



**Institute
of Water**

Roundtable discussion notes

Water and the circular economy in Scotland

9 February 2017

Indepen is a management consultancy working with clients facing the challenges of regulation, deregulation, competition and restructuring. We help investors, boards and senior managers identify and assess political and regulatory risk and to develop and implement internal and external strategies to manage their exposure.

Our clients are the organisations involved in financing, constructing, managing and regulating built and natural infrastructure – water, energy, transport, land and property. We have constructive relationships with relevant government departments and agencies.

Our team combines experience of public policy, regulation, corporate finance, communication and engagement and organisational development. We complement this with input from our associates – CEOs and chairs of FTSE and privately owned companies, regulators, government ministers and academics.

The Indepen Forum provides the opportunity for investors, government and business leaders to debate, under the Chatham House Rule, issues that if mis-handled could undermine well-intentioned policy initiatives.

Table of Contents

1	Introduction	1
1.1	Purpose of the debate	1
1.2	Structure of the debate	1
2	The discussion	1
2.1	The importance of a water and circular economy debate	1
2.2	The big challenges	2
2.3	Where are the opportunities to make progress?	3
3	Commitment to action	4
Appendix A – Roundtable attendees		6
Appendix B – Briefing on the circular economy and the water sector in Scotland		7

1 Introduction

1.1 Purpose of the debate

On the 9th February, the Institute of Water hosted a roundtable as part of Scottish Government's Scotland the Hydro Nation initiative. The topic of the roundtable was the role of the water sector in the circular economy of Scotland. The objectives of the roundtable were

- to start the conversation about water and the circular economy and build trust among the organisations present.
- to gain commitment to more collaborative working using the circular economy approach as a driver for change.
- to seek early actions that organisations can commit to in preparation for bigger circular economy events planned by the Institute of Water and Scottish Government Hydro Nation, in May and October 2017 respectively.
- to create new relationships and innovative thinking that will enable the water sector to support a circular economy.

1.2 Structure of the debate

A list of attendees is attached as Appendix A. The background briefing paper shared with the attendees prior to the debate is attached as Appendix B.

Indepen facilitated the debate under the Chatham House Rule. A wide range of issues were explored which we have grouped under three main headings

- Why is this debate important?
- What are the big challenges?
- Where are the opportunities to make progress?

2 The discussion

2.1 The importance of a water and circular economy debate

The case for the circular economy itself is supported in Scotland and across the world, as outlined in the pre-event briefing. Roundtable attendees saw that a debate on the subject in the water sector would create a number of opportunities to

- build alliances to develop some of Scottish Water's existing initiatives, especially in rural areas.
- share understanding of the importance of the circular economy to Scottish Government and its economic strategy for Scotland.
- understand the opportunities to link across sectors, such as health and pharmaceuticals.
- explore where circular economy thinking can link to the regulatory agenda to help make the right decisions for the good of society.
- create links between the water sector and the broader range of Scottish Government initiatives around smart resource use.
- strengthen Scotland's ability to share its knowledge across the world, building on the award received at the 2017 World Economic Forum which recognised it as one of the world's top circular economy nations.
- shift the focus towards integrated environmental management, using collaboration to go beyond compliance with legal requirements.
- create new ways of thinking about living within environmental limits.
- create new ways of thinking about water company performance, its wider role and the language it uses to engage with customers around sustainable use of the water system.
- create tangible projects that can test innovative solutions, collaboratively across the supply chain, involving academia and SMEs.
- understand how best to use new business models that might accelerate adoption of innovative technologies.
- understand the drivers of value in the water sector to identify opportunities for enterprise and sustainable growth.

2.2 The big challenges

Scottish Water is at the heart of Scotland's water sector. Yet customers do not connect recycling to its business. When Scottish Water produced its futures report, in 2012, there was no mention of the concept of resource recovery.

The attendees noted that Scottish Water has now put the circular economy at the heart of its most recent sustainability report and there is an opportunity to continue this emphasis in the refresh of its longer term vision for the future. This vision will focus on sustainability, resilience and customer needs. Some of the challenges it has identified include

- working with supply chain partners to maximise asset life and to enable smart, low carbon construction and maintenance.
- creating an energy positive wastewater sector, encompassing opportunities to share sludge management resources with agriculture and whisky sectors.
- building the capability of communities to design, build and operate their own water systems.

The chair asked the attendees to consider, in relation to the water sector's contribution to a circular economy, what does good look like in twenty years' time? A number of ideas emerged, which included

- Scotland will achieve make a significant contribution to the UN's sixth sustainable development goal, to ensure availability and sustainable management of water and sanitation for all.
- economic regulation of Scottish Water will have further developed around the concepts of "ethical regulation", encouraging transparency with customers and incentivising solutions that are economical in the long-term.
- solutions to water problems will look to optimise outcomes throughout the life cycle of materials, not just to achieve compliance in one part of the value chain. The example of alum waste in the water treatment process was cited as an example where circular economy thinking would have triggered more sustainable long-term solutions.
- options analysis will start with a full exploration of the value of reducing or designing out demand, perhaps inspired by the goal of "try for zero" in relation to pollution and waste.
- the value of nature, and nature based solutions, will be incorporated into decision making frameworks, for businesses and regulators.
- closed loop, state of the art solutions will be identified for rural communities in particular.

2.3 Where are the opportunities to make progress?

Roundtable attendees raised many examples of ideas and initiatives that could either be developed further or co-ordinated into a common theme. These included

- customer messaging and behavioural change. This was identified as an area where learning could occur from other sectors (such as food waste separation or the plastic bag tax) or where joint messaging and research could be developed (for instance around green pharmaceuticals and clean drinking water).
- developing collaborative experiments in the Highlands and Islands. For local authorities, the NHS and Scottish Water, meeting the needs of rural communities is a major challenge. Attendees raised several examples where innovative responses might better be discovered by a looking at the total needs of the whole community through a public sector collaboration.
- encouraging conversations across the supply chain about the whole life costs of water services. Highlighting the challenges to entrepreneurial organisations will create an atmosphere conducive to innovation and experimentation. The links between hydrogen fuel cells and rural clean water needs are not immediately apparent, but they could provide the ultimate example of closed loop sustainability.
- widening the conversations about how to capture the value from resources in the water system. Again, if an entrepreneurial mind set is encouraged into the debate then new solutions may emerge. This debate should acknowledge that value is not always directly from recovered resources or measured in pure monetary terms. There is considerable value from Scotland's reputation as a provider of pristine environments, something that many of its luxury brands, goods and service rely on.
- catchment approaches. Initial work by Scottish Water has shown that catchment management can offer lower cost solutions by careful use of resources. It also creates opportunities to collaborate across sectors, particularly the food and farming sector, and to engage with customers about the impacts of their behaviours, for instance around the use of non-flushable wipes.

3 Commitment to action

Attendees recognised two main themes in the debate: the need to collaborate and to experiment more. Attendees expressed a wish to establish networks that share information, and to carry out more research into the behaviour of customers and communities when presented with options that promote more circularity. Finding solutions for rural solutions was identified as a major driver, an area where the water sector could provide leadership that solved a wide range of society's ills.

In summing up the debate, the attendees highlighted the following areas where they felt they could make progress, collaboratively, across the water sector

- change the nature of discussion with customers
 - follow the concepts of ethical regulation to increase debate about the opportunity to reduce long term costs and be honest about some of the contradictions in the regulatory system, for example around sludge management and co-digestion in the Highlands.
 - raise awareness of the finite-ness of some resources and the value of recycled products from the water sector, including exploration of how to market or trigger behaviour change.
 - carry out more behavioral science research to better understand customer behaviours in relation to the costs of their water services and explain what else this money could have been spent on.
- bring SMEs to the table and better co-ordinate the efforts of the supply chain
 - be positive about the need for SMEs to help provide innovation. This can be triggered by simple statements of the priority challenges faced by the water sector.
 - aspire to a long-term goal would be for SMEs to be able to persuade major companies to adopt ideas within six months of successful demonstration.
 - engage young entrepreneurs in the challenge of solving the resource behaviours of today. What will bemuse their children in the same way as our generation's children are when confronted by behaviours such as not wearing a seat belt or smoking?
- focus on the rural community challenge
 - use the opportunity the linked challenges of clean water and sustainable healthcare in the Highlands and Islands to trigger new dialogue between the water sector, hospitals, communities and pharmaceutical firms.
 - build common messages with NHS and the sustainable pharmacy agenda.
- create more contact between the water and waste management sectors
 - SEPA, ZWS and Scottish Water have started a new dialogue, this could gather some baseline information around resource flows.
 - Scottish Government's water team will publish a programme of circular economy work initiatives across Scottish Government to highlight where co-ordination of initiatives and thinking can occur.
- structure information sharing and experimentation
 - a starting point could be a mechanism for collecting and categorising where relevant technologies are being test around the world and in Scotland.

- when it comes to understanding barriers to behaviour change, there are many examples in other sectors that ZWS and HIE can share with Scottish Water.

Throughout the debate it was clear that collaborative action, involving Scottish Water, is essential. All attendees were committed to making this happen and were keen to hold themselves to account with a repeat of this sort of event within the next twelve months.

In conclusion, the chair observed that the debate had been one of the most ideas-rich events that Indepen had ever facilitated. One attendee did observe that there are many incremental steps underway, but these steps may be constrained by the boundaries of current governance. To achieve transformative change, it might be necessary to reimagine a new system and to describe what new behaviours this would require of the main agents.

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Appendix A – Roundtable attendees

A.1 Facilitator

Name	Role	Organisation
Ann Bishop	Partner	Indepen

A.2 Participants

Name	Role	Organisation
Ian Barker	Director	Water Policy International
Elise Cartmell	Chief Scientist	Scottish Water
David Baxter	Partner	Indepen
Diane Duncan	Head of Low Carbon	Highlands & Islands Enterprise
Jennifer Leonard	Water Industry Planning Unit Manager	SEPA
Stuart Gibbs	Director of the Environmental Research Institute	University of the Highlands and Islands
Allan Mason	Senior Project Manager	Scottish Water
Louise McGregor	Head of Circular Economy	Zero Waste Scotland
Clive Mitchell	Strategic Direction Manager	Scottish National Heritage
Belinda Oldfield	General Manager Revenue and Risk	Scottish Water and President of Institute of Water in Scotland
Jim Panton	CEO	Panton McLeod and next President of Institute of Water in Scotland
Simon Parsons	Director of Strategic Customer Service Planning	Scottish Water
Adam Purvis	Director	Power of Youth
Jon Rathjen	Water Industry Team Leader	Scottish Government
Ian Rudd	Director of Pharmacy	NHS Highlands
Alan Sutherland	CEO	WICS
Mark Williams	Environmental Regulation and Climate Change Manager	Scottish Water

Appendix B – Briefing on the circular economy and the water sector in Scotland

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**Circular economy and the water
sector in Scotland**

Scotland the Hydro Nation

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Indepen Limited 50 Broadway, Westminster, SW1H 0RG
www.indepen.uk.com