

# Water Quality Challenges & Collaborative Opportunities

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Catchment Manager

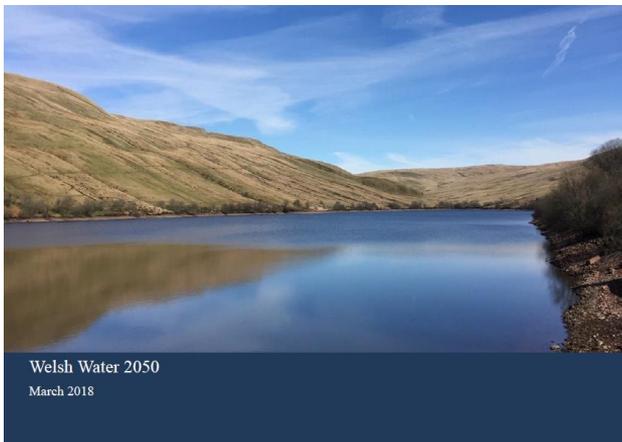


# This Afternoon

- ◆ Welsh Water 2050: Catchment Management
- ◆ Our catchments & raw water quality challenges
- ◆ Share research findings
- ◆ Identify common interests and opportunities for future collaboration



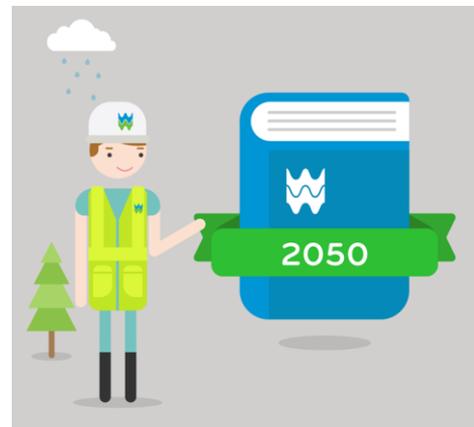
# Welsh Water 2050



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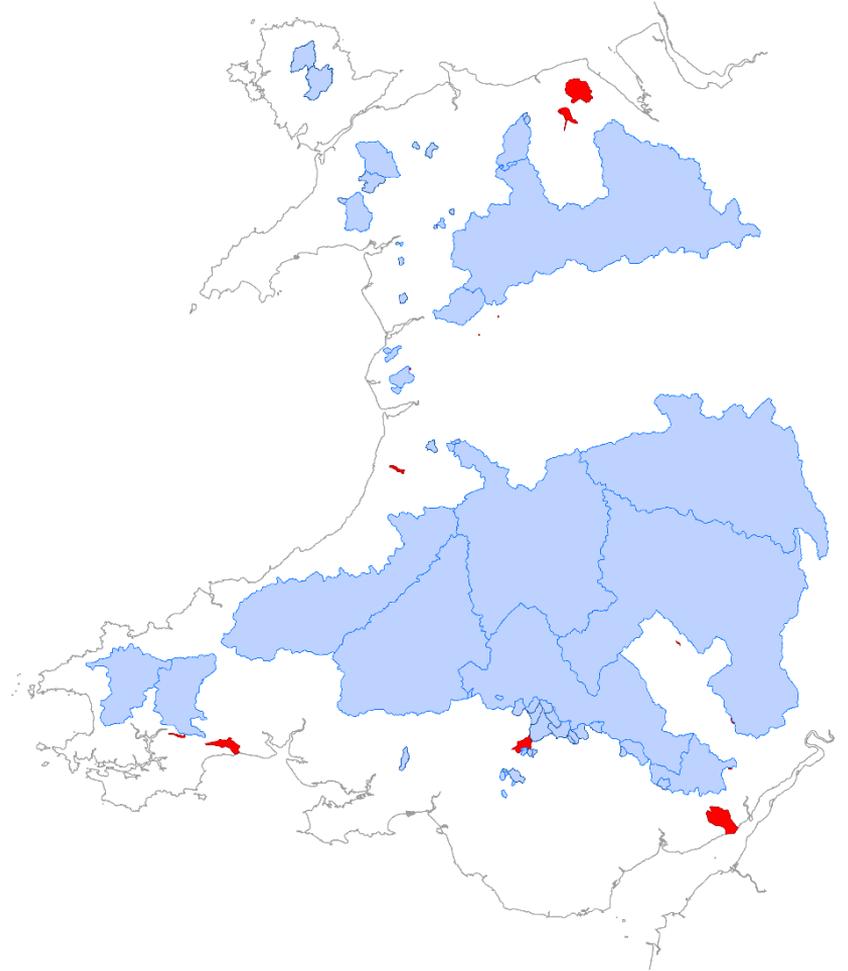
## Strategic Response 1: Safeguarding Clean Drinking Water through Catchment Management

- Co-create a catchment management programme with landowners and partners
- Underpinned by evidence: research, innovation and learning



# Our Catchments

- 💧 116 Catchments
- 💧 c. 11,000km<sup>2</sup>
- 💧 >800 ML/ Day
- 💧 Varied land use & characteristics



# Catchments: our First Line of Defence

- ◆ 62 Water Treatment Works
- ◆ Treatment capability varied; evolved to meet past challenges
- ◆ Catchment management can help secure raw water quality that is
  - expected
  - manageable
  - consistent
- ◆ Builds resilience & protect assets for future

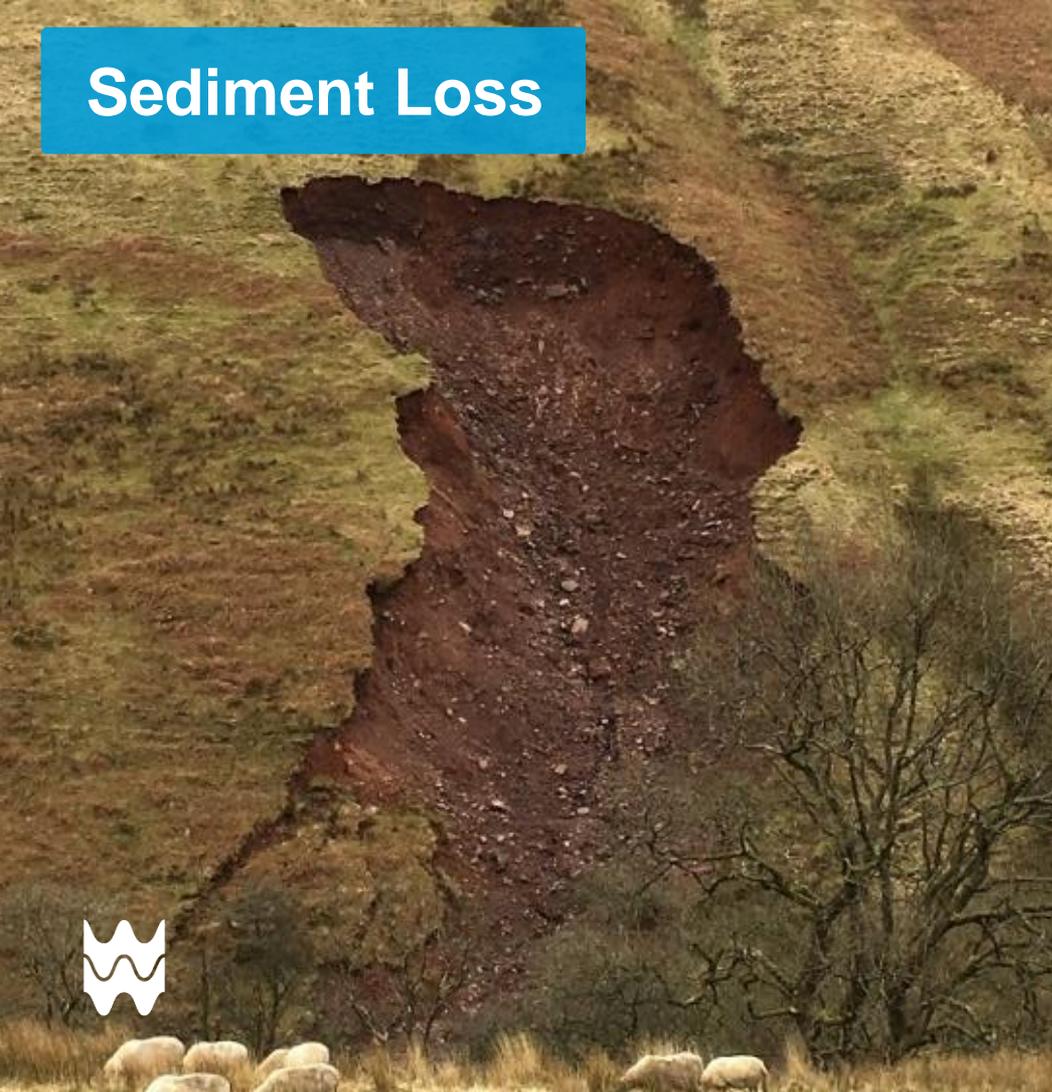


# Raw Water Quality Challenges

- ◆ Taste & Odour
- ◆ Cryptosporidium
- ◆ Bacteria
- ◆ Pesticides & Chemicals
- ◆ Organics
- ◆ Sediment
- ◆ Manganese
- ◆ Algae



# Sediment Loss

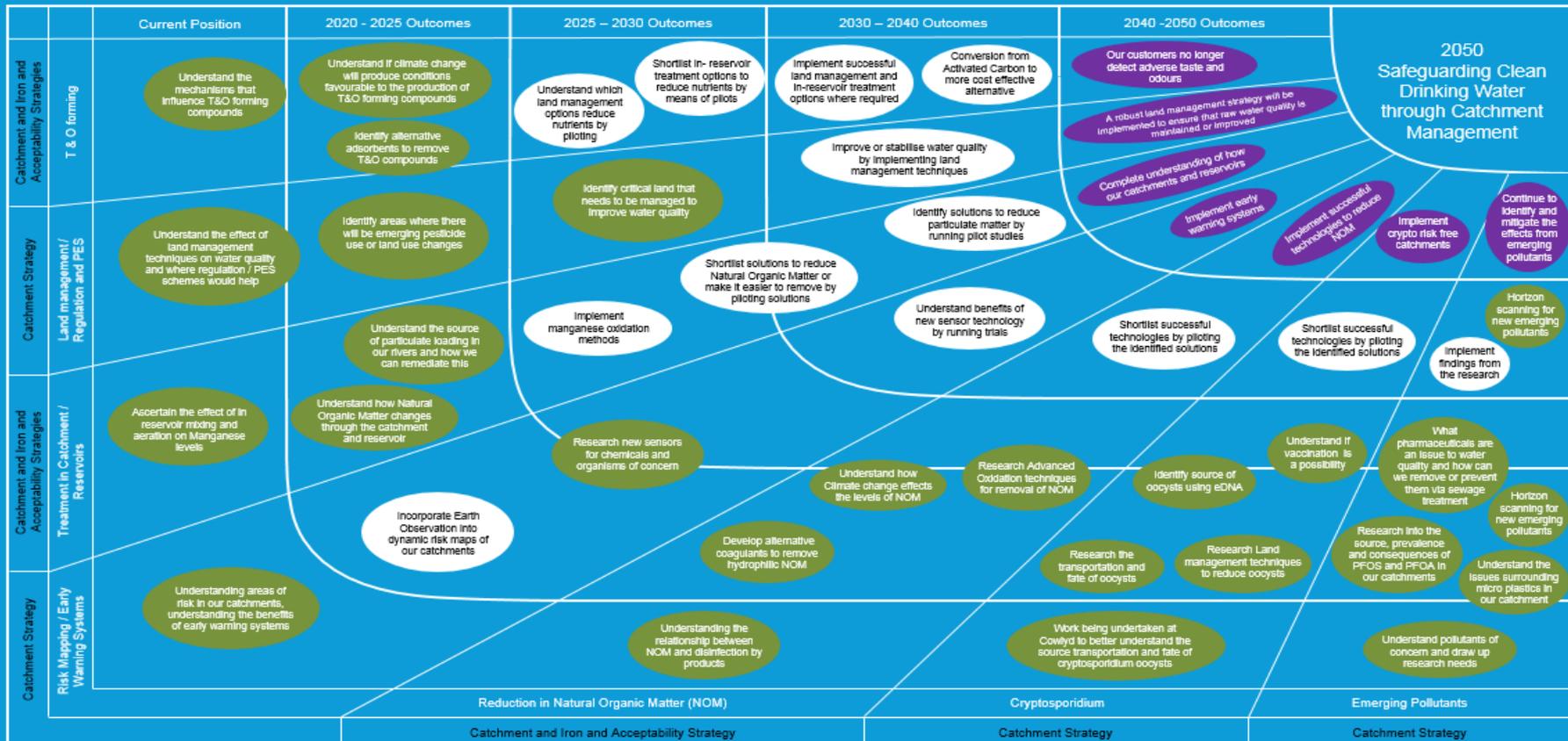


# Natural Organic Matter



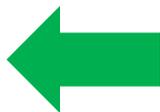
# Pesticides





## AMP6 (2015-20) Research

- ◆ Taste & Odour
- ◆ Algae
- ◆ Cryptosporidium / Bacteria
- ◆ Pesticides & Chemicals
- ◆ Natural Organic Material
- ◆ Sediment
- ◆ Manganese



### Supported by:

Research Projects  
SARIC (£10M funding)  
2x NERC Innovation Fellows  
2x PhD  
2x MSc  
UKWIR  
Research Collaborations

# Research Collaboration



Welsh Water  
established the  
UK Water Industry  
Taste & Odour  
Working Group



# Enhanced Monitoring



# AMP6 (2015-20) Land Management Pilots

- ◆ Developed our *WaterSource* approach

Pilots include:

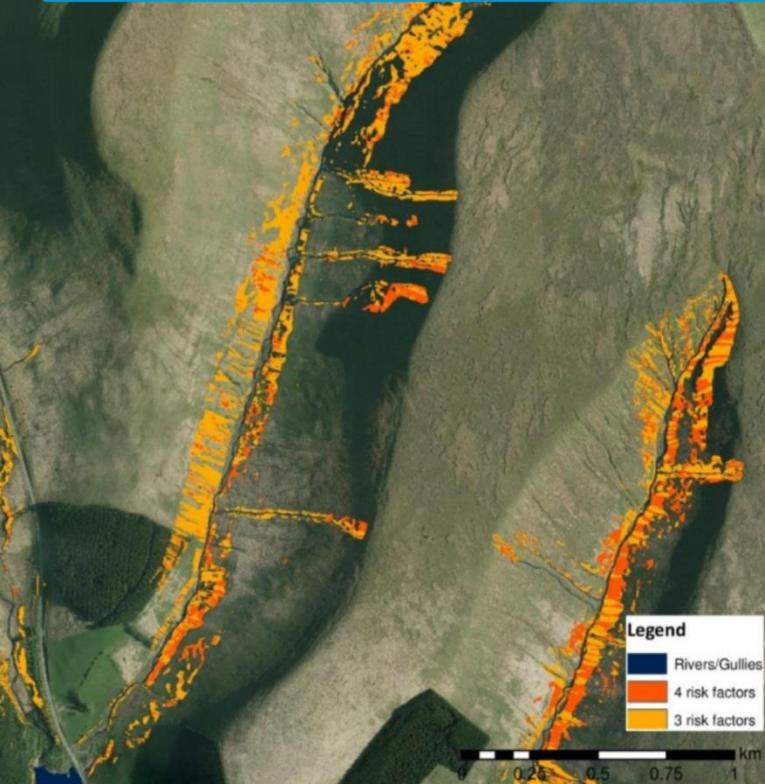
- ◆ Weed Wiper Trial
- ◆ PestSmart
- ◆ Forest Design Planning
- ◆ Cantref Catchment Partnership
- ◆ Brecon Beacons Mega Catchment



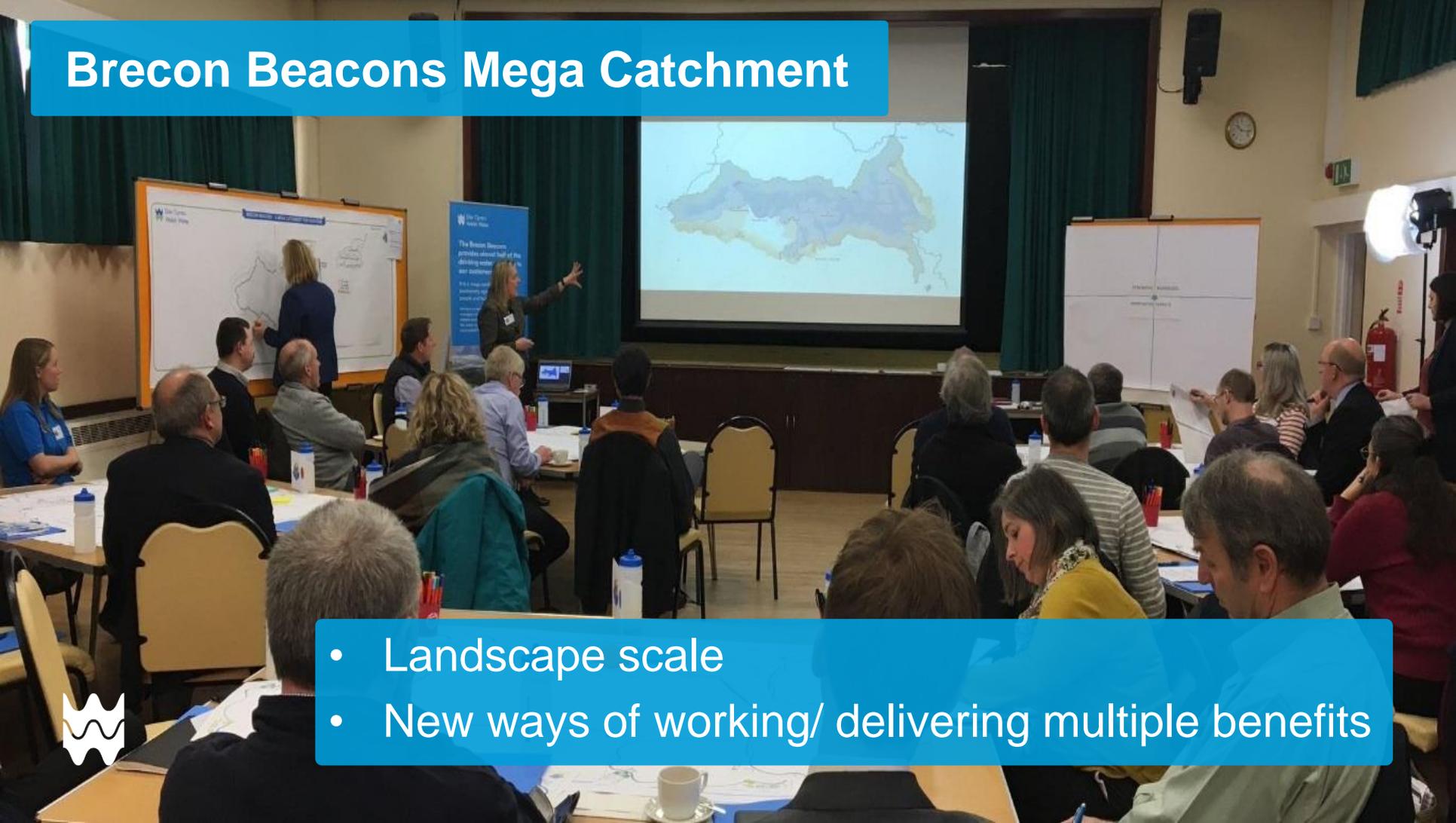
- Proactive approach
- Working across the pesticide supply chain



# Cantref Catchment Partnership



# Brecon Beacons Mega Catchment



- Landscape scale
- New ways of working/ delivering multiple benefits



Dŵr Cymru  
Welsh Water

University of  
BRISTOL

CARDIFF  
UNIVERSITY  
PRIFYSGOL  
CAERDYDD

CEH  
Centre for  
Ecology & Hydrology  
NATURAL ENVIRONMENT RESEARCH COUNCIL

COED  
CYMRU

FARMING  
connect  
cyswllt  
FFERMIO

UNIVERSITY OF  
BATH

Nufarm

SWECO

PRIFYSGOL  
BANGOR  
UNIVERSITY

Afonydd Cymru  
AC  
Caring for Welsh Rivers

AQUASCIENCE LTD

FUW  
UNDER AMAETHWYR  
CYMRU

BGS  
1835

NSA  
National Sheep Association

Environment  
Agency

NFU  
CYMRU

GIG CYMRU  
NHS  
WALLES  
Iechyd Cyhoeddus  
Cymru  
Public Health  
Wales

LANTRA

CLA  
CYMRU

Dalton's ATVs

# Collaboration

NERC  
SCIENCE OF THE  
ENVIRONMENT

SNOWDONIA  
NATIONAL PARK

CADWYN  
Clwyd  
Asiantaeth Datblygu Gwledig  
Rural Development Agency

APEM

LOGIC

UNIVERSITY OF  
LIVERPOOL

Cyfoeth  
Naturiol  
Cymru  
Natural  
Resources  
Wales

xylem  
Let's Solve Water

UNIVERSITY OF LEEDS

dwi  
guardians of drinking water quality

northern ireland  
water

LG SONIC  
Leading in ultrasonic algae control

WEARS  
AUSTRALIA

Scottish  
Water  
Always serving Scotland

Llywodraeth Cymru  
Welsh Government

National  
Trust

The  
Wye & Usk  
FOUNDATION

ofwat

ADAS  
RSK

BRECON BEACONS  
NATIONAL PARK

UISCE  
EIREANN - IRISH  
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