HEAT PUMP READY | Department for Energy Security & Net Zero

Part of the Net Zero Innovation Portfolio

Guru Verify for Heat Pumps

Delivering best practice install, commissioning and maintenance verification tools to the heat pump market

CARBON TRUST

Project Lead: Guru Systems Ltd

Funding:

£475,162

guru

> Heat Pump Ready is supporting us build the next generation of digital tools, ready to help bridge the skills gap as the UK shifts from gas to heat pumps.
>
> **Nic Mason**
> Chief Product Officer, Guru Systems Ltd

The problem: How can heat pumps be installed to a high quality?

For heat pumps to deliver the carbon savings promised by manufacturers, they need to perform well. To do so, they need to be correctly sized ahead of installation, expertly installed and commissioned by a sufficiently trained engineer, and operated efficiently once in use. These stages can involve various personnel who have little interaction with the heat pump end user.

The solution

A data-driven app to verify all the stages have been carried out correctly would give reassurance to the heat pump user that the system has been provided to the level promised. Guru's Verify for Heat Pumps product is a modular mobile app and web platform which supports the correct installation, commissioning and maintenance of heat pumps. The platform verifies outcomes and stores heat pump settings in order to benchmark for future maintenance and efficiency improvements, and acts as a training resource for new heat pump engineers.

The modular nature of the product will allow it to operate with different heat pumps and adapt to changing verification regimes.

Using a mobile app to verify heat pumps installs

What are we going to do?

The Guru Verify mobile app will be used on site by engineers engaging directly with the heat pump for installation, commissioning and maintenance tasks. The web app allows our clients to define testing criteria and check dwelling status remotely, track progress across multiple homes and sites, and access results and photographic evidence. It builds on the success of, and the lessons learned from, developing and deploying the current Guru Verify product, our existing commissioning verification tool for heat networks.

Why is this an improvement on current solutions?

Installing a heat pump requires a sufficiently trained engineer. There are currently just 512 MCS (Microgeneration Certification Scheme) certified ASHP installers and 255 MCS certified GSHP installers in the UK. This compares to 130,000 heating engineers registered with Gas Safe. Given the scale of the rollout required, there is a significant skills gap.

Guru Verify for Heap Pumps will be a vital solution to support new engineers and will be available to the entire market.

What would success look like?

Improved install and commissioning processes resulting in improved heat pump performance in operation. Also, more effective proactive maintenance regimes, leading to fewer reactive maintenance callouts and more comfortable residents with reduced heating costs.

How will this project help towards the target of installing 600,000 heat pumps per year by 2028?

The social housing sector has 5.27m homes in the UK so engaging this sector is essential to reach the install target.

Verify for Heat Pumps is designed to provide support to large landlords who manage buildings or sites that contain multiple homes, such as housing associations and local authorities. It will also be an aid for upskilling the engineers responsible for the installation and maintenance of heat pumps.

The Optimised solutions development stream of the Heat Pump Ready programme supports the development of innovative tools, technologies and processes to overcome specific barriers to heat pump deployment in the UK. This stream supports solutions aiming to reduce the life time cost and increase the performance of domestic heat pumps, minimise home disruption whilst providing high quality installations, develop and trial financial models to support heat pump deployment, improve the heat pump consumer journey and provide a smart and flexible home energy system.

Heat Pump Ready is funded by the Department for Energy Security and Net Zero through the NZIP programme. The Collaboration & Learning stream is managed by the Carbon Trust with support from Ipsos and Technopolis.

Contact information

Name: Nic Mason

Email: Nic.Mason@gurusystems.com

www.heatpumpready.org.uk

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Guru Verify for Heat Pumps

Project Progress (Autumn 2023)

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Key Findings

- Verifying the quality of a heat pump installation is recognised as being important by landlords, as it gives the client assurance that the heat pump has been installed and set up correctly. It also gives warranty confidence to the manufacturer and installer that the heat pump system has been installed correctly initially before handover. This verification would give protection for all involved in the transaction, and ultimately provide a good experience for the occupier.
- The Verify for Heat Pumps solution needs to be agnostic and not tied to a specific heat pump manufacturer, as landlords will have a variable fleet of heat pumps and existing boilers.
- While our research has shown all stakeholders would like this service, it is not clear that any are prepared to pay for it in a commercial environment, which is a risk to the project.

What progress have we made so far?

We used our experience of Verify for Heat Networks to start to develop a modular mobile app and web platform to support the correct installation, commissioning and maintenance of heat pumps, verifying the outcomes and storing heat pump settings in order to benchmark for future maintenance and efficiency improvements. We also wanted the app to act as a training resource for heat pump engineers.

We completed the first work package for product research, by interviewing key internal and external stakeholders for user experience research, and investigated third party workflow management mobile apps, an integral part of this service.

What barriers have we identified and how has this changed our approach to delivering our project?

We initially faced technical difficulties in syncing data between the site and the cloud, so worked to provide a stable solution.

A key issue has been the difficulty to commercialise this product in an industry that doesn't (yet) sufficiently value the benefits of verified installations.

What are our next steps?

Due to a company restructure, this project unfortunately closed in September 2023.

Guru may look to restart this project in future as additional resource becomes available.