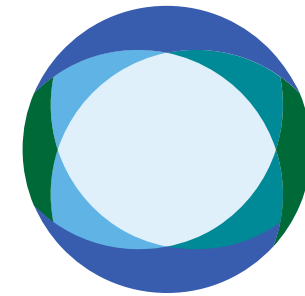


Hydro Nation Chair Research & Innovation Programme

Professor Andrew Tyler
Scotland Hydro Nation Chair



Hydro
Nation
Chair

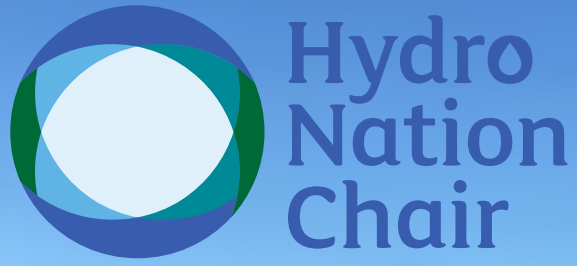
Net Zero - Scottish Water Sector



SCOTLAND
BEYOND
NET ZERO

30 September 2025





OUR VISION

An agile research and innovation community enabling Scottish Water to transition beyond net zero by 2040

OUR MISSION

Act as a catalyst to grow research and innovation capacity that enables Scottish Water to achieve its strategic ambitions and positions Scotland as a world leading Hydro Nation, by:

- building strong collaborations and partnerships
- facilitating new capability deployed at scale
- delivering opportunities for change and clean growth.

Priority Areas

Accelerating the testing & deployment of prioritised technologies

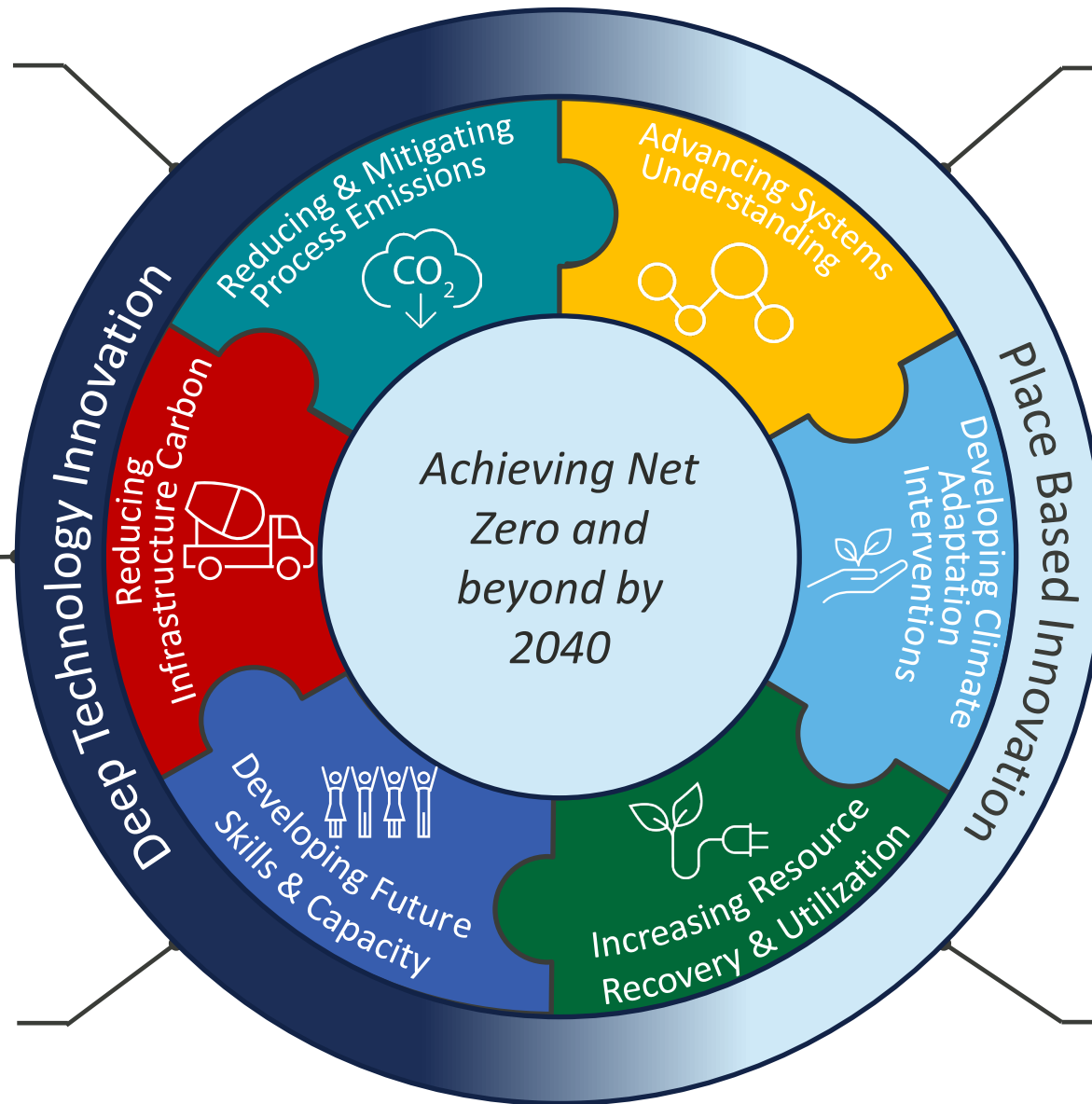
New knowledge & decision making through next generation technologies

Delivering knowledge, evidence & solutions

Assessing opportunities to enhance, transform & adapt service delivery

Upskill, reskill, attract & retaining talent

Using circular economy principles to grow resource recovery & transform the asset base



Impact of HNC by stimulating R & I ideas, solutions & Interventions through the HNC Catalyst Funded projects



Multidisciplinary events, centred around a challenge facing the Scottish Water sector: Galvanising new ideas, solutions, interventions, collaborations and thinking.



A range of projects covering novel and early-stage solutions, social science research, participation methods and testing established ideas never applied to the Water Industry.



33 Projects funded > £700k



>200 attendees



Process Emissions

Net Zero

Reconciling
Floods &
Drought

Reservoir
Water
Quality

Exploring
Inter-
disciplinarity

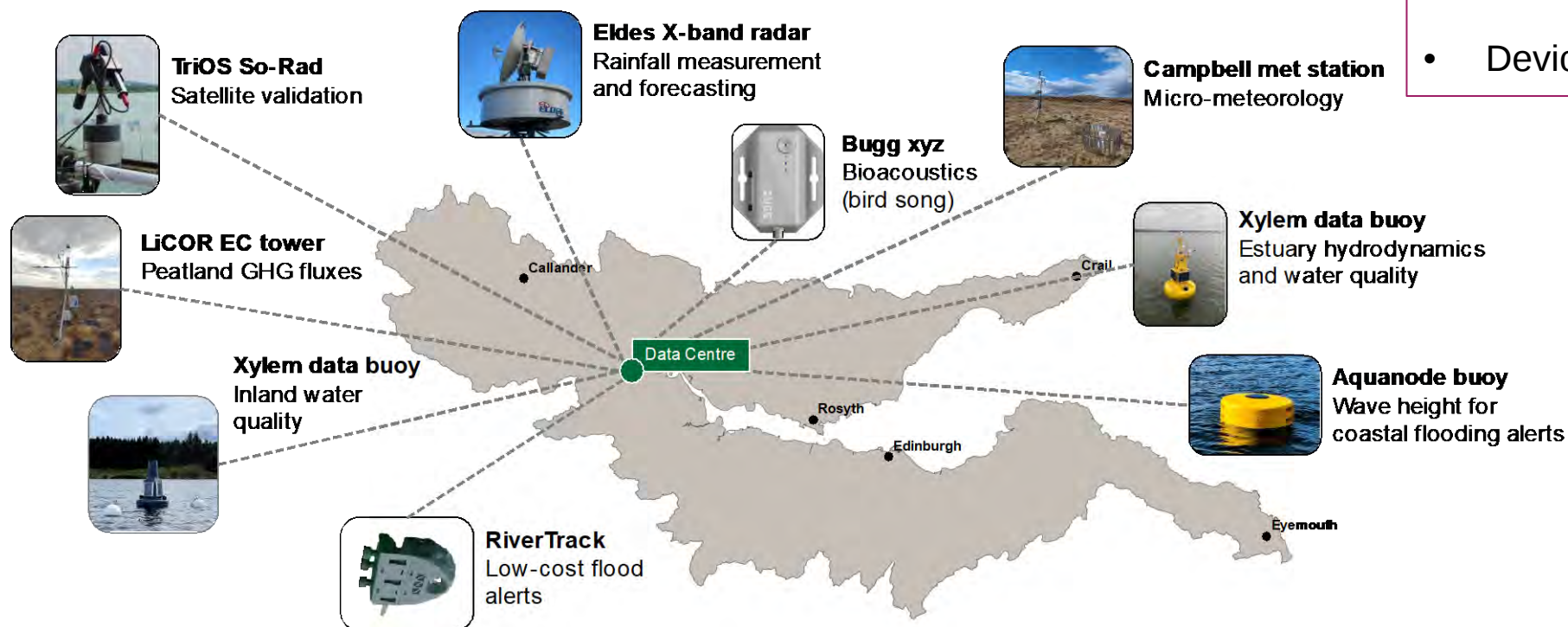
Circular
Economy
(with IBioIC)

Next: HNC
Conference
Spring 2026

CRD: Impact of HNC through leveraging research Infrastructures such as Forth-ERA

KEY FEATURES

- Cybersecure
- Scalable
- Device agnostic



The Forth-ERA sensor will consist of **25 DEVICE TYPES** in **350 LOCATIONS** with more than **1000 SENSORS** collecting over **100 MILLION MEASUREMENTS** per year



Investment
Leveraged

£19.2M external funding (UKRI, OfWat):

examples: £2M NERC MOT4Rivers demonstrating the provenance and ecological impact of pollutants in the River Almond & nationally; £5M ESRC Forth2O building on digital data to inform policy, planning and innovation; £750k DEFRA/NERC SenseH2O; £6M OfWat BICE Project.



Digital
Observation



Leveraging the £9.5M Forth-ERA programme:

Use of satellite, drone and in situ sensor technologies to deliver systems understanding, measure benefit of nature-based interventions on water quality, quantity & carbon offsetting, including peatland restoration & woodland regeneration.

Greater
Reach into
Academia

200 participants across 6 HNC crucibles:

Mission led and co-developed with SW R&I, reaching over 200 participants academia, industry & practitioners together, with SW, to deliver greater insight & novel solutions.



Accelerate
Innovation

9 commercial prospects supported:

Accelerating innovation pathways: Glasgow, decentralised treatment; St Andrews - Lightwater Sensors & Fuel Cells; Manchester - Solar Ethos, Aquacatalysis; Hutton - Elektrikle Filtration, Stirling - EO for tree mapping/woodland regeneration.



Trans-
forming
Place



4 initiatives of partnership working:

Driving multipartner working for SW priorities: Alloa - Forth Bank Circular Economy Hub, Blue Green solutions - Almond Light House & Leven Programme; Retrofit in the Water of Leith.

State of the
Art Tech

300 technologies reviewed, 18 sourced & 12 championed:

Identifying new and novel technology solutions to transform service delivery: GrandPerspective Trial; Wizso trial and technologies for the Resource Recovery Factory for the Circular Economy.



Catalysing
New
Solutions



Invested £700K in 33 early-stage projects:

Built new partnerships across research & innovation community, leading to further ambitious funding applications to UKRI/OfWat, with Scottish Water.



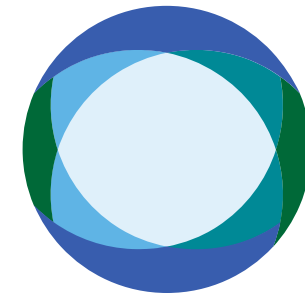
Thank you



www.hydrationchair.scot



E: hydronation@stir.ac.uk
a.n.tyler@stir.ac.uk



Hydro Nation Chair

Net Zero - Scottish Water Sector

