# SHARING INFORMATION VIA HEAT MAPS

In 2014, the Scottish Government began to share information on the demand for energy to heat homes and businesses via an interactive online map. This soon became a valuable source of information for anyone looking to better understand the demand for heat in buildings and where there may be opportunities to reduce associated carbon emissions within Scotland by visually assessing supply and demand.

In 2021, the Scottish Government wanted to improve the map by adding more features and additional download services. This would enable the map to continue to play a critical role in assisting Scotland in meeting its renewable heat, low carbon and fuel poverty targets.
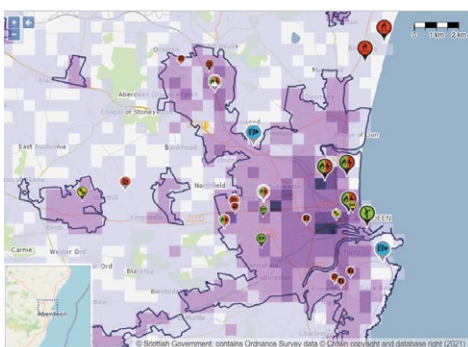
Project overview

The need

To reduce the amount of downtime caused by transitioning to a new map supplier, the Scottish Government needed a team of experienced and innovative developers who would quickly bring their vision to fruition.

The challenge

The improved interactive heat map needed to meet the requirements of a diverse range of users, including:

- The energy industry
- Researchers and policymakers
- Journalists and academics
- Local authorities
- Developers
- Community groups
- The general public

Key requirements

To meet everyone's needs, the map needed to be rich in functionality, engaging and intuitive. It also needed to:

- Work on both desktops and mobiles
- Allow users to customise the map view
- Enable reporting on heat supply and demand
- Seamlessly integrate metadata and data

Our solution

We recommended a bespoke development built on iShare, our popular web mapping solution. Particular attention would be paid to the user experience as well as performance and functionality.

The new site would be fully hosted and maintained by our experienced team.

Technical overview

We built the new heat map using iShare and our modern mapping interface, ol-ishare. The latest releases of OpenLayers, MapServer and PostGIS were used to deliver additional functionality.

Map overview

Datasets used include our pre-styled Astun Data Services OS base mapping, heat demand, energy supply, district and communal heat networks, geothermal and mining information, social renting percentage and administrative boundaries.

TAKE A LOOK
https://heatmap.data.gov.scot
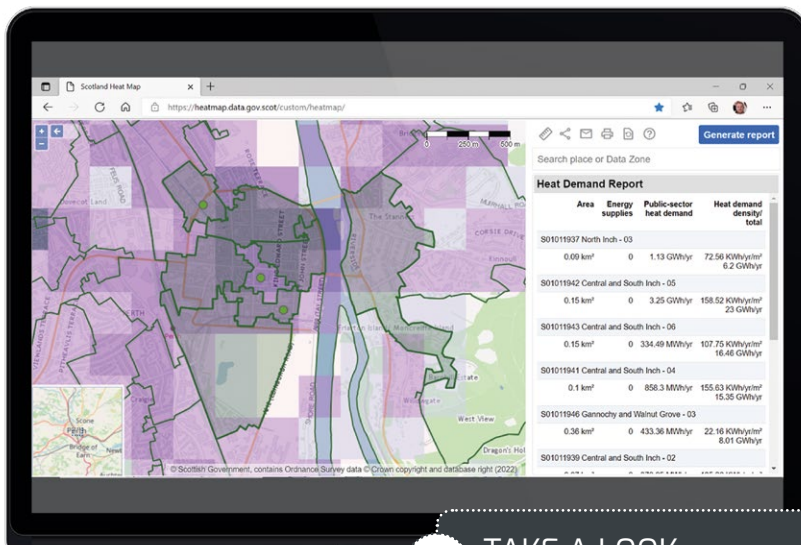
Results

After robust user testing by both our team and the Scottish Government, the Scottish Heat Map Interactive went live in December 2021.

Additional functionality which improves the user experience includes:

- **Layer opacity:** changes are reflected in the legend, making it easier for users to interpret data

- **Persistent map state:** users can reopen their browsers to see their maps exactly as they left them

- **Permalinks:** users can share URLs that take recipients directly to the senders' chosen map view

- **A measurement tool:** users can measure both distance and area

This functionality has now been added to ol-ishare to benefit our other clients.

"We wanted to give users a clean, modern interface with clear symbology to aid interpretation. We were keen to make more of the underlying data available for users to download in open source formats, including wms and wfs, and to include comprehensive metadata for all layers under our control. The Scotland Heat Map Interactive website delivers on these goals.

Additional new functionality, such as saved state, the ability to share links to a particular map set up, a tool to measure distance and area and more control over how layers are displayed, further enhances the user experience. We are very pleased with the new website and hope our users feel the same way."

The Heat Map Team
Scottish Government

Astun's view

"Having worked together on the Scottish Government's metadata catalogue (spatialdata.gov.scot), we were keen to work closely with more sector specialists at the Scottish Government.

Our shared input, expertise and attention to detail has ensured that the new interactive web map will satisfy thousands of users' needs each year."

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