
INDUSTRIAL PERSPECTIVE

Dr Aled Davies



Providers of renewable energy solutions for homes and business: Heat Pumps, Solar PV Panels, Solar Thermal Panels and Wind Turbines.



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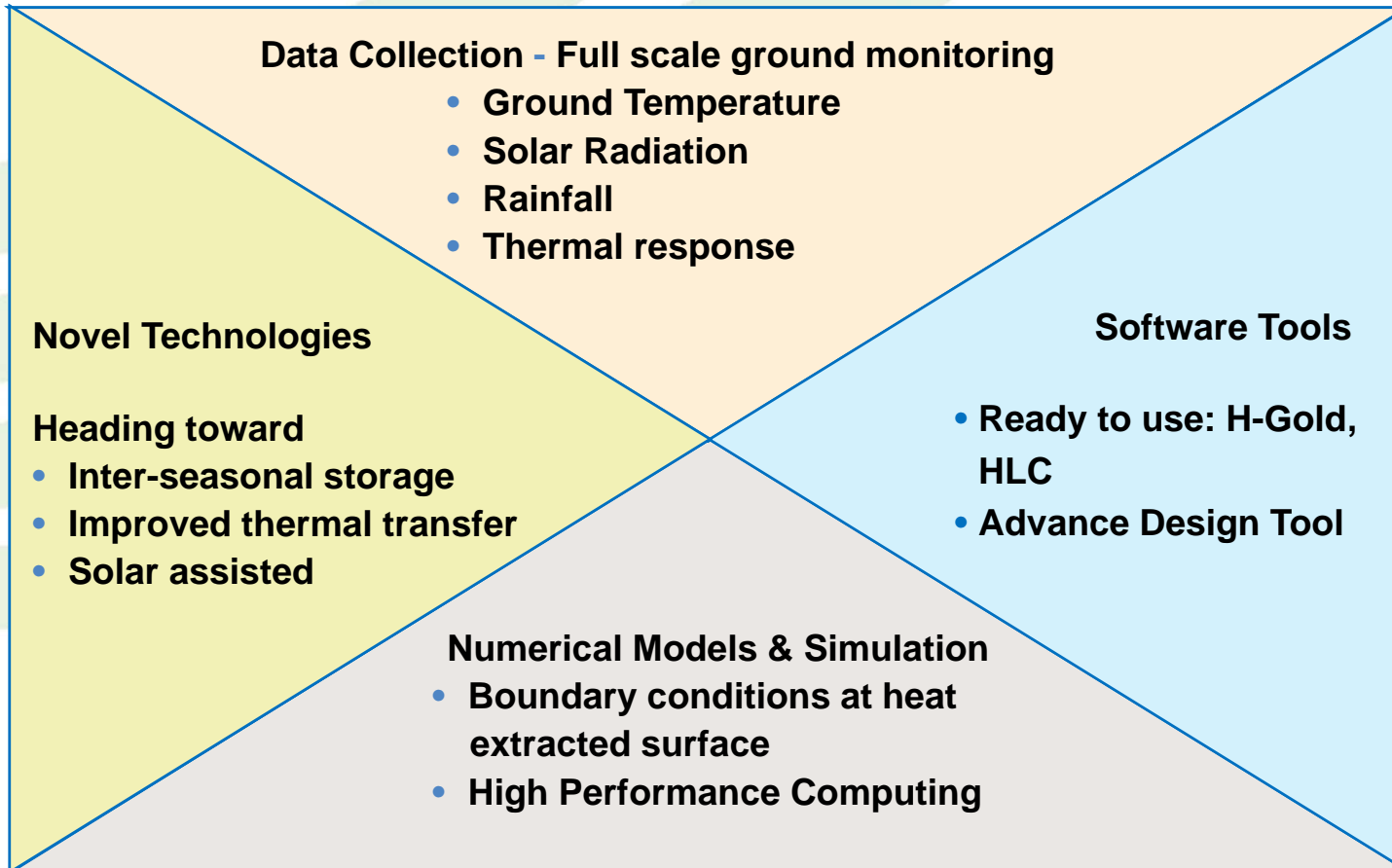


**British
Geological Survey**
NATURAL ENVIRONMENT RESEARCH COUNCIL

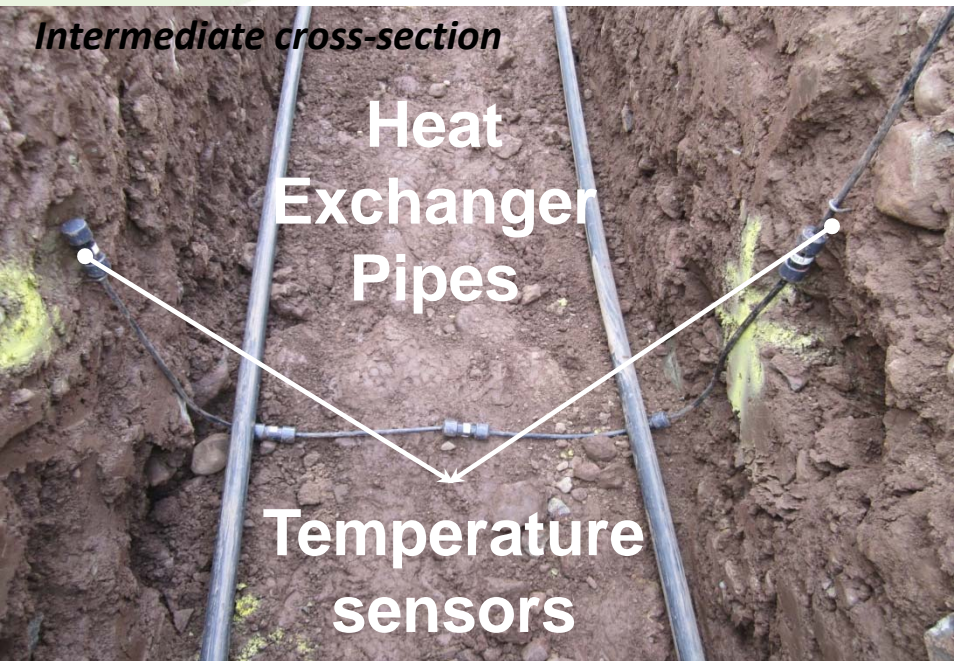
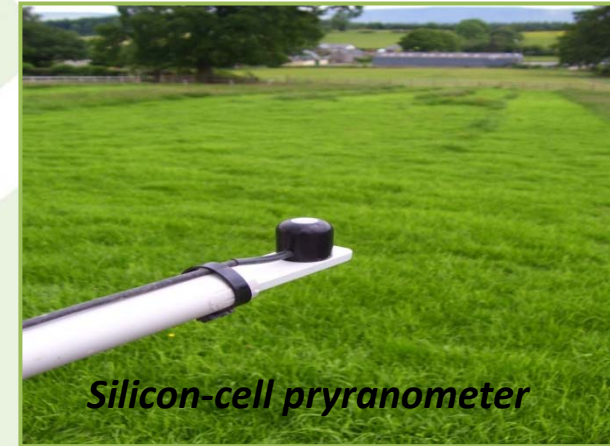


Providers of renewable energy solutions for homes and business: Heat Pumps, Solar PV Panels, Solar Thermal Panels and Wind Turbines.

WORK PACKAGE



DATA COLLECTION



SOFTWARE

Pre-feasibility study

Heat load calculation as per BS EN ISO13790

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H-Gold

Heat
Load
Calculator

Advance
Design Tool

Long term behaviour

ADVANCED DESIGN TOOL

- Software as a tool for companies in Consultancy, Designing and Installations
- Software will adequately provide long term behaviour for GSHP System

Type

- Calculates for 20 years:
Length of the loop & Hourly
change of Temperature In
the ground and heat carrier
fluid
- Finite Difference
Technique

Significant features

- Consider the effect of
- Monthly heat load
- Local weather condition

Seren Advance Design Tool

Reviews

- Can be improved as
Collaborative company
proposes

Delivery

- Standalone Software
- Developed in Visual Basic
and MATLAB

FUTURE DEVELOPMENT

Inter-seasonal storage

Improved thermal transfer

Solar assisted

Innovative ground-loop installation

WHY COLLABORATE

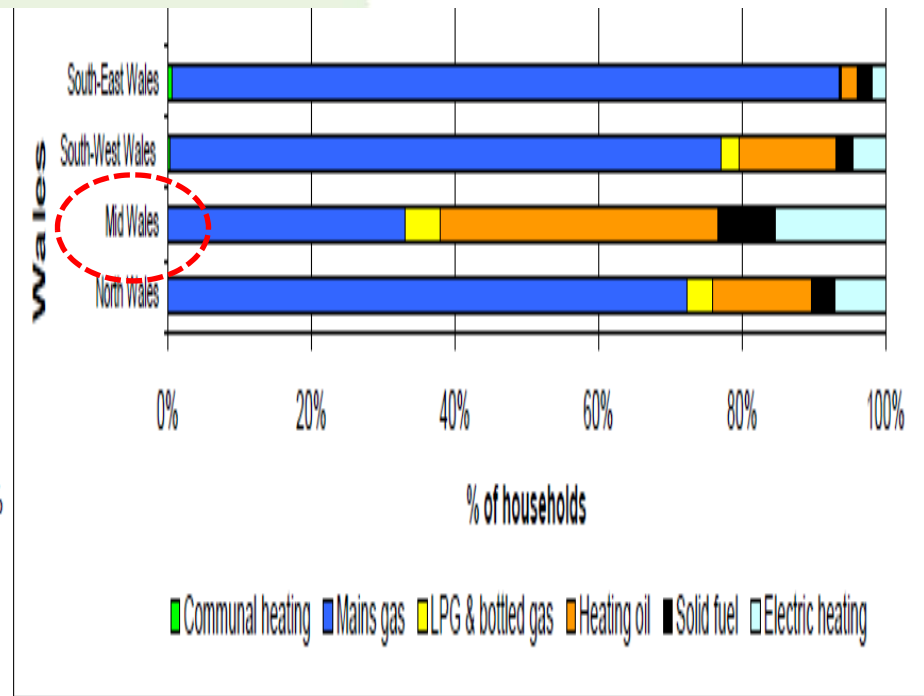
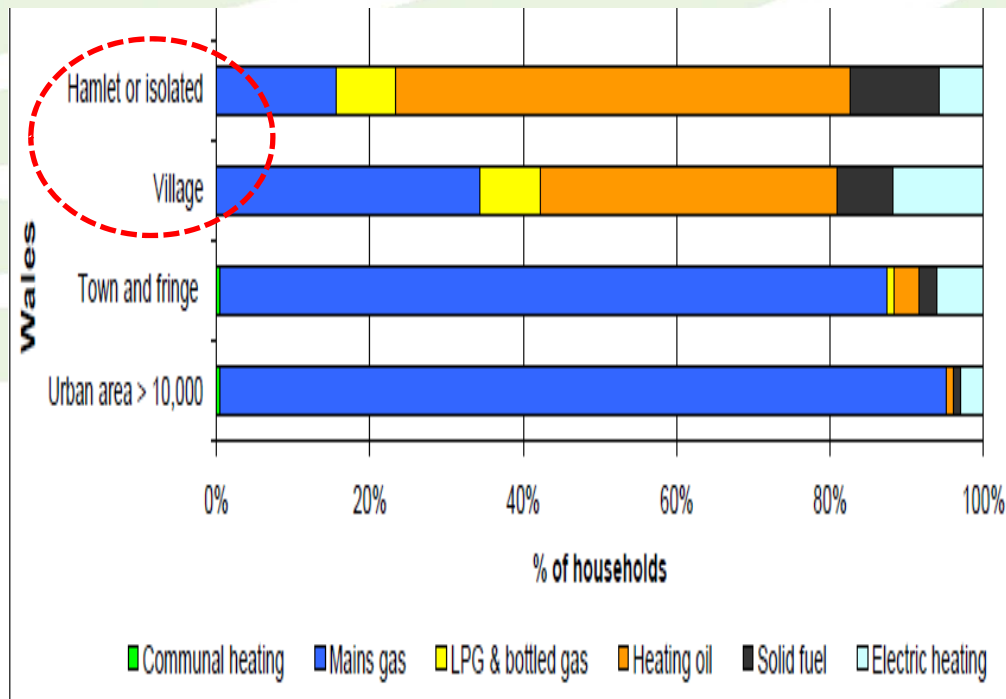
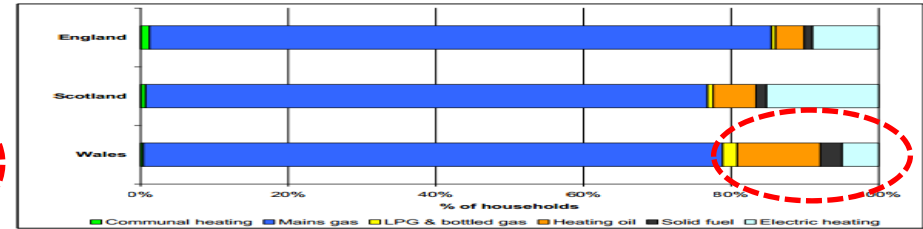
- Opportunity to enhance knowledge
- Development of new products and opportunities
- Exposure to new developing markets
- Great experience balancing academic goals and commercial demands

OPPORTUNITIES

Table 3: Availability and use of mains gas

Mains gas usage	England		Scotland		Wales	
	,000	%	,000	%	,000	%
Gas – main heating fuel ¹	18,288	85.4	1,789	76.8	999	78.9
Gas used for other appliances but not heating	489	2.3	53	2.3	26	2.1
In gas postcode, but no gas usage	1,096	5.1	171	7.3	53	4.1
Off gas grid	1,535	7.2	317	13.6	190	15
Total households	21,407	100	2,330	100	1,268	100

Figure 1: Main heating fuel in England, Scotland and Wales

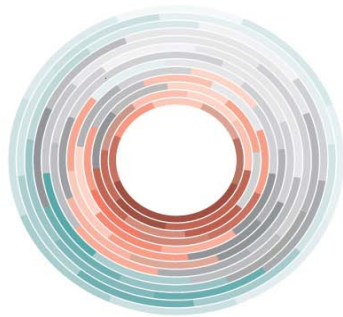


Data from Consumer Focus Report

OUR EXPERIENCE

- Difficulty finding appropriate sites and clients
 - Timing of site work, monitoring, data collection
 - Understanding how to develop software
 - Software user interface
 - Hurdles to implementation of novel technologies
-
- Great rapport with academic staff and students
 - Introductions to new organisations, clients and projects

**DIOLCH YN FAWR AM WRANDO
THANK YOU FOR LISTENING**



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FURTHER INFORMATION FROM www.wdsgreenenergy.co.uk