# Housing Asset Strategy Forum | Home Energy Management and the move to 5G technology

## Insight report

Event: Housing Asset Strategy Forum
Date: 17 September 2024
Location: Online

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On 17 September 2024, leaders from across the housing sector met to discuss the latest developments in housing asset management, with a focus on home energy management and the move to 5G technology in homes.

| SPEAKERS | |
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| Shelagh Grant | Chief Executive, The Housing Forum |
| Ian Allan | Head of Market Strategy, Switch2 |
| Chris Paul | Partner at Trowers & Hamlins |
| Cathy Olphin | Sustainability Manager, Switch2 |

### The growth in heat networks and the home energy context

Ian Allan, Head of Market Strategy at Switch2, introduced the concept of heat networks, the ambition for heat networks, and how 5G is revolutionising heat network management. Switch2 has over 35 years of experience managing heat networks for social and private landlords, covering over 100,000 dwellings.

Heat networks fall into two categories: district heating, which is larger, taking often renewable energy, and residential heat networks, which are smaller but cover a larger share of the market. Over 50% of residential networks have multiple buildings, but always have a single freeholder who operates it.

Over 90% of residential heat networks are operated by gas, but they are transitioning into more renewable sources.

Currently 2 – 3% of heat is provided by heat networks, which the government is hoping to scale up to 20% by 2030 with a series of grant programmes.

Moving to 5G communications has benefits for heat network management, since it brings in machine-to-machine communications. This enables more reliable data collection, and a lower cost of operating heat networks as a result.

Switch2 is able to connect energy centres with residential smart meters, bulk meters, and is able to provide data analysis and customer insight.

### Implications and preparations for building owners

Chris Paul, Head of Energy and Sustainability at Trowers & Hamlins, ran through the implications of new regulations for building owners.

Regulating heat networks is particularly important as 30% of the UK's greenhouse gas emissions come from buildings. Decarbonising heat is therefore crucial to reach net zero.

Many heat networks have registered as trusts to voluntarily take on additional regulatory burdens. The CMA Heat Networks Market Study (2018) pointed out a lack of regulatory protection for consumers, and the Energy Act 2023 put into place consumer protection regulations.

Secondary legislation for consumer protections for heat networks will put in a number of new provisions, including reporting requirements, guaranteed

standards of performance, complaints handling procedures and statutory step-in rights.

The regulations also bring in two new authorised activities as heat network operator and heat network supplier. The operator has the regulatory responsibility to sit with the controlling entity and to invest in repairs and maintenance. Meanwhile the supplier has the responsibility to provide the heat itself.

Technical standards have also been introduced, but consultations are ongoing to implement these.

Heat network zoning is ongoing, with pilot schemes taking place in 28 English towns and cities. Zones are coordinated by a local Zone Coordinator with DESNZ overseeing these. Stakeholder consultation and preparatory work is ongoing for this, with issues over pricing and in-practice roll-out.

Chris suggested a number of steps for heat network suppliers and the housing sector, most notably ensuring that contracts are future-proofed to allow for future implementation of heat networks, ensuring that tenancy agreements are supplemented with heat supply contracts. Ownership of regulation is key, and each organisation should have responsible individuals. And customers communication should be in place according to the regulations.

Landlords should have a strategy in place for reviewing the obligations of contracts. Longer-term contracts with a statutory consultation will be useful to ensure that obligations are met.

Data protection issues may also come in. 5G implementation does allow for more data collection, but customer data needs to be protected and not shared without their consent. Most landlords will be data controllers, and heat network providers may be data processors, and clarity over how data is used and stored is important.

Finally, building operators will have building safety obligations under the new Building Safety Act, including data storage and monitoring responsibilities.

## Reaching for a sustainable future for heat networks

Cathy Olphin, Sustainability Manager at Switch2 ran through the sustainable future of heat networks. 85% of UK heat is generated by fossil fuels, mostly gas. This is slightly better in heat networks, with 75% of heat in heat networks provided by gas.

Industrial and commercial processes, renewable energy, and water source heat pumps may be future heat sources for heat pumps. Thermal storage will be included in heat networks to account for fluctuations in supply and demand.

Grid demand is typically stable throughout the demand, but as heat pumps become more widespread this will significantly increase grid demand.

Heat networks can reduce this demand, by using thermal storage to have heat available to supplement additional demand in peak periods, at a cheaper rate than battery storage.

Thermal storage has additional benefits, including avoiding resident disruption by taking up less space in dwellings, and avoiding social and environmental consequences due to the costs of disposing batteries.

## Question & answer and panel discussion

The panelists answered a number of questions including

**Can energy derived from burning household waste be considered renewable?**

Cathy: This should not be considered renewable, but it will be difficult to completely eliminate household waste. Therefore, it is a better use of household waste to convert it into heat, and is a lower carbon source of heat as it does not require the combustion of additional fossil fuels.

**What is the minimum number of properties needed to be viable for a heat network?**

Ian: Some heat networks have as few as three or four apartments in a single building, or as large as six entire tower blocks. Costs do need to be considered, but these will also depend on local conditions.

**Will the success of 5G technology be site dependent?**

Ian: It is relatively universal, as most heat network zones are in well-connected broadband areas. In challenging cases 5G boosters can be installed to improve connectivity.

**How easy is it to access sustainable heat networks?**

Cathy: Sustainable district heat networks are not very easy to connect to currently, but transitioning to a sustainable heating in existing heat networks is easier, as is making existing heat networks more sustainable such as by reducing reliance on gas.

**Do builders recognise the need to train site customer care teams?**

Ian: Some developers really do understand the need to do this and their sales staff are well-trained. This will be looking increasingly important as consumer protections are implemented.

**How can residents be shown the benefits of heat networks?**

Ian: Transparency and high quality regulation is key, as is good maintenance.

**What role to heat networks play in decarbonising existing stock?**

Cathy: Making use of waste heat and sustainable heat sources in district heat network can significantly reduce heat emissions.

Ian: Connecting terraced housing to heat networks is a challenge, and needs to be included in the discussion.

Chris: Bringing heat networks to existing buildings is potentially invasive and has additional challenges – government grants may be needed to unlock this.

**How can technology unlock analytics data for customers to improve performance?**

Cathy: Technology plays a significant role, including existing metering technology.

Ian: Metering and performance data can help to demonstrate the improvements achieved through interventions.

Chris: The less efficient the system, the more costly the bills. There are clear benefits to residents to lower bills with more efficient analytics.

**Do you have experience of bringing comfort charges in where superior heating systems are offered?**

Ian: “Heat as a service” has been discussed for a long time, charging users based on comfort level and on outputs rather than inputs. This is heavily

technology dependent and is not easy. More sophisticated metering can potentially unlock this. The main barrier now is a commercial one, but organisations such as Energiesprong have shown how it can be done.

**Can developers take on responsibility for electricity production and grid capacity?**

Chris: Developers can look into reducing the energy they will require, currently many over-estimate the electricity they consume just in case which leads to a long queue to upgrade local grids. Developers are currently pulled in a lot of different directions, so government grants can help.

**How will heat networks look like in 2030?**

Ian: There will be a more level playing field, with many more metered properties on heat networks. Ofgem will be more aggressive on installing meters.

Cathy: The transition to 5G will be further along and hopefully complete by 2030, with more advanced analytics.

Thank you to our speakers for presenting such an interesting discussion, and to Switch2 for sponsoring the event.

## Membership of The Housing Forum

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