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Community engagement in energy projects

Funded by



Lead academic
partners



This session



1. Why worry about community responses?
2. HyDeploy case study
 - a) Background
 - b) Approach to community engagement
 - c) Social science research
 - d) Case study conclusions
3. Energy and communities: beyond hydrogen





1. Why worry about community response?

The screenshot shows the BBC News website. At the top, there are navigation links for Home, News, Sport, Weather, and iPlayer. Below the navigation is a red banner with the word "NEWS" in white. Underneath the banner is a secondary navigation bar with links for Home, Israel-Gaza war, Cost of Living, War in Ukraine, Climate, UK, World, Business, Politics, and Culture. Below this is a third navigation bar with links for England, Local News, Regions, and Liverpool. The main headline reads "Ellesmere Port hydrogen heating trial scrapped after protests" with a date of 11 July 2023.

The screenshot shows the Guardian website. At the top right is the Guardian logo with the tagline "Newspaper of the year". Below the logo is a navigation bar with links for Sport, Culture, Lifestyle, and More. Underneath the navigation bar is a secondary navigation bar with links for Wildlife, Energy, and Pollution. The main headline reads "'We've got no choice': locals fear life as lab rats in UK hydrogen heating pilot". To the right of the headline is an advertisement for Dell Technologies.

“Low carbon hydrogen will be critical for meeting the UK’s legally binding commitment to achieve net zero by 2050, and Carbon Budget Six in the mid-2030s on the way to this. Hydrogen can support the deep decarbonisation of the UK economy, particularly in ‘hard to electrify’ UK industrial sectors, and can provide greener, flexible energy across power, heat and transport.”

Need to secure engagement and acceptance of consumers and civil society in the use of hydrogen, to enable hydrogen to become ‘widely accepted’

Our vision

Our vision is that by 2030, the UK is a global leader on hydrogen, with 5GW of low carbon hydrogen production capacity driving decarbonisation across the economy and clear plans in place for future scale up towards Carbon Budget 6 and net zero, supporting new jobs and clean growth across the UK.



HM Government

UK Hydrogen Strategy



August 2021

CP 475

Social acceptance a key challenge for new technologies



*“[i]t is difficult to know quite how acceptable hydrogen will be for heating homes at this stage – although it is likely to be no more dangerous than natural gas, **there is a difference between actual safety and perceptions of safety**”* CCC, 2018: p27

“there is a huge amount of enthusiasm for hydrogen heating, but there is a question about public perception and how much you can blend” Claire Perry MP, 2019

Committee on Climate Change (2018) Hydrogen in a low-carbon economy; Claire Perry MP oral evidence to the Science and Technology Committee’s enquiry on Technologies for Meeting Clean Growth Emissions. From: Scott and Powells (2019)

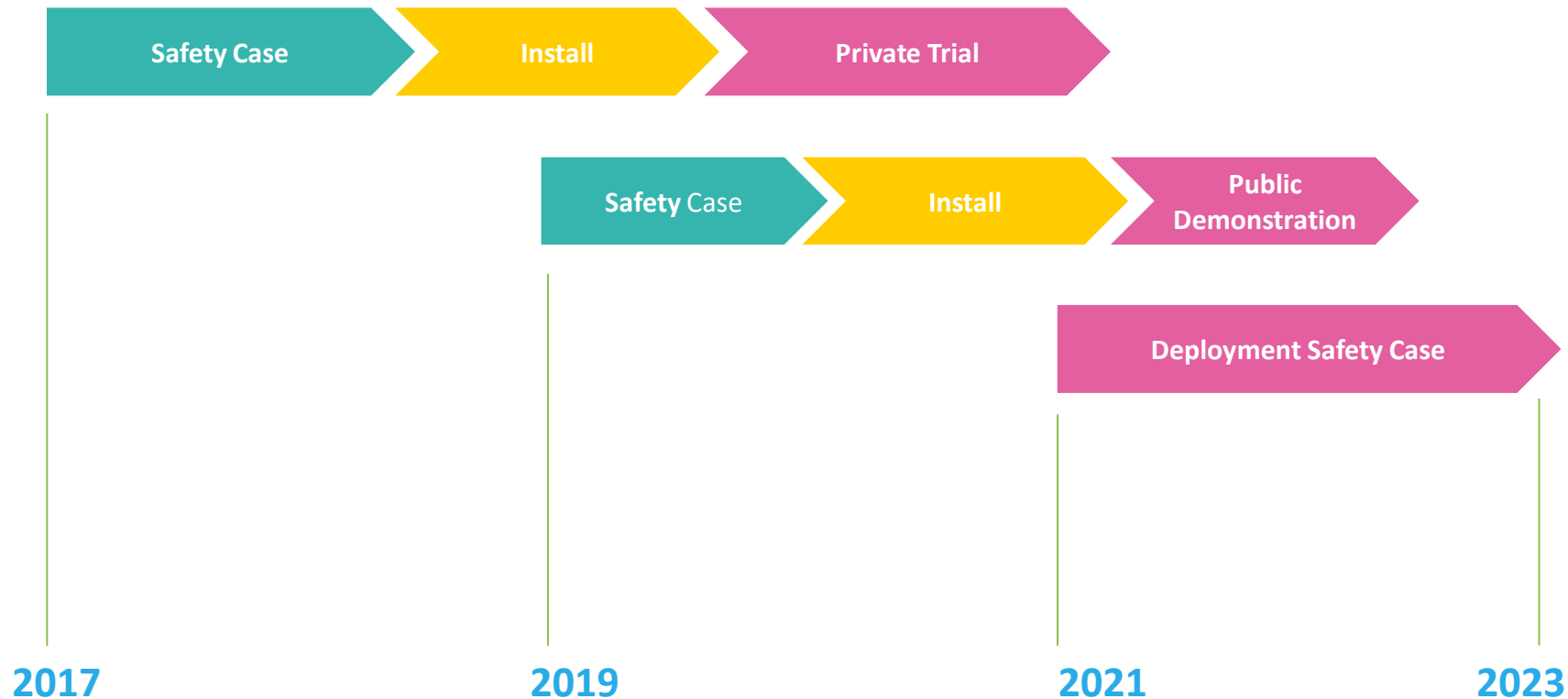
Add your event or project title here or delete this strap

2. HyDeploy Case Study

HyDeploy Background



Aim: To enable bulk deployment of hydrogen blending within the UK gas network by demonstrating its safe transportation and use by 2023.



Demonstrations

Keele Trial

- First live trial of hydrogen in a gas network.
- Oct 2019 – Mar 2021.
- Provided a blend to 100 homes and 30 university/commercial buildings.
- No issues with the network or appliances.
- No additional alarms or faults reported.

Winlaton Trial

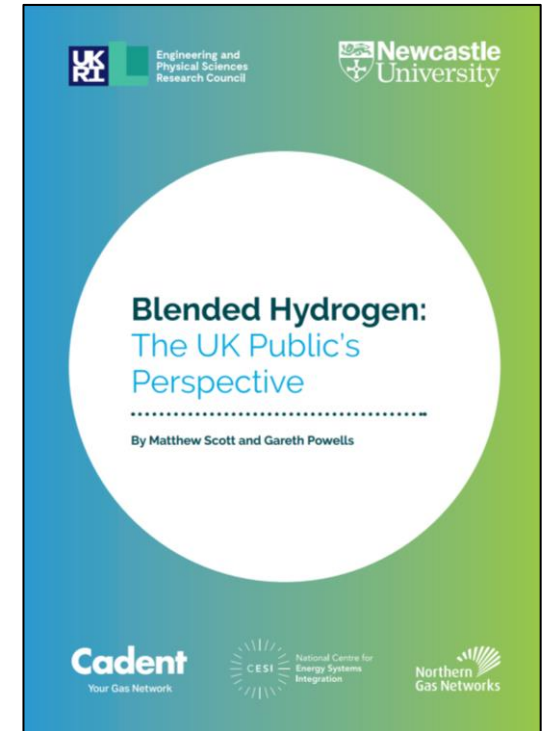
- Safety case evidence built on the Keele evidence.
- First use of a hydrogen blend on a public gas network.
- Provided a blend to 668 homes, a church, shop and school.
- No major faults reported or issues with network or appliances



What did we already know about people's perceptions of hydrogen in the home?



1. Public knowledge and understanding of hydrogen and hydrogen blending is low
2. Most people perceive hydrogen neutrally, and there is no sense of acceptance or rejection of it as a fuel for UK homes
3. Once informed, support for and willingness to use blended hydrogen becomes moderately high
4. Benefits for the environment are recognised, and the impacts on home use are perceived as minimal
5. The perceived cost of hydrogen is the biggest obstacle
6. Safety concerns do not seem insurmountable, but negative perceptions of hydrogen as dangerous are important

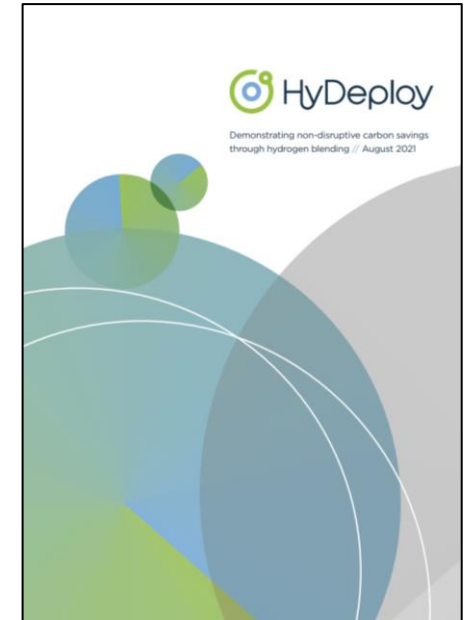


Scott, M. and Powells, G. (2019) Blended Hydrogen: The UK Public's Perspective. Newcastle University.

Customer Focused



Report



- Available at: hydeploy.co.uk/about/document-library/

Social science research: methodology

HyDeploy the first opportunity to explore the perceptions of consumers experiencing a hydrogen blend in their own home.

- Mixed methods (qualitative and quantitative) approach for greater depth of understanding of experience and perceptions

Keele University:

- Pre-trial (June 2019): 16 interviews
- End-of-trial (January 2021): 8 interviews

Winlaton:

- Pre-trial (July 2021): Survey (~135), interviews (~12)
- Post-trial (September 2022): Survey (~50), interviews (~10).

Interviews explored:

Environmental views;
energy behaviours;
knowledge and attitude
of hydrogen; views of
being part of trial and
communication strategy.

Social science research: findings

Associations with 'hydrogen' (Winlaton)



■ Positive ■ negative ■ neutral

Classification	Examples
Positive	Clean/cleaner; green
Negative	Bomb; flammable
Neutral	Gas; chemical

But...Assumptions about the 'clean-ness of hydrogen'

Fig. 1. Percentage of words used in response to "what are the first two words you think of when you hear the word 'hydrogen'"

Views on hydrogen in our energy supply



Fig. 2. Percentage of responses to the statement "Hydrogen should be increasingly used for energy supply in the UK" (n = 128)

- Strongly agree + Agree
- Neither agree nor disagree
- Disagree + Strongly disagree
- Don't know

"It's all well and good about 20%, but that doesn't get us to carbon neutral and not using gas." (Pre, Winlaton)

Need for clear explanations of the role in an energy transition road map

Views on receiving blended hydrogen in the home

Some short-lived anxiety

*“I think there was this **initial kind of flurry of anxiety** and yeah **concerned that they were going to have this enforced on them**, you know, **how experimental was it**, was it going to actually do what they said it was going to do, why were they doing it, a little bit of suspicion I suppose and anxiety but, you know, **I think that’s largely died away**” (Pre-trial, Keele)*

*“I think it should be more voluntary **particularly to the people who own their own houses**, you know, they really should have a choice on what they do and what’s the source of energy.” (Pre, Keele)*

Different levels of concern dependent on tenure?

Some very positive views of projects

“Just excited. I was excited as you can be about hydrogen gas.”

(Pre-trial, Keele)

“Environmental sustainability is something that I feel quite passionately about personally. And so actually to be able to be involved in something that could have quite a far-reaching impact longer term was quite exciting” (End-of-trial, Keele)

Pride in place

Interviewer: “How do you feel about Winlaton being chosen as the trial area for the UK for this project?”

Interviewee: This might sound corny, but privileged.” (Pre, Winlaton)

Appreciated the minimal disruption

“I’m contributing by doing nothing. Where else do you get to do that?” (Pre-trial, Keele)

“I’m really glad to have been part of a trial that’s like, actually I didn’t even notice it was happening most of the time...It’s not caused problems. It’s not been a significant inconvenience” (End, Keele)

Cost concerns

Winlaton

- 33% - concerned about effect of H on fuel costs
- 36% - not concerned about the effect of H on fuel costs
- 31% - 'on-the-fence'/didn't know

“We don't know if they decide to roll it out is the cost going to be more? [...] Because once you're on it that's it, you've got to use your gas, haven't you?” (Pre-trial, Winlaton)

Relevance to 100% hydrogen?

- Majority supportive of 100% hydrogen (with some caveats) and felt that having been part of the HyDeploy trial had given them more confidence.

“But certainly the not noticing a difference in the supply over the time has reinforced that [willingness to take part in a 100% project] and certainly I’ve been much more open to being involved in a more significant trial on this basis having done one thing and probably learnt a little bit about how I would engage with it, as well as how the project might engage with me”

Blending can help social acceptance, but...

“I think, whatever point you come to that your boiler is taken out, that’s when you’re going to get serious resistance.”

Good communication alleviates anxiety and reinforces acceptance:

Regularity of communication needed:

*"I think the lack of **consistent** communication has made me slightly less engaged"*

Openness and accessibility:

"Knowing people who went to some of the open sessions and actually talked to people and felt reassured and having those conversations with people was also quite important ...I think having those drop-in sessions and explaining things was quite helpful as well."

Initial communication is important:

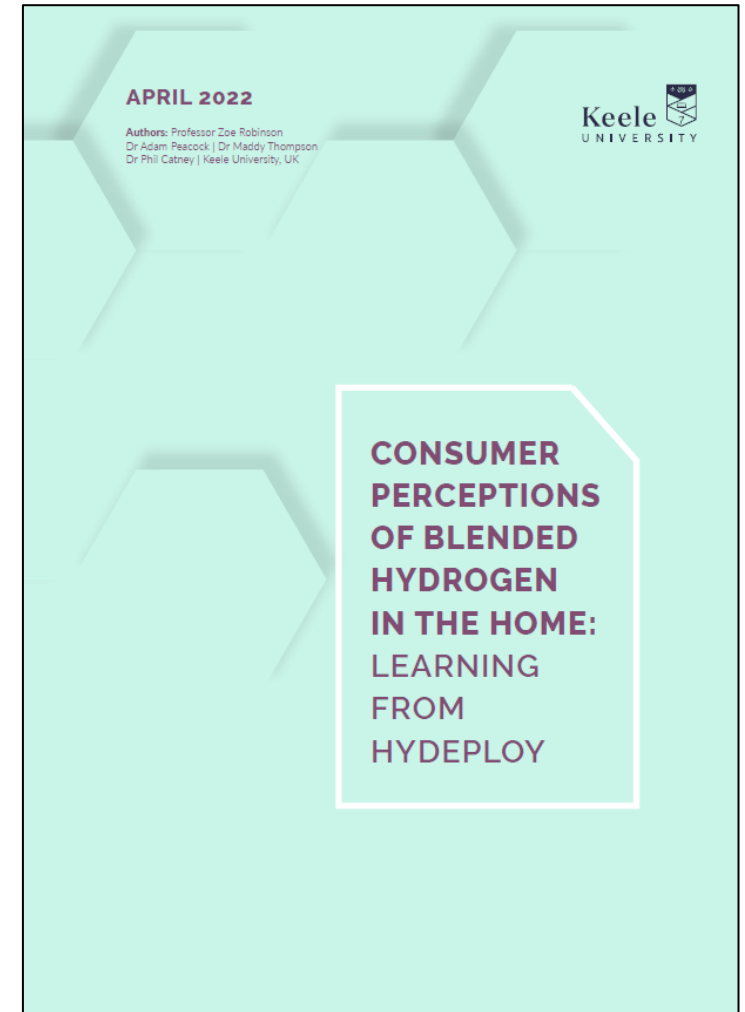
"I mean I remember us getting the initial letter... I think it was probably the most important just in terms of explaining things. I probably sat and read that in a more detail than I read anything later on... I think just making sure that there's lots of information as early as possible so that rumours are minimised - anxiety is minimised is good."

Communicating cost upfront:

"Had it been advertised in a way that you're going to save money during the trial, then we would've looked at it with different eyes, because at least the risk would have some kind of compensation for it, and that was not made clear from the onset. We found out much later on...."

Research conclusions

1. High levels of public acceptance to blended hydrogen in the home.
2. Concerns of residents tended to reduce over time.
3. Limited understanding of hydrogen and its potential role in decarbonising the energy system.
4. Strong support possible where it puts the local area 'on the map.'
5. Reassurance needed around cost and safety, plus impact on appliances, insurance and warranties, and the extent to which it is a genuine solution to climate change.
6. Evaluation of the project with customers is important for learning and for trial participants feeling valued - **don't view trials just as a technical projects.**



Full report available:
<https://bit.ly/3JdmN4U>

3. Energy and communities: Co-production and Community-centric design



Consideration of communities in energy project need to go beyond ‘understanding perceptions’ to co-production with Communities or community-led projects. Places are different in characteristics of their communities – and therefore different strategies for decarbonisation are needed in different places:

Community-centric design for place-based decarbonisation. Two examples:

Zero Carbon Rugeley

- Co-production with community of a town-scales smart-local energy system and community engagement approach

Net Zero Neighbourhood: Dudley

- Building a community to support retrofit rollout and visioning for mobility and green spaces

Contact: Professor Zoe Robinson, z.p.robinson@keele.ac.uk for more details!

4. Conclusion



- The energy transition is as much about people as it is about technology
- Working effectively with people requires specific skillsets which needs adequate resourcing
- Building trust within communities takes time
- Communities should be engaged in a meaningful way beyond traditional consultation methods
- Ethics of engaging with communities should be at the forefront
- Engagement and solutions may look different with different communities – listening to communities can help inform approaches - **co-production**

Thank you

Questions?

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