Net Zero Terrace

Helen Seagrave

Community energy manager

electricity north west

Bringing energy to your door

Stay connected...

www.enwl.co.uk

The Problem

10 million terraced homes in UK, ~ 6 million 2/3 bed which have little outdoor space to accommodate an Air Sourced Heat Pump

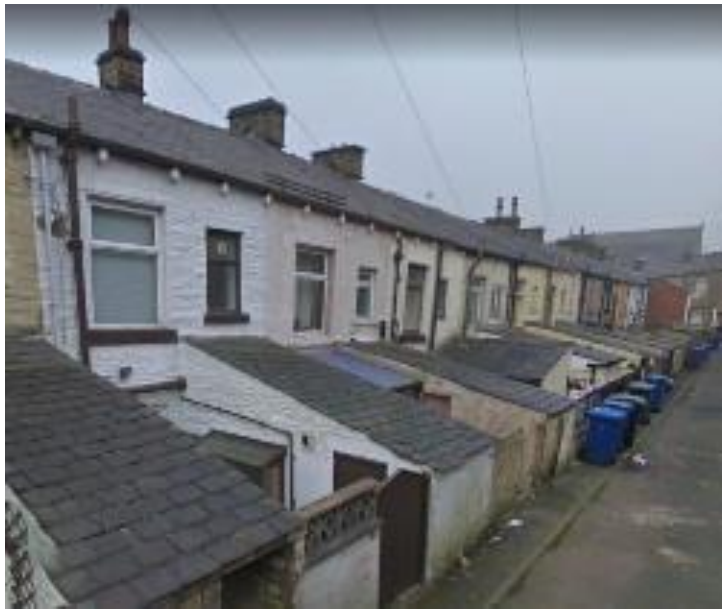
Large proportion from 19th and early 20th century with low energy efficiency

Fuel poverty and affordability may be an issue for many householders

Default choice for electrification is electric boilers which will result in higher bills for residents than gas

Electric boilers have to be delivered with whole house retrofit, an additional challenge

Electric boilers put large additional loads on electricity network triggering expensive and time consuming reinforcement – significant barrier to Net Zero



Bacup, Rossendale

The Solution

Affordable, low carbon energy, healthy warm homes at no upfront cost to consumers

- Shared ambient loop heat clusters provide opportunity for more efficient community heating
- In street bore holes with individual in-home shoebox heat pump
- Homes connected by a ‘smart’ system to aggregate savings across an energy club. (Smart, Local Energy, System – SLES)
- Infrastructure & retrofit debt financed with householders paying back over long term via standing charge

RV ENERGY
A community energy organisation for Rossendale

BURO HAPPOLD

University of Salford MANCHESTER

NORTHERN POWERGRID

UK Power Networks
Delivering your electricity

UrbanChain

CEE Centre for Energy Equality

Rossendale BOROUGH COUNCIL

Kensa Group

What makes NZT Different / Innovative

Solution for mixed tenure streets

Combining physical and virtual infrastructure to overcome spark gap

Community Energy AWARDS
Community Energy England
2023 WINNER
Advancing Innovation

No up-front costs

No grant dependency avoids boom / bust for supply chain

Debt sits on infrastructure, repayment via standing charge

Replicable, scalable to achieve economies of scale

DNO Benefits

New connections processes and policies to accommodate NZT SLES on to the network at the required pace

Informs network forecasts and planning

Opportunity to develop coordinated approach meaning upgrades to network once to meet 2050 targets

Reduces overall cost and disruption

Helps the most vulnerable customers who might otherwise miss out on the advantages of the energy transition

Responds to communities request for support in a landscape where no-one is taking a lead

Alpha Phase has demonstrated that:

NZT solution requires 3x less demand from the network than electric boiler counterfactual

Community demand led model and use of PV as part of a SLES make it innovative

Majority of sub-systems available on market, early stage inter-operability testing shown no major issues however further development required to give the required functionality

Techno-economic model shows it is challenging to make it “affordable” and shows sensitivities for the end price to the customer

Approach suitable for terraced streets across UK, tool kit being developed so the model can be delivered anywhere

Further work required to ensure DNOs can enable the roll out at pace and scale

Other funded projects have shown:
Solution of interest to financers / funders but at least a proof of concept needs to be delivered to lower the risk enough to attract long term finance.

Next steps

Demonstrate that Net Zero Terrace SLES can deliver healthy, warm homes at an affordable cost to customers

Step 1: NIA project	Develop and test a Minimum Viable Product of the NZT solution to derisk potential Beta phase deployment
Step 2: SIF Beta project	Potential Beta application in 2025 for larger scale demonstration as part of a living lab

In parallel - a Pathfinder Places project addressing the non-technical barriers by developing the Governance and finance models

QUESTIONS & ANSWERS

innovation@enwl.co.uk

www.enwl.co.uk/innovation-strategy

0800 195 4141

@ElecNW_News

linkedin.com/company/electricity-north-west

facebook.com/ElectricityNorthWest

youtube.com/ElectricityNorthWest

Please contact us if you have any questions or would like to arrange a one-to-one briefing about our innovation projects