Case study: Improving the customer journey: Glow Heat Pump Community

Project lead:

Hildebrand Technology Ltd

Partners:

Build Test Solutions Ltd, NJV Ltd (Betateach), Richard Carmichael Research & Consulting Ltd, davies+mckerr Ltd, SE2 Ltd

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What were the objectives of the project?

The Glowmarkt Heat Pump Community project aimed to increase consumer confidence in heat pumps and help installers deliver high-quality installations by:

- Creating a community of heat pump installers and customers that supports learning, social proofing and decision-making by providing online resources, guidance and structured real-world case studies.
- Increasing consumer and installer access to detailed property data by collecting and analysing metered energy data and compiling relevant property documentation (including previous energy performance assessments, heat transfer calculations, etc.).

What activities were funded?

- Primary and secondary market research with domestic energy consumers, local authorities and installers, to understand barriers to decision-making around heat pump installations.

- Development and launch of a web platform (the Glow hub) for consumers and installers to support informed decision-making through insight about the property, underpinned by actual consumption data. This included creating articles and guides, bespoke calculator tools, signposting to existing resources and developing a searchable database of heat pump installers. Peer-to-peer learning is delivered through a database of case studies of actual, quantified heat pump installations to support people in finding 'someone like me'.
- Compiling all relevant property data in a single digital platform, including a digital property passport for the energy consumer and an installer-facing property snapshot containing household heat output and heat loss data.

What did the project achieve?

The project consortium built the foundations of an online heat pump community by researching, developing and launching the Glow hub. The web platform enables peer-to-peer learning and sharing of measured property data among consumers and installers. Website content, guidance documents, a case study template and populated case studies were developed based on extensive consumer and installer research. A heat pump sizing and running costs tool was developed, utilising energy consumption and temperature sensor data to provide a measured heat loss calculation.

The project developed an online database of installers, searchable by proximity to the property and installer certifications. Once suitable installers are found through the database, the Glowmarkt platform allows the consumer to easily share relevant property data with selected installers to inform their quotes, speeding up the process for both the consumer and the installer.

The Glow website provides heat pump information from many respected and credible sources and, through user testing, was thought to have more information than other websites. At the start of the project, the website resources and articles about heat pumps, home efficiency and user experiences were a novel concept, but heat pump information is more widely available online now. To grow the user base and realise the full benefit of this platform, Glowmarkt plans to build awareness of the solution with customers and installers through new branding and a social media strategy .

Project objective 1: Creating a community of heat pump installers and customers that supports learning, social proofing and decision-making through providing online resources, guidance and structured real-world case studies.

Why is this important?

In 2024, approximately 4% of UK homes have a heat pump installed[1] and most consumers will be unfamiliar with heat pumps as a domestic heating technology. At the project inception, consumer confidence in heat pumps was low (as seen in the BEIS (now DESNZ) Public Attitudes Tracker[2] and in

[1] Based on survey results from Citizens Advice, as referenced in https://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/Demand_%20Net%20Zero.pdf

[2] https://www.gov.uk/government/collections/public-attitudes-tracking-survey

consumer research from Which?[3]) – many people didn't understand them, believed they were expensive to buy and expensive to run, and worried they wouldn't be warm enough at home.

Consumers in the 'early majority' segment of the uptake curve are typically more conservative compared to 'early adopters' and require assurance that a technology is effective before committing to their own purchasing decision. 'Social proofing' theory suggests that seeing examples of heat pump adoption by others in comparable circumstances (e.g., house type, location) could give consumers confidence that heat pumps would work in their own homes. This theory is discussed by one of the project partners, Richard Carmichael, in his paper on measuring real-world performance of heat pumps and enabling peer-to-peer learning, for Imperial College London[4].

Research has also identified a gap in installer skills as a barrier to increasing heat pump installations[5]. Growing the capacity of the heat pump industry will require retraining existing gas engineers and upskilling new entrants. As the industry grows and develops, promoting peer-to-peer learning within the installer community can facilitate skills development and help solve technical problems.

What activities were funded?

- Independent consumer research (via davies+mckerr (d+m)) to understand attitudes towards heat pumps, to inform case study content and format, and to provide feedback on the web platform overall. Three stages of research work took place throughout the project with:
    1. Early adopters of heat pumps to understand what they wish they'd known before they started their own heat pump journey:
        - Survey responses from 31 heat pump owners, drawn from Hildebrand and its partners' existing users
        - Individual interviews with six heat pump owners, interviewed by d+m
    2. Consumers who were considering installing a heat pump to test the website content and design:
        - 8 x online regional focus groups were conducted, engaging a total of 24 people. The groups were segmented as consumers who were open to installing a heat pump in future, consumers who had already done some heat pump research with a view to purchasing, and consumers who had been close to an installation but then stopped the process ('late rejectors')

[3] https://www.which.co.uk/policy-and-insight/article/homeowners-and-heat-pumps-aUUVS4G6Cgb9

[4] Carmichael, R., (2022) Accelerating the transition to heat pumps: measuring real-world performance and enabling peer-to-peer learning. An Energy Futures Lab Briefing Paper. Imperial College London. Available at: https://www.imperial.ac.uk/energy-futures-lab/reports/briefing-papers/paper-10/

[5] Branford, Z., & Roberts, J. (2022). The Installer Skills Gap in the UK Heat Pump Sector and the Impacts on a Just Transition to Net-Zero. University of Strathclyde. Available at: https://pureportal.strath.ac.uk/en/publications/the-installer-skills-gap-in-the-uk-heat-pump-sector-and-the-impac

3. A final round of research after the Glow hub went live
    - Four groups of four people who were considering a heat pump or were curious, but were more passive with the objective of evaluating the site and the tools, and gathering insights to inform ongoing development

- Ongoing engagement with relevant organisations, including heat pump manufacturers, the Microgeneration Certification Scheme (MCS), Open Energy Monitor and the Energy Networks Association to capture market knowledge and engage them in signing up to the Glow hub.
- Market research on, and engagement with, social housing providers by SE2, including recruitment of 10 local authorities/combined authorities with active retrofit projects to attend a series of four workshops as part of an advisory group. SE2 conducted several workshops with housing associations and individual interviews with four local authorities, three housing associations and two sector bodies for social housing to capture their challenges and explore how they could use the Glow hub to support both their social housing tenants and the able to pay.
- Developing and launching the Glow hub, including writing 'how to' guides, advice from independent experts, where to start and complementary website functionality to increase consumer knowledge and confidence, e.g., accessible explanations of home insulation, heat transfer and radiator sizing with the tools to measure and report on all of them.
- Designing and delivering a structured case study format and a case study creator tool for consumers, and a version with technical design details for installers. Each case study provides details on the home and heating system pre- and post-installation, installation costs and overall customer satisfaction with both the heat pump itself, as well as the installation process and installer. The consortium worked with consumers to offer a data-driven case study of actual domestic heat pump installs to showcase honest, real-life examples. These were tested in consumer research by d+m, the case study format and concept was Richard Carmichael's responsibility.
- Developing a ‘professional user’ zone with restricted access for installers and local authorities. Here, professionals can learn from each other, share experiences, and highlight how they resolved technical challenges.
- Creating an infographic of the heat pump customer journey, including a virtual checklist for consumers. This provided guidance on gathering relevant property data to share with installers, managing quotes and, where relevant, contributing their own case study to the database. As the site evolved, this moved from a static image (based on NESTA's schematic[6]) to an interactive tool.
- Creating a separate installer journey infographic, made available to registered installers to help manage quotes and ‘live’ projects on their account. This was informed by engagement with active heat pump installers (via NJV Ltd) to understand their requirements and the most

[6] Various (2022). How to scale a highly skilled heat pump industry. Nesta. Available at: https://www.nesta.org.uk/report/how-to-scale-a-highly-skilled-heat-pump-industry/

practical ways to interact with customers through the Glowmarkt platform. Engagement was conducted through various methods, including social media discussions and phone interviews.

What were the project findings and did the project achieve this objective?

The project developed material that fosters learning and social proofing through resources, guidance and structured real-world case studies for both consumers and installers.

The consumer case study database is live on the Glow website with six published case studies. The ambition is to offer hundreds of case studies so that people can 'find someone like me'. Consumer research conducted during the project found that, for a prospective consumer, the most valued pieces of information are installation cost, running cost, operating efficiency post-installation (i.e., seasonal coefficient of performance, SCOP), carbon saved, and customer satisfaction. Research and testing from d+m observed an improvement in consumer confidence regarding heat pump technology through the provision of the case studies. Customer research also reflected the importance of impartiality and the need for case studies to be separated from commercial interests. Additionally, the case study database was deemed more trustworthy by users if it contained a mixture of good and bad reviews, as opposed to entirely good reviews.

To create the initial case studies, heat pump owners were recruited from the existing Bright community through a survey to all users. 16 possible candidates were identified and of those six were willing to take the time to share information about their heat pump installation to create a case study. Others declined as they felt it was too much time and effort to pull all the information together. It was recognised that raising the request for information for a case study earlier in the installation process would allow most of the information to be collected automatically through the use of the website journey. Even if not published in a heat pump case study on the Glow website, all data is appended to the consumer's Property Passport, making it available for future service visits, or to be transferred to the next resident (via blockchain for security).

Hildebrand is considering recruiting candidates for future case studies through installer referrals and promoting the benefits to installers in sharing their installation case studies.

Consumer research indicated that draft language on the website, particularly around the tools available, was too technical and assumed levels of understanding that may not exist. However, there was also a segment of consumers that sought more detailed and technical information. The project developed content to cater to a mixed audience, prioritising simplicity at the start of content (e.g. including a self-explanatory title) with increasing levels of technicality and detail as the content develops.

There is a separate section in the case study for the installer to provide technical details about the design and installation. There are two ways this information is used:

1. Data is added to the home's digital Property Passport (also funded by the project) and can be retrieved for future service visits or passed to the next owner
2. As a resource for other installers to use for reference, such as pipework sizing, specifications for the heat pump unit and additional system equipment. That technical information is supplemented with additional data fields (completed by the installer) is only available within the professional area of the site to support peer-to-peer learning.

The project found it challenging to engage the installer community. Team members attended trade shows with Heat Pump Ready, including InstallerShow and Futurebuild, to speak directly with heat pump

installers and various tradespeople. They also used Nathan Gambling to promote the website through his many contacts in the industry, and met with a number of respected installers such as Leah Robson (Your Energy Your Way) and Emma Bohan (IMS Heat Pumps Ltd). The next task is to demonstrate the benefits to installers of using data collected by a homeowner (streamlining two key points of friction: 1) is it worth doing a site visit? and 2) capturing immutable data beforehand so the time on site is optimised), and exploring how to raise revenue from this approach. The feedback component where prospective heat pump installers can read about and learn from other installs needs larger volumes of case studies and pre- and post-installation data before it can reach its designed purpose.

Project objective 2: Increasing consumer and installer access to detailed property data, by collecting and analysing metered energy data and compiling relevant property documentation (including previous energy performance assessments, heat transfer calculations etc.).

Why is this important?

Heat pump performance is more sensitive to whole system design when compared to conventional gas boilers, and robust system design requires access to accurate and up-to-date property data. However, compiling this data can be a resource-intensive activity requiring professional expertise, generally provided by a surveyor or heating engineer. Even in cases where data has been compiled at a certain point in time, the same data may have to be compiled again by different professionals if data-sharing processes are not established or if the homeowner seeks quotes from different, competing, installers, leading to time inefficiencies and increased costs. Additionally, previously compiled data might become outdated and inaccurate if changes to the property are made and not recorded.

This project aimed to increase ease of access to the necessary data by guiding and assisting the customer to collect and compile data in a single digital location and allow it to be shared as a pack with a potential installer before their first site visit while also giving them the confidence to make better-informed decisions (e.g. expected size of heat pump for their property). Attributing relevant data to the household in a ‘property passport’ aimed to retain important information about the property and heat pump installation in a secure environment.

What activities were funded?

The Glow project developed tools and processes to facilitate consumer and installer access to accurate household data, including:

- Implementing the UK's first freely available digital Property Passport based on quantified, immutable inputs.
- **Incorporating smart meter electricity and gas data** for a property into analysis for heat pump design, through Hildebrand, who is a Data Communication Company (DCC) Other User.
- **Energy Performance Certificate (EPC) register access** – the project developed an API with the EPC register to pull household data (including floor area, construction age etc.) from a household’s energy performance certificate.

- **Heat output tool** – the project developed a Heat Emitter Schematics tool that prompts the homeowner to measure and describe all their current radiators or underfloor heating systems. The tool uses the radiator input data and boiler details to provide an indication of total heat output measurement for the property. This can be shared with professionals to inform initial quotes e.g. for heat emitter upgrades, but is not included in the property passport until verified by an installer during their site visit.
- **Measured heat loss calculations** – the project integrated Build Test Solution's (BTS) Smart Heat Transfer Coefficient (SmartHTC)[7] algorithm to provide a heat retention score from building information, temperature readings and energy consumption data. Using actual measured data instead of a visual survey that relies upon assumptions and benchmarks was considered a more accurate method of measuring heat loss.
- **Heat pump sizing and running costs tool** – the SmartHTC score estimates the size of a heat pump required for a given home. An online calculator tool was also developed to estimate the heat pump running costs based on energy data consumption history.
- **Digitising the heat pump customer journey** – integrating all of the above steps plus the ability to search and find an installer within an automated journey to help the energy consumer manage the process from start to completion and beyond with post-installation monitoring.

A single digital platform was developed to capture and present the relevant data to the energy consumer and potential installers. The Glowmarkt platform allows consumers to share the collated data with installers. To help consumers find installers, the project developed a searchable database of installers based on proximity and certifications held.

What were the project findings and did the project achieve this objective?

Specific sections on the website were developed to collate the relevant household data. This further advances Hildebrand's 'property passport' approach that exists on the platform.

The Glow methodology supports consumer-led involvement (buying sensor equipment, measuring radiator sizes etc.,) to ensure the consumer can be an active participant in the journey and support them in making informed decisions and having an effective dialogue with potential installers. This is expected to increase buy-in from willing consumers and subsequently reduce drop-out rates from those who initially consider a heat pump but do not progress to installation. Feedback from users will help evidence whether consumers are willing to provide the necessary information and purchase the necessary equipment, and the suitability of the methodology in varying circumstances (e.g., planned replacement versus distress purchase situations). Those currently using the platform, classed as 'early adopters', are happy to be quite involved in this process, and the user testing with d+m has given confidence that those in the 'early majority' will accept the level of information required to be gathered.

A searchable database was developed to allow consumers on the Glow journey to find qualified installers (and access case studies related to their previous installations). The installer list is built on

[7] The methodology requires a smart meter and a Glow temperature sensor to be installed in the household. Once installed, the exercise is automated and does not require consumer intervention. Estimates can be provided after a 3-week testing period, which has to be conducted during the heating season where the internal-external temperature differential is sufficient (minimum of 7°C) to measure actual heat loss. For more information visit: https://glowmarkt.com/home/articles/getting-an-efficiency-score-for-your-home

MCS's database of certified installers, but MCS certification is not mandatory, and any installer can sign up to the Glow database. All new sign-ups must provide specific informationwhich will be verified before being added to the database. Maintaining an accurate, up-to-date list of heat pump installers and their credentials is important; MCS have agreed to provide a quarterly update of heat pump installer details from their database.

Providing detailed information on the existing home heating system gives professional energy assessors and heating system designers valuable information ahead of a site visit, saving the installer and homeowner time and money.

The project intended to include in-situ performance in the case studies. However, it was difficult to obtain heat pump performance data from manufacturers. Assessing heat pump performance through smart meter and internal temperature sensor data was explored in the project, and model development continues. The low volume of pre- and post-installation data from case studies impacted the ability to compare heat pump system efficiencies. Work on the model to measure in-situ performance on a 'like-for-like' basis is ongoing.

Summary:

Glowmarkt developed a customer journey that enables consumers to:

- Access informed advice on heat pump installation and fabric retrofit for their house.
- Read case studies of actual heat pump installations in properties similar to their own, to give confidence in the technology and in an installer.
- Access their property's smart meter data through Hildebrand, who are a Data Communication Company (DCC) Other User.
- Measure their property's heat loss using Build Test Solution's SmartHTC algorithm, which uses energy consumption and temperature data.
- Measure the heat output of a property's existing heating system using a radiator sizing tool.
- Receive an estimate for the operating costs of a heat pump based on their own household data.
- Search for a heat pump installer based on 'distance from me' and certifications held.
- Share property data with installers to receive quotes.

The project aimed to create a community of customers and installers around shared property data. The web platform will continue to grow its user base and evolve as the heat pump market develops, and key stakeholders, consumers and installers provide ongoing feedback.

What impact could this have on accelerating the heat pump rollout?

The platform is designed to empower and educate consumers on heat pump technology, and facilitate the collection and sharing of household data. The platform attempts to support delivering a quicker and easier customer journey, which could make the heat pump offer more attractive to consumers; an informed consumer will feel more comfortable making decisions and spending their money. Some

benefits of the platform, especially the development of a case study database, rely on scale, so the efficacy is hard to determine at this stage. However, literature would suggest that social proofing and peer-to-peer learning effectively increase uptake.

The measurement-based heat loss assessment allows household-specific data to be used in the suitability assessment phase. It follows a self-serve approach that empowers consumers to actively participate in their own heat pump journey. This customer-led approach to heat pump suitability assessment means they are far more informed for the rest of the journey.

For installers, the platform provides tools to support informed dialogue between homeowners and installers by sharing measured data outputs. Installers can pre-qualify customers before incurring the expense of a site visit, whilst accessing data beforehand reduces the time needed during onsite visits. This has the potential to reduce the associated time and costs.

What next?

The Glow platform has been developed based on significant stakeholder engagement and academic research. However, much of the platform's expected value relies upon consumers and installers finding comparable circumstances to their own or their client's, which requires the platform to scale. Glowmarkt now needs to grow its user base by building awareness of the solution with customers and installers. Hildebrand's existing customer base will be encouraged to engage with the platform, and project partner SE2 will continue to build relationships with local authorities and housing associations to ensure that they see Glow as a key part of their local heat pump journey.

To achieve commercialisation, Glow needs to determine how to make the solution financially sustainable. Hildebrand believes that once Glow has achieved a certain volume of users and installers and a reputation for being a trusted resource, it will be able to start identifying robust revenue stream opportunities from Summer 2025.

Where to find out more

www.Glowmarkt.com

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