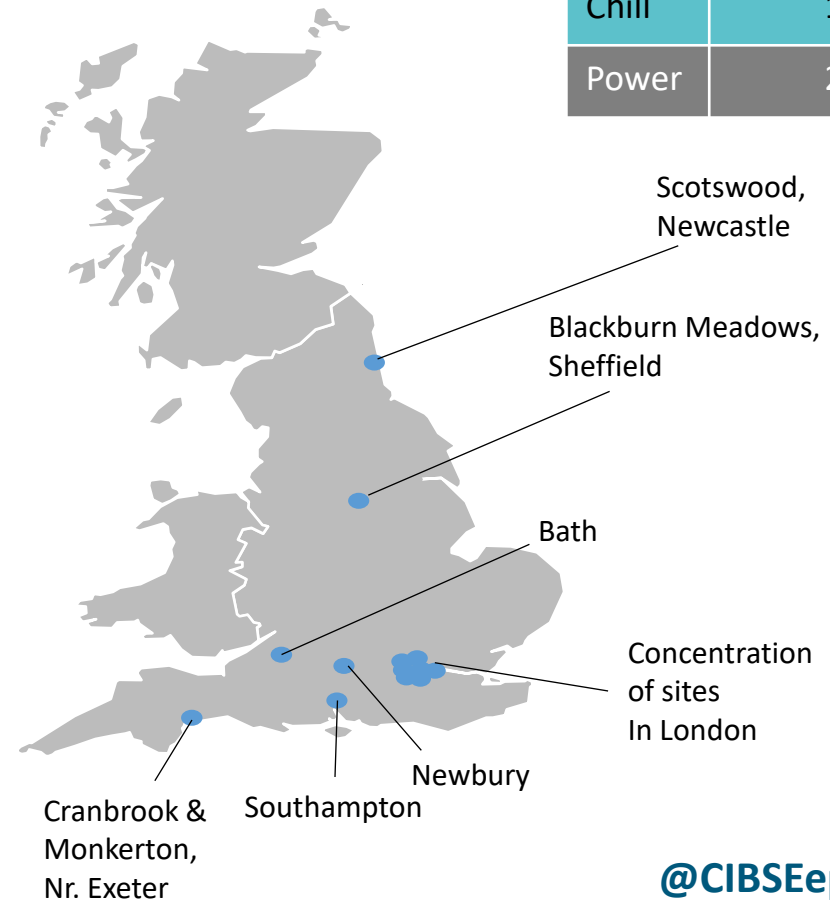
- Introduction
- Citigen Decarbonisation Journey
- Can we make Citigen a Low/Zero Carbon Heat Network?



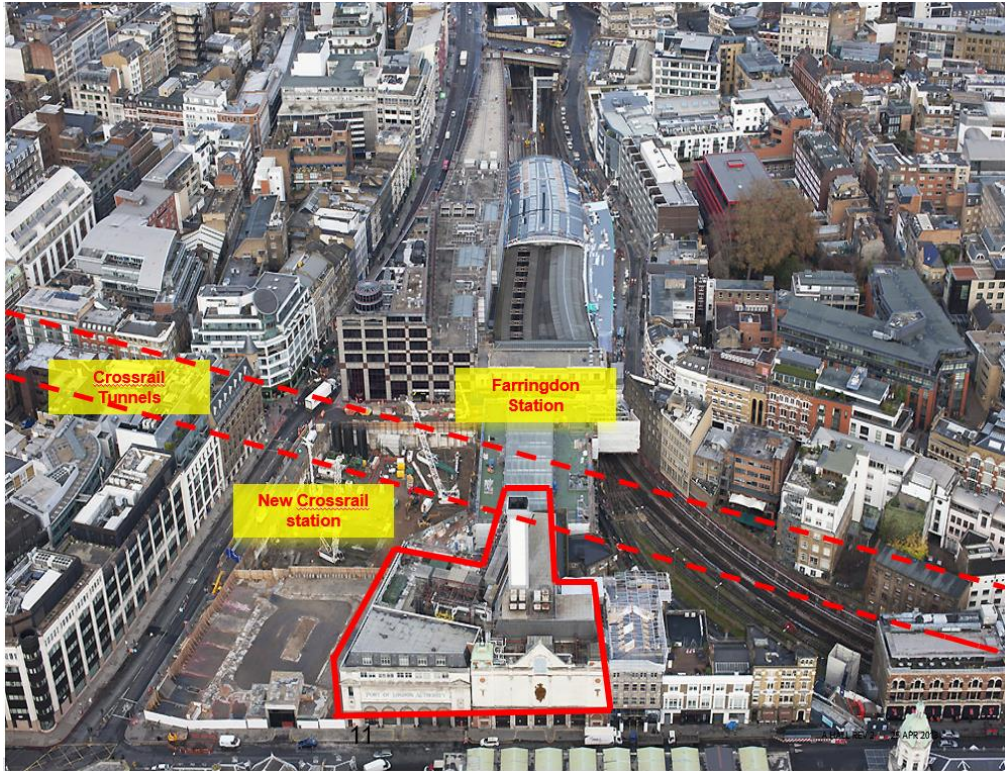
# Introduction

- 67 UK Schemes
- Committed to decarbonising
- Jewel in the crown
- 20,000 tonnes of CO2
- Citigen Decarb Diet

	Capacity MW	Generation GWhr
Heat	270	185
Chill	10	20
Power	26	83



# Energy Centre – Background & History



ESCO Partnership  
Since 1991



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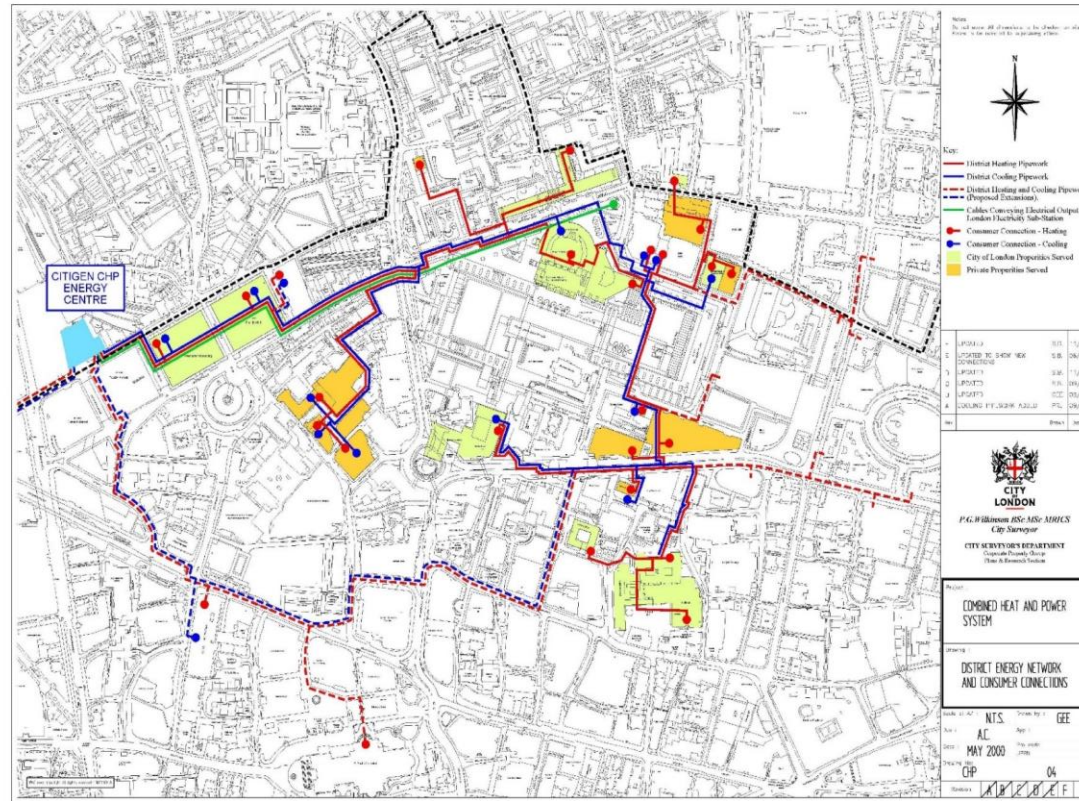
# Energy Centre - Network



Guildhall



Barbican



11km network  
hot water @ 100°C for heating & chilled water @ 6°C for air conditioning



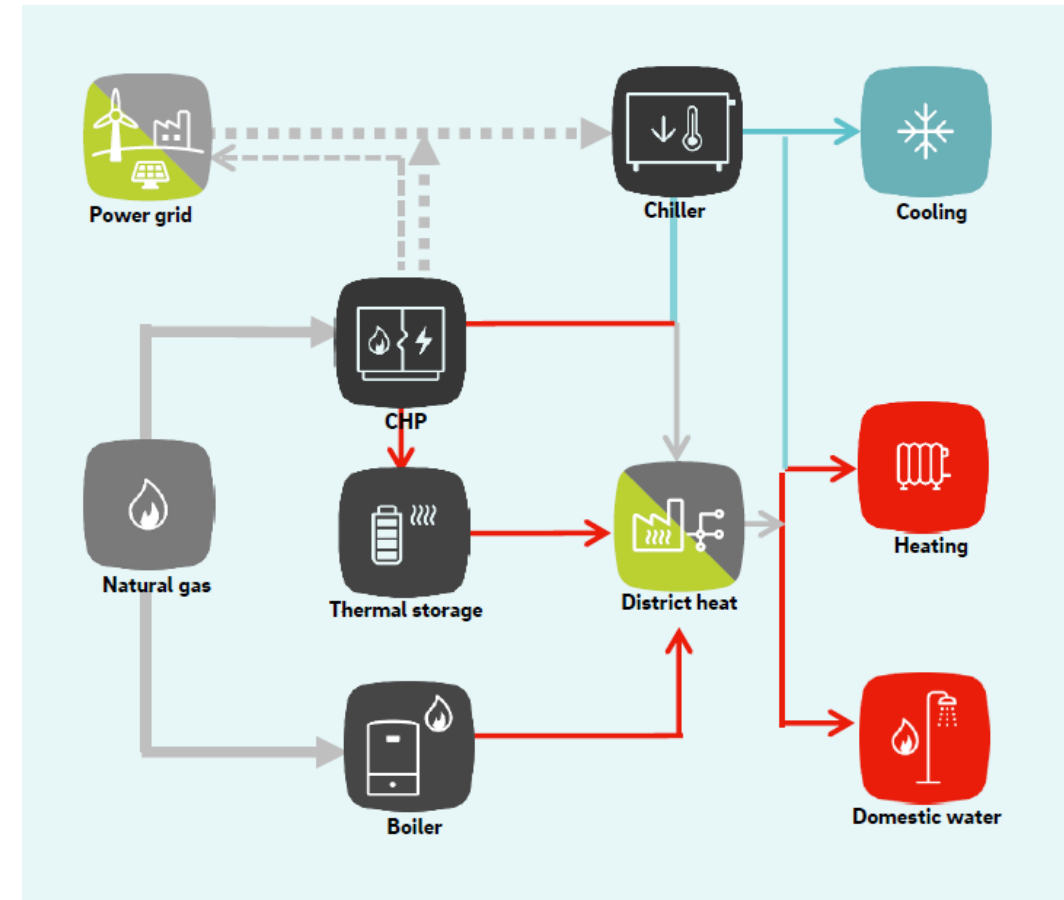
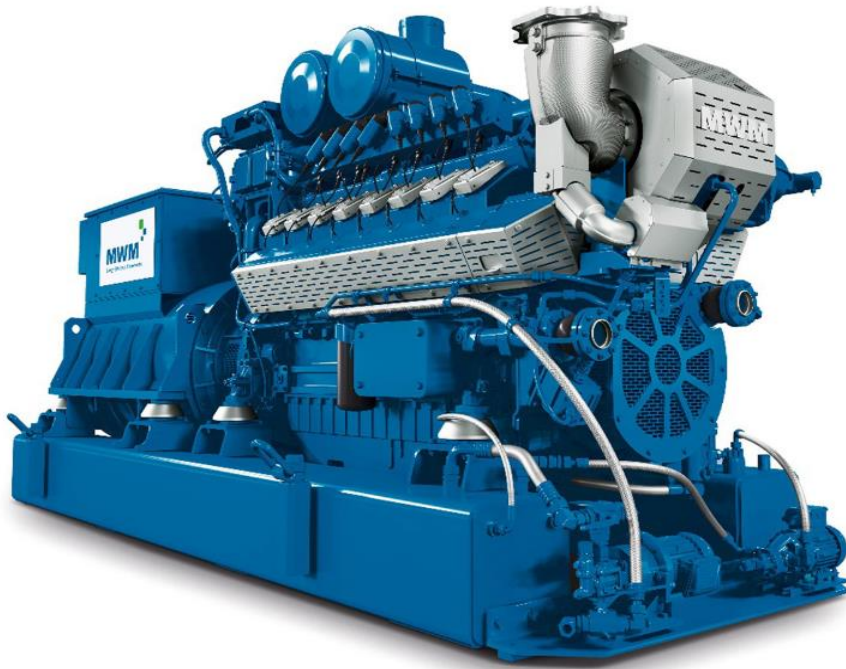
Smithfield Market



Pipework in tunnels @CIBSEepg

# Energy Centre – Existing Assets

- Existing Installation
  - 9MWe CHP-led energy network with chillers, gas boilers and a thermal store





# Energy Centre – Heat Pump

## Old CHP Engine Bay



## Heat Pump

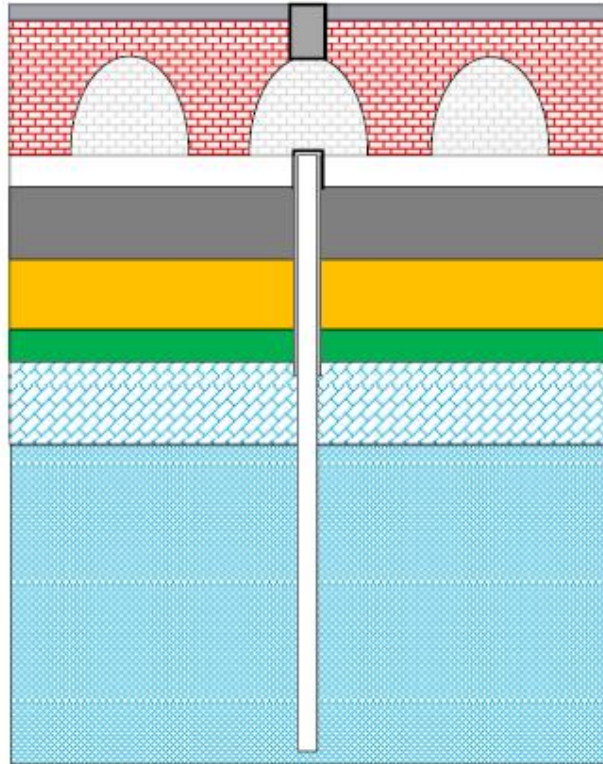


# Energy Centre – Renewable Sources of Heat

## Busy City Street



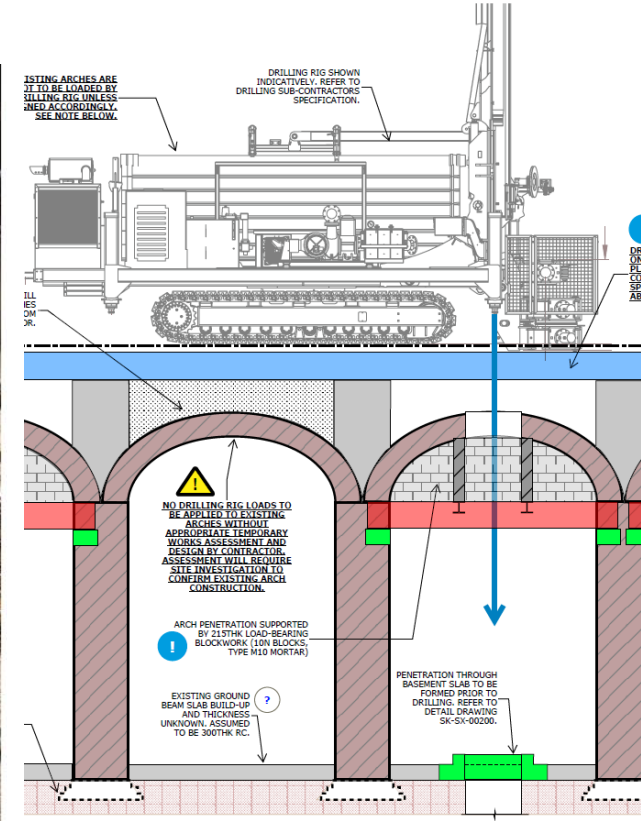
## 200M Borehole



## Lack of Space



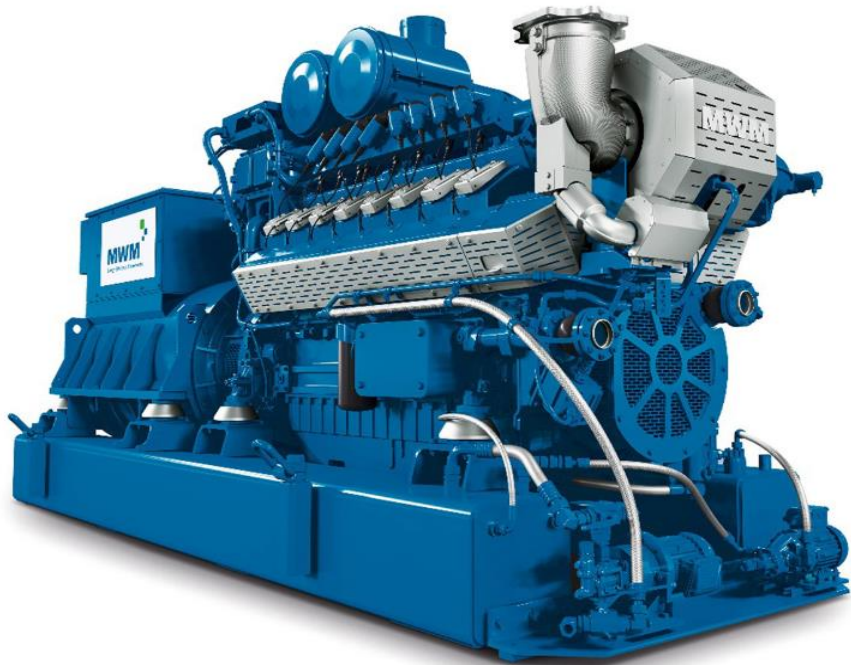
## Structural Challenges



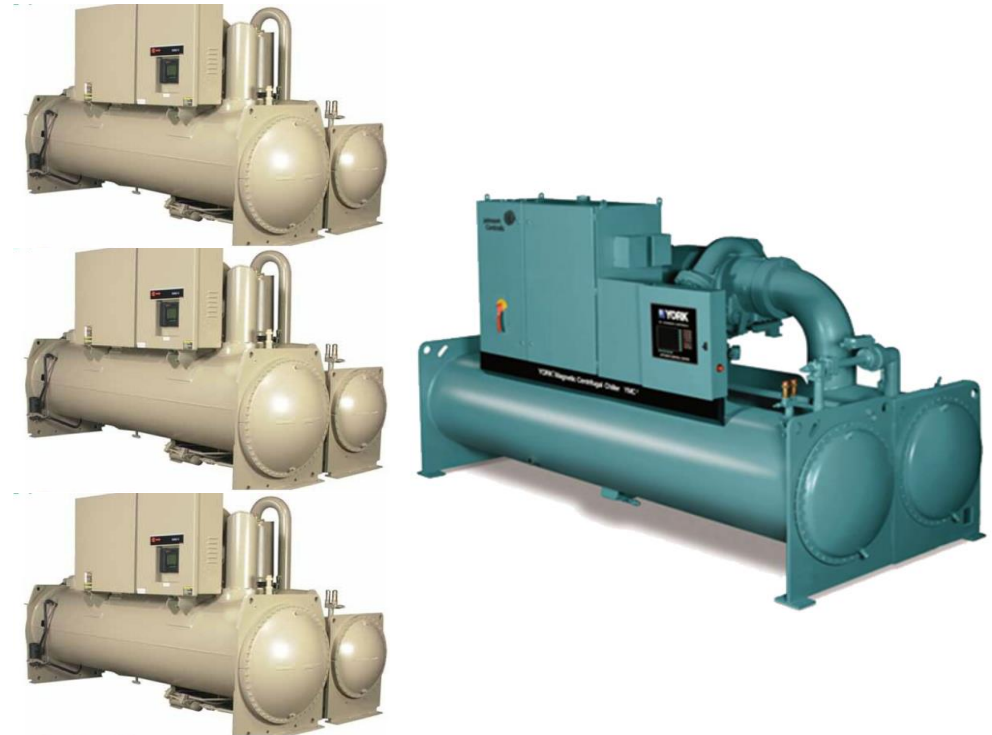


# Energy Centre – Waste Heat Sources

## CHP Intercooler

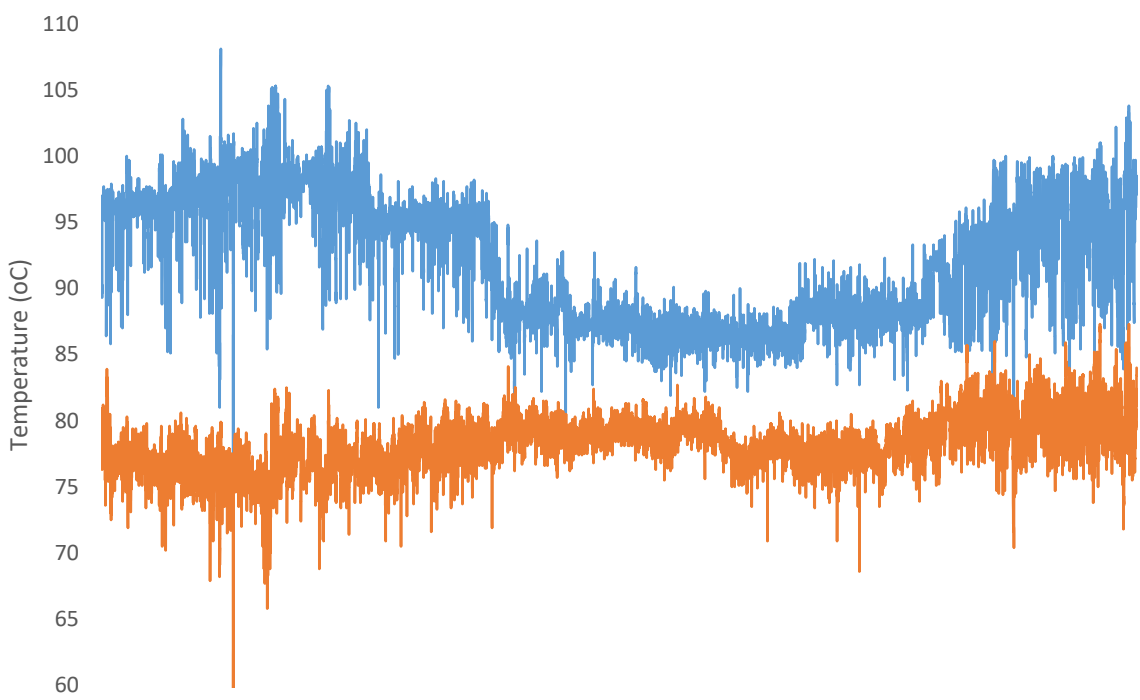


## Electric Chillers



# Energy Centre – Temperatures

## 2019



## Future



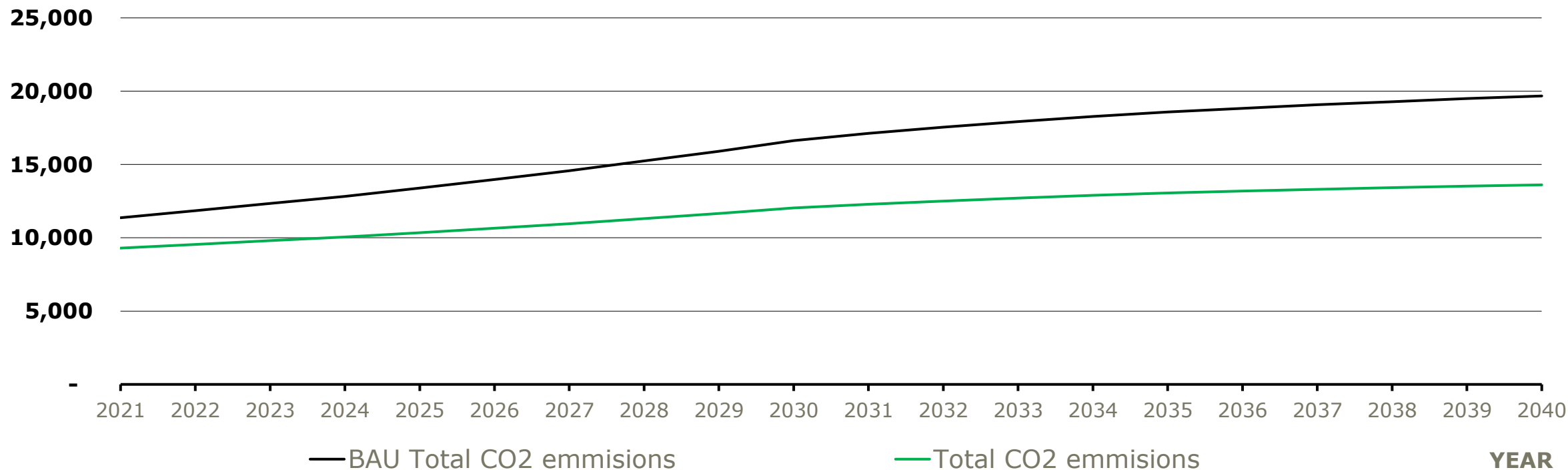


# Energy Centre – CO2

## CARBON EMISSIONS

30% Savings, 100,000 tonnes over 20 years

TON CO2/YEAR



# Energy Centre – Business Case / Government Support

**ofgem e-serve** Making a positive difference  
for energy consumers

Non-Domestic  
Renewable Heat  
Incentive (RHI)



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# Can we make Citigen a Low/Zero Carbon Heat Network?

- Yes
- Journey & decarbonise grid (or hydrogen)
- Old buildings - High Temperature HPs & tackle return temperatures
- Gas & electricity inequality
  - Gas tax
  - Discounted electricity
- Concession Zones - mandated connection in return for low/zero carbon heat



# Thank you!

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The E.ON logo is displayed in a bold, red, sans-serif font. The 'e' is lowercase and the 'ON' is uppercase.

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