In conjunction with the CIBSE South West Region and the Young Engineers Network
Energy Performance Group mission

• To improve the energy performance of buildings
• Provide an expert Q&A forum covering key aspects of energy performance
• To enable networking opportunities, promoting collaboration amongst our members
• To respond to and support the implementation of emerging legislation
Our speakers

1. Sam English - Worcester Bosch
2. Samantha Nicol - Bristol Energy
3. Kate Watson - CSE / Futureproof

Moderator: Roger Macklin, Hoare Lea
Keeping Bristol on the Gas Grid

Sam English, Development Engineer, Worcester Bosch
Samuel.English@uk.bosch.com
Challenges of Decarbonisation

- Household appliances that rely on gas
  - Boilers
  - Hobs
  - Cookers
  - Gas Fires
- Infrastructure
- Behaviour
- Seasonal fluctuation
Seasonal Fluctuation

UK Seasonal Energy Demands

GWh per day

Winter | Summer | Winter | Summer | Winter | Summer

Leeds City Gate

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Suitability of the Gas Grid
Conversion
Conversion
Conversion to a heat pump

Larger radiators,
External heat pump components
New controls
Thermal store
Guess which one is the hydrogen boiler
Hydrogen Boiler Conversion

Just replace the boiler
Thank you!

Sam English, Development Engineer, Worcester Bosch

Samuel.English@uk.bosch.com
Energy demand

• UK government set a target for carbon neutrality by 2050

• To achieve this **all** heat and power will be need to be carbon free
Domestic Heat and Power Demand

UK Domestic Heat by fuel type

Average Domestic Energy Use

- Gas: 62%
- Oil: 22%
- Electric storage: 13%
- Electric room: 3%

Department of Business Energy and Industrial Strategy, 2019

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"Honestly? I preferred when we didn't talk about the elephant."
27 million
Existing homes in the UK
25 million

Need to be retrofitted
• 25-30% UK CO₂ emissions from residential sector

• UK residential emissions have grown over last 40 years

• 1990-2017 – SAP ratings increased 20 points

• 63% of property’s are in owner occupier tenure

• 92% are classified as ‘Able to Pay’

• 13.2 million properties

• 58.5% of all English Homes and....

• 18% don’t even meet the Decent Homes standard
To achieve 80% reduction in CO2 emission

500,000

Homes need to be retrofitted per year
Now we need to do even more to meet carbon neutrality targets
Bristol context

- Approx. 200k households in the city
- 37% of properties are solid wall construction
- 25% of the city is a conservation area
- Approx. 400 listed buildings
Motivations for retrofit

• In the owner occupier sector the most common reasons* for doing home improvements are:
  • Reducing energy bills or
  • Because the house is cold in winter
  • 17% of householders ranked this as most impt.

* After redecoration and installation of new kitchen or bathroom.
Futureproof

- BEIS funded pilot – West of England
- Building the supply chain in the RMI sector
  - Drive customer demand to improve energy efficiency through a ‘whole house’ approach
  - Engage with and improve the knowledge within the RMI sector of quality whole house retrofit
- We support customers with impartial advice
- We’re training builders
- We connect householders and builders, and grow the market for retrofit

RMI – refurbishment, maintenance and improvement
https://www.futureproof.uk.net/

@CIBSEepg
Thank you!

Kate Watson, Senior Project Manager – Futureproof, Centre for Sustainable Energy
Kate.Watson@cse.org.uk
Getting Bristol off the Gas Grid

Samantha Nicol, Head of Innovation
Samantha.nicol@Bristol-energy.co.uk
We’re a sustainable energy company, with social value at our heart. We supply renewable energy to local and national customers.

We’ve contributed £12m of social value back to the city since we launched in 2015. Our mission is to create profit for purpose, by giving back to communities.
Rapid change is possible

Year 1900: One Motor Vehicle  
Year 1913: One Horse & Carriage
And we have seen rapid change in heat...

25% with central heating

90% with central heating
No silver bullets... but a lot of opportunities

- District heat
- Heat pumps
- Low carbon gas
- Smart controls
- Electricity networks
- Generation and storage
- Retrofit
- Bioenergy
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<th>Challenges</th>
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<td>Which technology?</td>
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<td>Capital costs?</td>
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<td>Which installer?</td>
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<td>Smart controls?</td>
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<td>Maintenance?</td>
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<td>Will I like it?</td>
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<td>Retrofit?</td>
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<td>Which supplier?</td>
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<td>Will I be locked in?</td>
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<td>Subsidies?</td>
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<td>Intrusive?</td>
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But there are many challenges...
Consumer protection and policy are critical

Customers need ...  
To know what they’re buying  
Get great experiences  
Be future proofed  

Energy service providers need...  
Clear policy  
Pricing signals  
Ability to innovate
We’re developing solutions...

• Trialling Heat as a Service

• Launching our heat retail offer

• Local energy system design and development
Thank you!

Samantha Nicol, Head of Innovation
Samantha.nicol@Bristol-energy.co.uk