

electricity
north west

Bringing energy to your door



Net Zero Terrace

Show and Tell Presentation

April 2024

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The Problem



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

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



University of
Salford
MANCHESTER



What makes NZT Different / Innovative



Solution for mixed tenure streets

Combining physical and virtual infrastructure to overcome spark gap

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

The Net Zero Terrace Street

[See the animation here:](#)

DNO Benefits



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

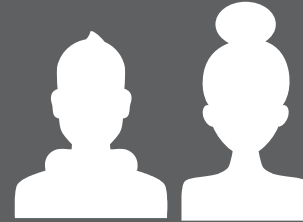


Informs network forecasts and planning



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

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

TEM showing 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

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

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

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



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

Growing number of Fast Follower communities

Pathfinder Places funding for non-technical barriers

RVE now employing 6 people in Rossendale



QUESTIONS & ANSWERS



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