



Tracing Invisible Water Demands:

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Tracing Invisible Water Demands: Roundtable Summary

June 11, 2025

Dr Claire Hoolohan¹, Leilai Immel-Parkinson¹, Dr Ella Foggitt¹, Prof Alison Browne²,

- ^{1.} Tyndall Centre for Climate Change Research, University of Manchester
- ^{2.} Geography; Sustainable Consumption Institute, University of Manchester

Overview: On June 11, 2025, researchers from the University of Manchester's Tyndall Centre and Sustainable Consumption Institute hosted a roundtable discussion bringing together water sector professionals, policy experts, and government representatives to explore how policies beyond traditional water management are quietly reshaping UK water demand. The session presented findings from the "Tracing Invisible Demands for Water" (TriDeW) project and facilitated expert discussion on cross-sector policy and impacts for water demand.

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The Challenge

Water stress is an immediate crisis across England, with the Environment Agency forecasting a 4,800 megalitres per day shortfall in public water supply by 2050¹. While demand management is expected to contribute 65% of the solution, current approaches often miss how policies in water adjacent sectors (e.g. energy, housing, health, and economic development) invisibly drive water consumption.

The average UK person now uses 70% more water than in 1985² (Waterwise), driven by societal shifts including increased domestic appliance ownership and changes in their use, changing hygiene and leisure practices, social norms and routines, and shifts in everyday routine (e.g. working from home). These changes intersect with policy decisions made far beyond the water sector.

The Research

In 2025 the Tridew (Tracing Invisible Water Demands) team set about identifying policy areas with potential impact to water demand; reviewing grey literature to identify key policies within each area; and undertaking critical analysis of these policy domains. While a range of policy areas were found, six were the focus of the analysis: Energy and Climate Change; Housing and Community Services; Health; Economy and Digitalisation; Employment and Labour Policies; and Sanitation and Sewerage. The last stage of this research project was to hold a policy roundtable with trusted colleagues across a range of government departments and organisational settings to sense check the analysis, accuracy, and ensure we have captured up-to-date policy knowledge.

Key Findings

This roundtable session with 14 policy and other professionals focussed on three of these areas: Energy and Climate Change, Housing and Community Services, and Health. An additional three areas—Economy and Digitalisation, Employment and Labour, and Sanitation and Sewerage—are also covered by TriDew but were not explored in detail during this session.

For each, we identified potential impacts on demand in terms of:

- Additional demand for water (direct and indirect).
- Escalating existing demand for water (e.g. increasing frequency/duration of existing water intensive practices).
- Shifting the location and/or timing of water use, particularly into water stressed regions.
- Changing the overall character of water use within a region (e.g. shift residential and non-residential demand).

We sought to identify potential risks of failing to fully consider the impacts of policy developments on demand, and additional opportunities for water-adjacent policies to contribute to achieving demand reduction.

The research team proposed three key recommendations for policy:

1. **Joined-up policy making:** Develop mechanisms to enable coordination between distributed actors and competing policy agendas across government departments
2. **Precautionary approach:** Systematically assess water demand impacts of policies across all sectors before implementation, identifying unintended consequences before they affect water systems

3. **Embed water considerations:** Integrate water demand as an issue of "collective concern" across all policy domains, similar to how net-zero considerations are now embedded across sectors

Summary of thematic areas

1. Energy and Climate Change

Focal policies: Clean Power 2030 Action Plan, Climate Change Act, Energy Act, Fuel Poverty & Warm Homes Plan

- **New demand creation:** Clean Power 2030 targets and the Energy Act will drive substantial industrial development (e.g., renewables, nuclear, hydrogen infrastructure) requiring significant water for both construction and ongoing operations.
- **Geographic concentration:** Major new industrial sites create localised demand hotspots in already water-stressed regions.
- **Missed opportunities:** Climate policies show minimal acknowledgment of water-energy nexuses, with outdated interventions like low-flow shower heads referenced in carbon budgets.

2. Housing and Community Services

Focal policies: Planning & Infrastructure Bill, National Policy Planning Framework, Future Homes Standard, Retrofitting policies

- **Development pressure:** Plans for 1.5 million new homes by 2029, concentrated in key growth corridors, will increase demand across domestic, community, and industrial sectors.
- **Hidden demand drivers:** Active travel infrastructure may increase showering/washing frequency; community service provisions require supporting water infrastructure.
- **Policy limitations:** Current approaches prioritise individual over community service models and overlook whole-system water management principles.

3. Health Policy

Focal policies: NHS Reform (Care in the Community), Social Prescribing Schemes, Therapeutic Water Use Recommendations, Parasites/Pests/Pandemic Guidance

- **Water use for health, hygiene and wellbeing:** Water requirements to maintain hygiene in times of infection or infestation, and to support therapeutic practices such as hot/cold water treatments.
- **Care shifting:** NHS "care in the community" policies move water-intensive care from hospitals to homes, potentially reducing economies of scale.
- **Social prescribing:** Efforts to increase health and wellbeing through increased participation in outdoor activities and access to blue and green space. Some of these directly require water use (e.g. for irrigation), others create post- activity washing.

Expert Discussion: Key Themes

What are the most worrying areas of policy development for water demand?

Participants highlighted several concerning trends:

- **AI and data centres:** A major emerging theme with significant uncertainty around water demands. While regulatory bodies are working with industry to understand requirements, participants noted that data centres can have substantial water needs, though alternative cooling methods exist. Some regions expect significant development, though enhanced

assessment processes may provide some oversight. This trend is explored in TriDew's 'Economy and Digitalisation' cluster.

- **Distribution vs. resource problems:** Many new demands involve intensive but short-period use, creating distribution infrastructure challenges rather than absolute resource scarcity. Mitigation strategies include onsite storage as buffers and integrating cooling approaches into sustainable drainage strategies.
- **Energy sector water consumption:** Water consumption for hydrogen production and carbon capture and storage. Water considerations have gained prominence in energy assessments over the past four years, though still not always prioritised in policy development. This trend is explored in TriDew's 'Energy and Climate Change' cluster.
- **Biotech and healthcare expansion:** Growth in laboratories, biotech facilities, and healthcare, particularly in major research and development corridors, are under-analysed. This includes new hospitals and centres of excellence that could increase local water demands. This trend is explored in TriDew's 'Health' cluster.
- **Construction and Manufacturing:** A knowledge gap exists around water consumption during construction and manufacturing processes, with limited clear targets for improvement.
- **Infrastructure Considerations:** Discussion highlighted that new housing developments require water infrastructure not just for housing but for supporting services including health centres, recreation sites, sports clubs, swimming pools, and green spaces, creating multiplicative demand effects. This trend is explored in TriDew's 'Housing and Community Services' cluster.

Is water being appropriately considered in adjacent policy areas?

Discussion revealed mixed but improving progress:

- **Energy sector improvements:** Water has risen on policy agendas over the past four years, particularly regarding hydrogen production and carbon capture storage. However, water is still not always the primary consideration in policy development, and coordination across government departments remains challenging.
- **Growth and development:** Water constraints are increasingly limiting growth, with development now a higher priority alongside water concerns. Growth is currently a priority for the UK Government, and guiding activity across multiple departments. Water has rapidly risen on the agenda, and water demand management is viewed as essential to enabling growth, particularly in key development regions. Going beyond conventional water efficiency activities is needed to enable water-sensitive growth.
- **Cross-departmental consistency:** Participants noted significant problems with consistency across government departments regarding water efficiency. For example, education department guidance on new schools reportedly doesn't adequately accommodate space for water reuse systems.
- **Environmental principles integration:** There is a duty on ministers and officials to consider Environmental Principles Policy Statements in policymaking, though it's unclear how systematically water demand and scarcity are being considered and actioned across different policy areas.
- **Professional water literacy:** A critical gap exists in water literacy among professionals working in non-water sectors. Participants highlighted successful water literacy programs for professionals in all sectors (similar to carbon literacy initiatives) as a model for broader professional education.
- **Quality of integration:** Participants emphasised it's not just whether water is being considered in policy areas, but how these considerations are actioned and whether the tools used to develop and evaluate policy embed joined-up thinking.

Critical Insights

- **Policy pace vs. precaution:** Participants debated whether rapid policy development (driven by current government growth priorities) enables or hinders proper water consideration. While speed can limit comprehensive impact assessment, current urgency is also creating opportunities for cross-departmental collaboration that were previously absent. Water stress is very high on the agenda right now, and there is a window of opportunity for strong positive policy change. Timing is an important factor. Water-related policies developed during dry periods receive different attention than those developed during wet seasons.
- **Addressing inequalities in water demand:** There was recognition that water demand cannot be understood without considering how class, geographic location, and household circumstances shape water needs and options for using water differently. The discussion highlighted concerns about "hygiene poverty" emerging as people reduce water use due to energy costs, and the importance of recognizing how policy impacts vary across protected characteristics, including disability. There are links to employment and labour as both affect everyday routines and water-using practices. There is a need for political and class-based analysis of water demand patterns.
- **Complexity of defining essential water use:** What constitutes "essential" water use? Participants noted that households may reduce essential water use while maintaining practices they personally consider necessary for wellbeing (such as long showers). This highlights that water use decisions are not rational choices but reflect household priorities that vary significantly across different communities. Effective policy must engage with diverse understandings of necessity.

Next Steps

The team will be developing these findings into academic publications while continuing to engage with policy makers and practitioners. The discussion highlighted the urgent need for us to consider frameworks to assess cross-sectoral water impacts and mechanisms to embed water considerations in policy development across government departments.

The research team

This work builds on over a decade of collaborative research by [Dr Claire Hoolohan](#) and [Prof Alison Browne](#), who take a systemic, practice-oriented approach to understanding water demand. This research examines how policy and interventions can affect change in domestic water use by focusing on the competencies, meanings, and materials that shape how people use water in their daily lives². A practice-oriented approach looks beyond individual consumption to understand how processes and people outside the home shape patterns of water use³. This approach seeks to understand demand as a social dynamic, moving beyond behavioural economic approaches that overemphasise rational thought, price sensitivity, and awareness campaigns. Their practice-oriented approach follows and build on a substantial body of social science research that examines how everyday routines are shaped by shared expectations, social norms, and material infrastructures like appliances and systems⁴.

Through extensive collaboration with industry and policy partners, this research has produced practical tools like the Change Points Toolkit, which translates academic insights into actionable frameworks for social change⁵⁻⁶. Recent projects have increasingly highlighted the importance of distant policy agendas in shaping water demand. The COVID-19 pandemic revealed the multifaceted interactions between health policies and water use⁷, while the Climate Emergency has drawn attention to how water demand is implicated in adaptation (e.g. cooling) and mitigation (e.g. reducing hot water use) strategies⁸. The dramatic shifts in water demand following widespread working-from-home policies demonstrated how employment and economic changes directly impact water systems. Current research projects examine how everyday practices intersect with integrated water management in new build housing developments in the UK

(Enabling Water Smart Communities with [Dr Ella Foggitt](#)); and the role of novel methodologies in practice-oriented futures research on water (with [Leilai Immel-Parkinson](#)).

TriDeW emerges from these projects to explore the 'invisible' impacts of policy development for water demand, looking across multiple government departments and policy domains. This research investigates how developments throughout UK society are both increasing demand and creating new possibilities for joined-up policy to deliver demand reductions.

Related Projects and Further Reading

- **Enabling Water Smart Communities** (www.EWSC.org.uk): Exploring integrated water management in new housing developments
- **Change Points Toolkit** (www.ChangePoints.uk): Framework for designing interventions that unlock unsustainable practices
- **Water Practices Training Toolkit** (<https://waterpracticesanalyticaltoolkit.co.uk/>): Resources for understanding and analysing water use patterns
- **ESRC Centre for Climate Change and Social Transformation** (www.CAST.ac.uk): Interdisciplinary research on societal responses to climate change

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