Horizon Water Infrastructure

Future Water Association
Informing, Innovating, Influencing

HUBBELL

SEVERN TRENT

Leakage and Metering

07.07.26 – 08.07.26

Future Water Association

Introduction to Future Water Association

Paul Horton, CEO

Get more with membership

Future Water Association

Inform

Access to industry events & expert insights

Influence

Shape water policies

Innovate

Collaborate in specialist working groups

We're a community of members bringing the water sector together.

5 reasons to join

Future Water Association

Access to 50+ events

Network with decision-makers from across our members and the wider sector.

Strengthen your positon in water

Establish your brand as a key player in the UK water landscape.

Innovate

Use our Water Dragons competition to pitch your work to experts so they can take it further.

Meet with water companies

Get in front of the right people with our free in-person meetings.

Collaborate for change

Join our transformative working groups

"An incredible community to join, with informative sessions, strong networking, and a team that truly listens to the needs of the industry."

- Future Water Member

Upcoming Events

Future Water Association

www.futurewaterassociation.com/events

Future Water Awards & 40th Anniversary

24TH 09 2026

Thu 24th September

One Great George St, London

Members meet with

YorkshireWater

Thu 8th October

Head Office, Bradford

OT and Cyber Resilience Forum

Tues 20th October

Horiba Mira, Nuneaton

Networks November

Year in Water Review

& drinks reception

Tues 3rd November

Sec Newgate, London

Future Water Association

Future Water Report Card

Metering - Smart and Traditional

2023 Grade	2025/26 Grade	Status
C (Adequate)	C (Adequate)	Stationary

- Universal metering is a critical strategic enabler for the water sector.
- It transforms Per Capita Consumption (PCC) from a rough estimate into a precise metric.
- The smart metering programme is rapidly expanding, targeting 8.5 million meters installed by 2030.
- Large-scale smart meter deployment is fundamentally changing the industry's operational landscape.
- Smart metering shifts utilities from limited visibility to continuous, near real-time data.
- While improving data visibility and decision-making, this surge in data volume also risks overwhelming existing utility frameworks and operational processes.

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Future Water Report Card

What is Changing

- *The Transition to Real-Time Network Management*: The deployment replacing traditional meters with millions of smart devices provides continuous, hourly flow data across District Metered Areas (DMAs), allowing the sector to accurately isolate actual consumer night-use from underground network losses.

- *Exposing the Customer Leakage Crisis*: Reaching this multi-million-meter volume triggers an immediate "data tsunami". Continuous flow alerts instantly flag property-side issues that previously went undetected for months, exposing the massive, true scale of customer leakage.

- *Escalating Infrastructure Strain*: This rapid influx of automated data puts immediate, severe pressure on customer-service lines, field repair pathways, and digital processing capabilities.

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Future Water Report Card

The Evidence Base

- *Standards Fragmentation:* Data and interoperability standards are still not settled across the industry. Deploying millions of meters without uniform protocols risks creating massive regional friction and repeating the systemic failures of the early energy sector rollout.

- *Supply Chain and Skill Bottlenecks:* Reaching a scale of 8.5 million active meters by 2030 is severely constrained by tight workforce pipelines and component shortages. Projections indicate acute asset and installation field-skill deficits during the peak delivery years of the cycle.

- *Installation Quality Risks:* Governance on the ground remains highly variable, where internal meters are proving difficult to maintain and new-build connections frequently bypass standard specifications.

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Future Water Report Card

Why a ‘C’

Under the scoring framework, a C (70–76) indicates an *Adequate performance* that meets minimum expectations but suffers from fragmented action and mixed systemic readiness.

While the programmatic momentum toward 8.5 million meters by 2030 is robust, the grade remains locked at a C because the sector is accelerating into a high-volume rollout with too many unresolved, structural potholes - specifically regarding data interoperability, supply chain capacity, and property-side repair support.

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Future Water Report Card

Recommendations for Improvement

Enforce Common Data Standards: Lock in national meter interoperability protocols before the rollout reaches its 2030 volume.

Build the Repair Pathway: Establish an aligned, national policy for customer-side leakage to handle the incoming wave of smart-meter alerts.

Secure Multi-AMP Procurement: Move away from reactive procurement to insulate the 2030 delivery pipeline against material and field-skill shortages.

Future Water Association

Introduction from Future Water's Metering Group Chair

Tanya Dady, Horizon Water Infrastructure

Delivering long-term demand reductions – the insight needed to drive change

Meyrick Gough, WRSE Managing Director

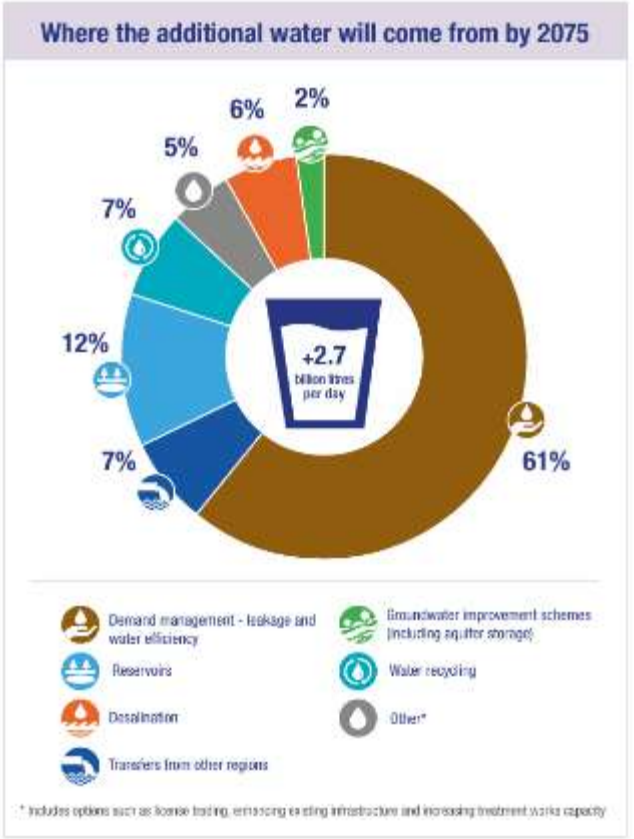
The scale of the challenge in the South East

Regionally, by 2075 we face a 2.7 billion litre per day water shortfall – this is more than half of the water currently supplied on an average day

More water is needed to:

- Improve the environment by leaving more water in rivers, streams and underground aquifers
- Supply a growing population (households and businesses)
- Make our water supplies more resilient to drought
- Counter the future impacts of climate change

Data from the current regional plan (reported pathway)

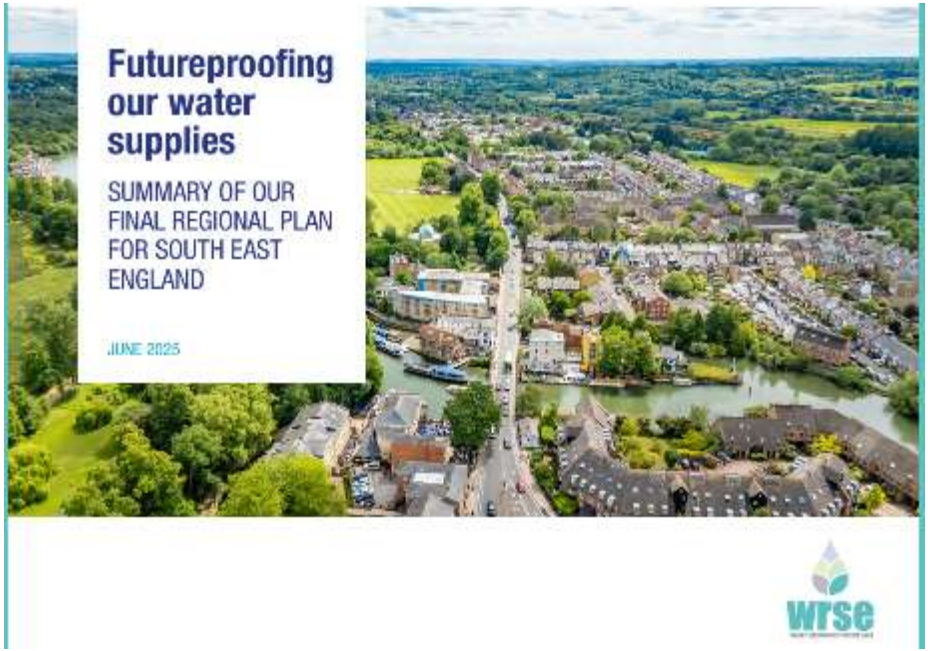


National targets embedded in plans

Defra National Water Targets

(The Environmental Targets (Water) (England) Regulations 2022. Environment Act 2022)

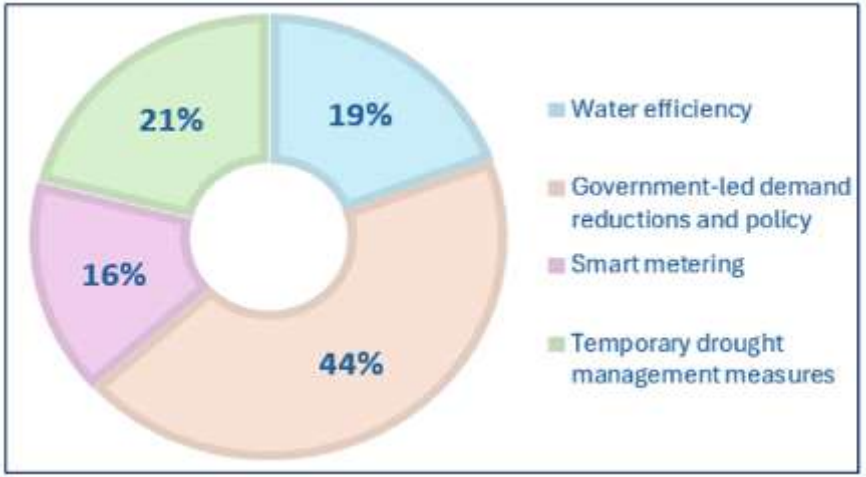
- overall 20% reduction in water into public supply by 2038
- the reduction of Per Capita Consumption (PCC) to 122 l/p/d by 2038 and 110l/p/d by 2050
- the reduced overall business consumption by 9% by 31 March 2038, and 15% by 2050
- the reduction of leakage by 37% by 2038 and 50% by 2050.



These targets are embedded into the regional plan and most WRMPs.

Challenge in the SE England

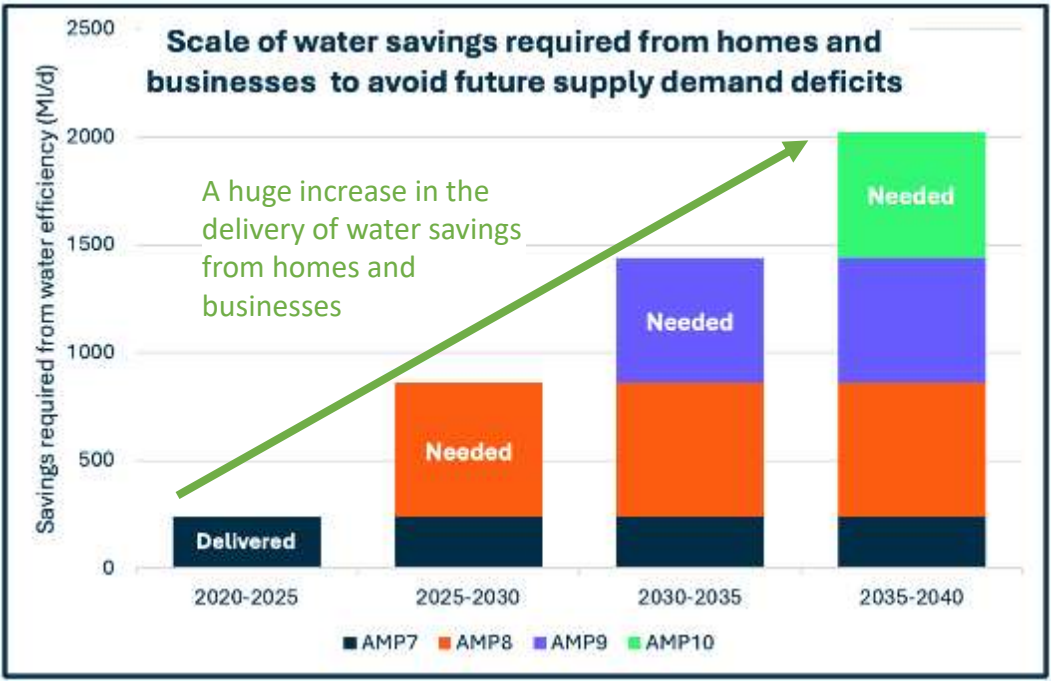
- Reducing demand is a critical part of building long term resilience
- Our plan requires **830Ml/d of water to be saved by 2035** – two thirds of the shortfall in the first 10 years
- Almost half the reduction in demand is dependent on new government policies:
  - Mandatory water labelling
  - Tighter building regulations
  - Minimum product standards
- Around a third will come from smart metering and water efficiency
- The rest from temporary restrictions during droughts (TUBs and NEUBs)



Contribution of demand management schemes in the South East of England by 2050

BUT….we are currently basing our plan on projections of savings with limited data and insight into what is influencing changes in consumption

Scale of water savings required across England



National Framework for Water Resources 2025

AMP8 will see the greatest variety of water savings measures applied in the UK

Successive AMPs will look to build on these savings through increased more targeted interventions

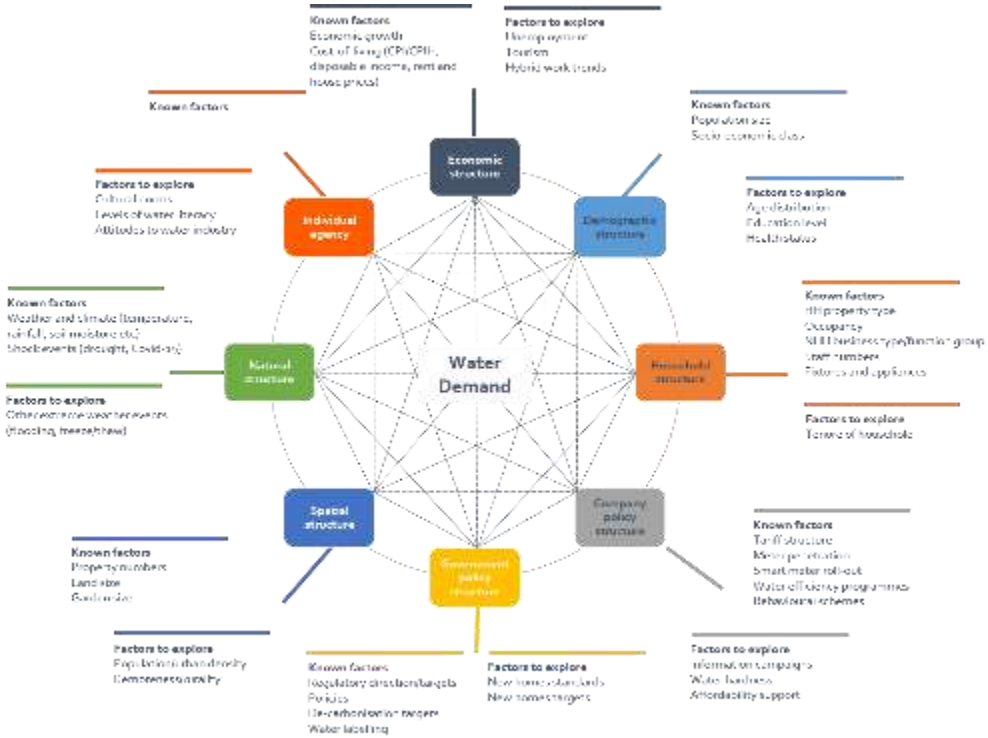
Without understanding what is effective or how different initiatives work with each other we face a real risk of not delivering the savings

We will need to use AMP8 to identify **what works well** and how water **savings can be sustained**

Understanding the impact of demand measures

With more water saving interventions than ever before being progressed we need to understand their impact and have confidence in their savings.

- ✓ Government Water labelling
- ✓ Water efficiency campaign
- ✓ Implementing tighter water efficiency standards in new developments
- ✓ Installation of smart meters
- ✓ Progressive tariffs
- ✓ Water audits and retrofitting existing homes with water saving devices
- ✓ Embedding water efficiency requirements in local plans and planning conditions
- ✓ Promoting water efficient design e.g. rainwater harvesting and grey water reuse
- ✓ Minimum product standards



Role of a Water Demand Observatory

Aim: to support the sector in assessing how events and actions affect water demand through an open-access portal that provides actionable insights for all stakeholders.

- From April to November 2025, companies examined the development of a proof of concept to test and assess whether a national Water Demand Observatory (WDO) could help the sector evaluate how events and activities influence water demand through an open-access portal designed to provide practical insights for all stakeholders.

- The WDO created an evaluation framework, used it consistently across 12 separate interventions, and completed an assessment for each one.

This enabled us to:

- Assess confidence in water savings from home and business retrofit programmes. In one home-visit example, PHC fell by a statistically significant 10% after the visit, rising to 17% one year later.
- Show where the sector could strengthen data collection and evaluation practices to improve confidence and statistical significance for water-demand reduction interventions.
- Evaluate how installing smart meters affects both behavioural and continuous patterns of water use.
- Demonstrate that smart metering reduces peak demand more effectively than basic metering.

Objectives of the Water Evaluation Framework

1 Provide companies with best practice and a consistent approach to evaluation

The framework is intended to provide **best practice for consistent intervention design, delivery and evaluation**. This includes:

- Clear processes to provide clarity on the outcomes, inputs and causal mechanisms needed to achieve these
- A consistent set of metrics and data for evaluation
- A set of robust methodologies for evaluating impacts.

This recognises the need for **flexibility** to varying needs and contexts, while being simple and practical to use.

2 Develop a high-level but comprehensive evaluation framework

The framework captures **key elements** for robust evaluation.

It has been built in an **adaptable** way to:

- Allow for ongoing development as a 'living methodology'
- Ensure it supports **options appraisal** for a wide range of possible water demand interventions
- Allow users to apply the framework and carry out evaluations to a level of rigour that is **proportionate** for the context of a given intervention

It needs to continue to evolve to align with and complement methods used in companies' water resources planning and demand strategies.

3 Embed water efficiency evaluation best practice across the sector

Further development of the framework will need to consider how the framework is adopted across the industry. This includes:

- Determining the extent to which the framework is included in regulatory and/or government guidance and reporting requirements
- Understanding and addressing any challenges faced (both financially and practically) in adopting the framework at a company level.

4 Complement the demand tracker and the data and modelling required for this

We have developed the framework in a way that supports and complements the use of the demand tracker.

The framework has been applied as part of the intervention analysis to test its practical applicability and ensure it is fit-for-purpose.

This transparency of methods will develop **confidence** in the evaluations applied, build **trust** between companies, government and regulators in evaluations so that the sector can **learn and build** on each others' experiences and **embed best practice** for evaluation within their organisations.

The framework consist of three core components…

1. Process evaluation

- Set out how interventions are designed, implemented and operated
- Understand how interventions are delivered and what factors help or hinder their effectiveness
- Complement the impact evaluation and allow for evidence and learnings to be applied in developing and delivering future interventions

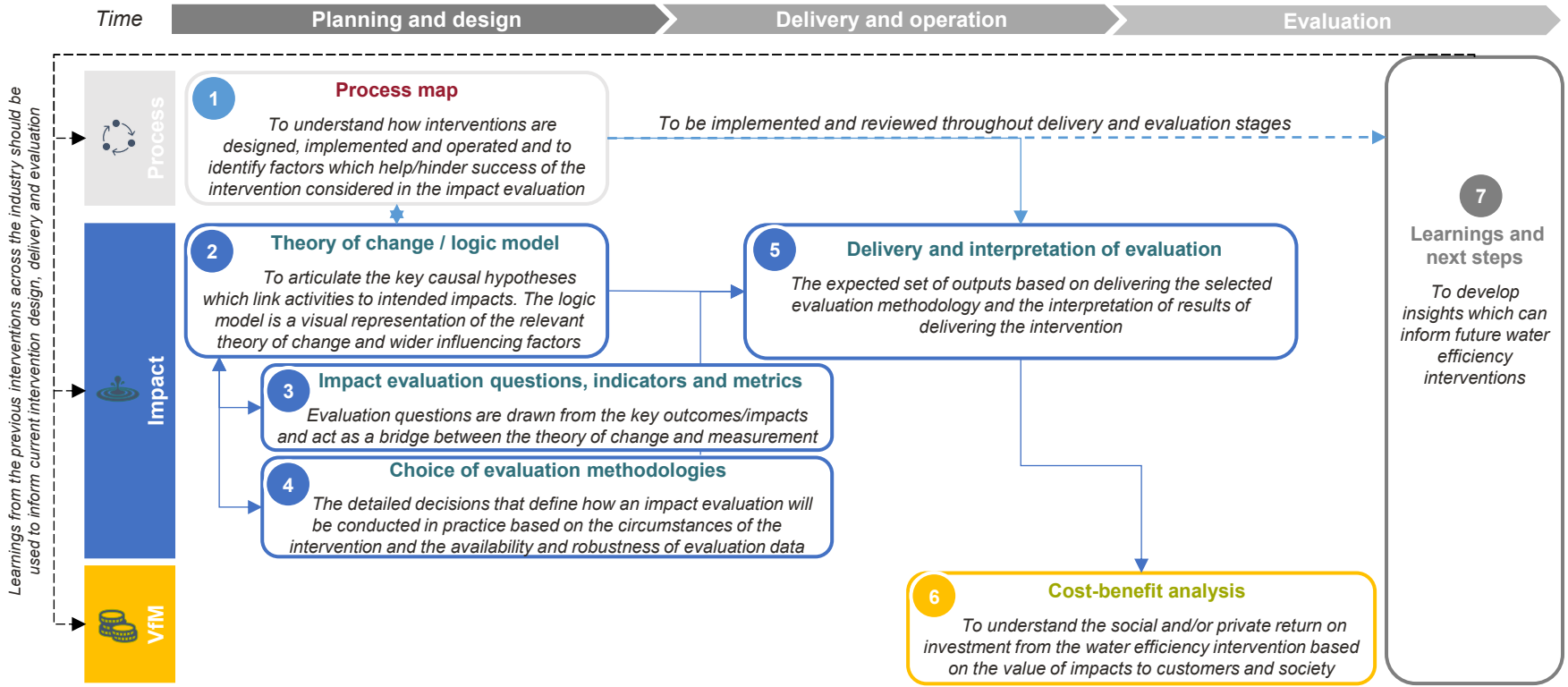
2. Impact evaluation

- Assess and develop robust evidence to identify and measure the outcomes achieved by delivering specific interventions
- This is defined and articulated using theories of change and aligned with Magenta Book guidance

3. Value for Money (VfM)

- Consider the evidence on:
  - the extent to which the intervention was able to meet strategic objectives; and
  - whether the social value generated exceeds the costs of delivering the intervention

… with seven building blocks across each component



Testing the framework against real-world variation

The scope of testing covered 12 real interventions, all assessed using a single, unmodified framework.

Variation in data

Data granularity
- Hourly smart meter data to daily, monthly or 6 monthly readings.

Sample sizes
- Small pilots (~50 properties) to large scale programmes (tens of thousands of properties).

Time coverage
- Post intervention data only, pre- and post- intervention
- Coverage from months to multiple years.

Variation in design and context

Control groups
- Some interventions included control groups; others did not.
- Framework remained applicable in both cases.

Intervention and customer information
- Range from rich, detailed records to sparse contextual data.
- Variable availability of customer and property characteristics.

Testing the framework across this level of real-world heterogeneity was deliberate. It reflects the reality companies operate in and allowed us to understand where the framework is robust, adaptable, and where additional care or supporting information is most valuable.

What data underpinned the Proof of Concept?

The PoC focused on datasets that are already available and sufficiently consistent to demonstrate value.

Demand drivers

- External datasets capturing aspects such as weather, seasonality, economic and other contextual indicators.

Demand data

- **Distribution Input (DI):**
  - Widely available and comparable across companies,
  - Enabling system-level analysis using existing data,
  - Provides a strong foundation for linking demand to drivers.
- **Smart meter data**
  - Data from 2 companies included,
  - Establishes foundations for scaling analysis as rollout increases.

Data type	Dataset	Thematic group	Source
Demand data	DI		Water Company
	Smart meter data		
Demand drivers / intervention	Population	Demographic	Water Company
	Properties	Spatial	
	Meter penetration and smart meter	Company policy	
	Weather	Natural	Met Office
	RUC	Natural	ONS
	CPI	Economic	ONS
	2021 Census data	Demographic	ONS
	Oxford indicators (COVID)	Natural / Economic	University Oxford
	TUBs / interventions	Company policy	Internal data and water company websites / Water companies

Overall, this data strategy allowed us to demonstrate immediate value using existing data, while laying the foundations for deeper, more targeted insight as data availability improves over time

Applying the framework in practice

1) Evaluation inputs

Q1: Do beneficiaries display a significant reduction in water consumption over the next 3 months after the visit?

Indicators

Average reduction in ADC

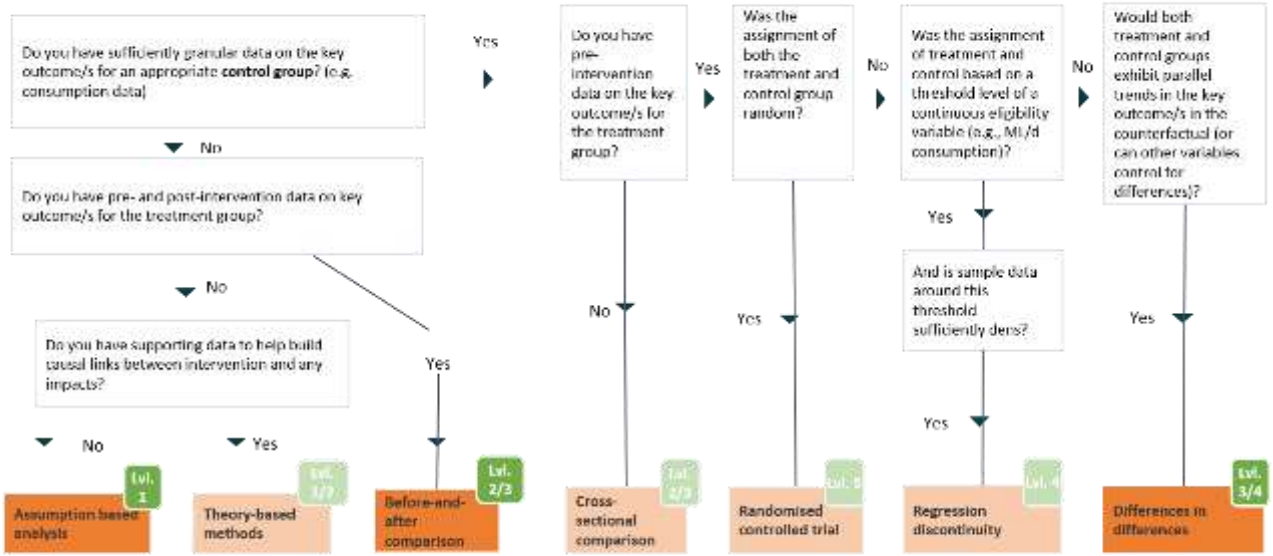
Metrics

ADC pre and post intervention

Data

Monthly reads at property level
Intervention date before and after the interventions
No control group.

2) Evaluation method



HH retrofits	2		1				2
NHH audits	2		2				1

Explaining network behaviour

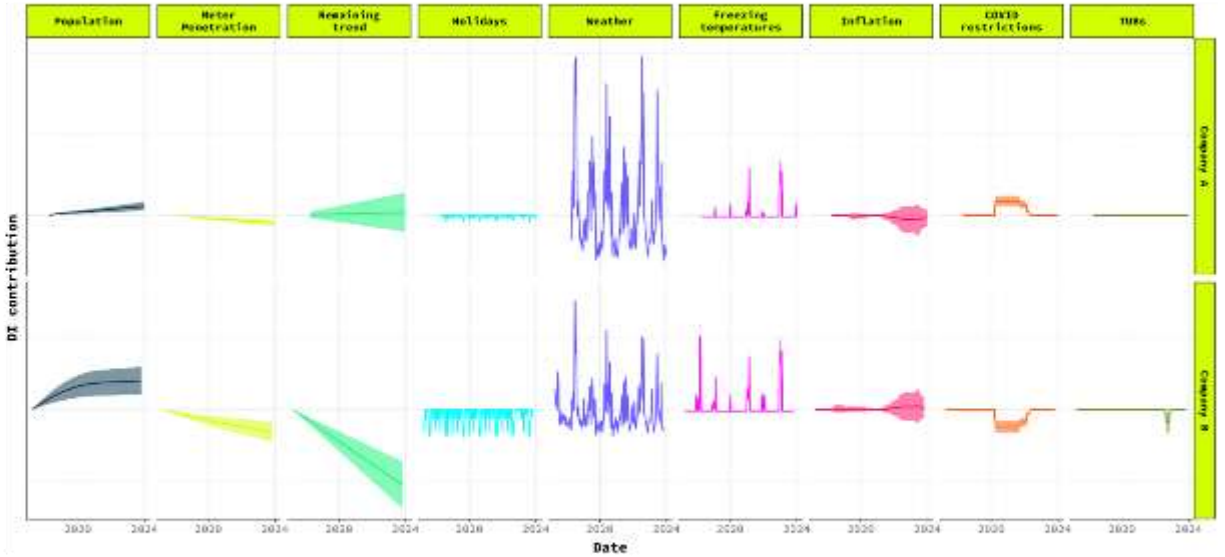
With a network view of demand, we can then link observed changes to potential demand drivers such as weather, seasonality, and wider societal or economic influences

This can provide insights into:

- Compares how the same drivers behave across regions
- Distinguishes network-wide patterns from local anomalies
- Strengthens confidence in attribution
- Provides visibility of uncertainty in the outputs

Plot illustrates

- Differences in long-term demand trends
- Variation in seasonal responses
- Different responses to short term or unexpected events
- Range and uncertainty around estimated effects



Why this matters:

- Reduces reliance on lengthily and costly retrospective investigations (e.g. dry years)
- Enables earlier, clearer insights via dashboards
- Supports more confident targeting of interventions and planning decisions

Water efficiency in the context of network behaviour

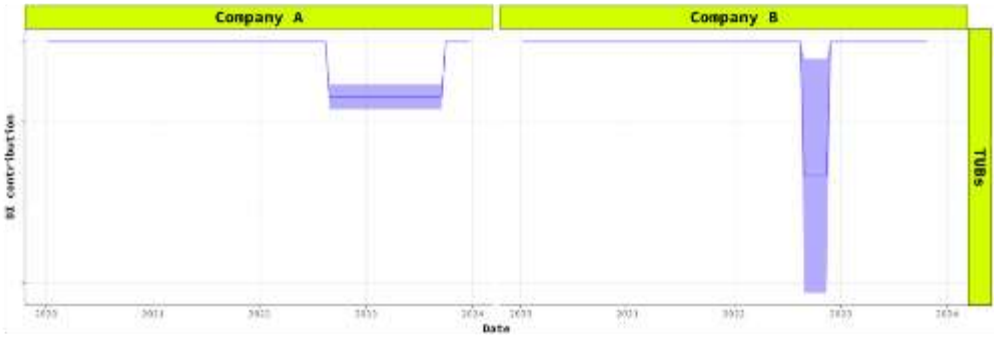
The same network-wide approach used to explain demand behaviour can also incorporate intervention information.

Network-wide, granular analysis provides stronger assurance that interventions are achieving their intended objectives.

Improves confidence in estimated water savings; Supports better targeting design and scaling; Strengthens evidence for planning decisions

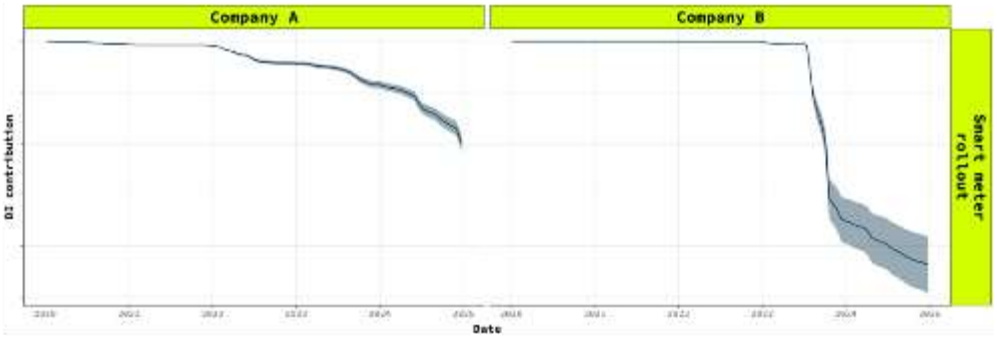
Short term example: Temporary Use Bans

- Isolates short-term intervention effects
- Assesses:
  - Magnitude of impact and uncertainty
  - Speed of response
  - Regional variation
- Supports decisions on when and where TUBs are most effective



Long term example: Smart metering

- Identifies timing of impact
- Assess persistence of savings
- Differences across regions



What testing the framework has shown

Testing the framework against real interventions has shown that it works in practice. Not in idealised conditions, but in the reality, companies operate in today.

Practical use

The decision tree provides a clear, accessible way to select appropriate evaluation methods

Supports consistent application across interventions and companies

Does not replace expertise , instead:

- Provides structure and guidance
- Makes expert judgement explicit, transparent, and repeatable

What repeated application has revealed

Common data and information gaps surfaced across interventions:

- Inconsistent recording of intervention design and context
- Limited documentation in targeting and delivery
- Challenges linking intervention records, to consumption data and customer characteristics (systems inconsistencies)

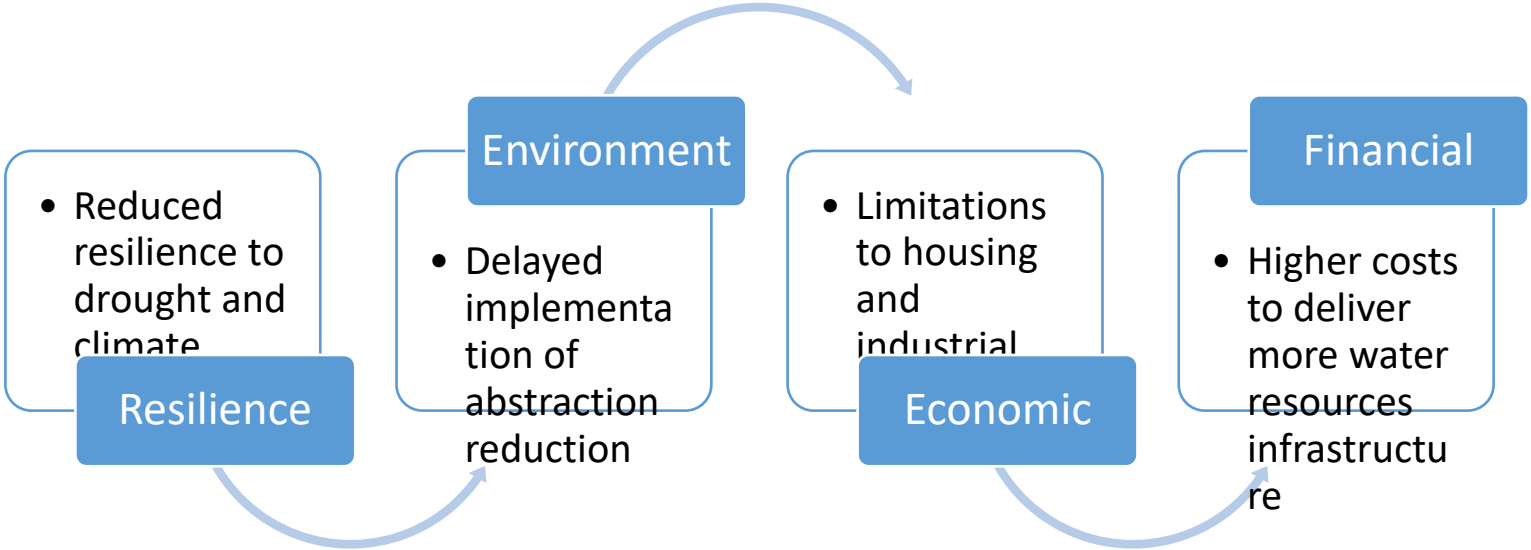
Framework performance

Successfully accommodated:

- HH retrofits
- NHH audits
- Wide variation in data availability, granularity and context

The WEEF gives companies the confidence to invest in what works, adapt what doesn't, and plan future interventions on the basis of evidence rather than assumption

The risk of under delivery



What happens if we get it wrong?

"Missing per capita consumption target by just 1 litre per person, per day in the South East of England would require the development of a reservoir the size of Havant Thicket to ensure sufficient future resources."

Future Water: Leakage & Metering

Smart Meter Data: What's Next?

Andrew Tucker

Demand Reduction Strategy Manager, Thames Water

Smart Meter Data: What's Next?

a) What are the biggest headlines?

b) How is smart meter data already changing operations, customer engagement and regulatory thinking?

c) Where's the untapped potential?

d) What needs to change to unlock the full value of smart meter data?

Customer Demand - Policy & Regulation targets & drivers

Lots happening …but it'snot enough

Defra National Water Targets (The Environmental Targets (Water) (England) Regula…ent

- overall **20% reduction in water into public supply by 2038**
  - the reduction of **Per Capita Consumption** (PCC) to 122 l/p/d by 2038 and 11…
  - the reduced overall **business consumption** by 9% by 31 March 2038, and 15…
  - the reduction of leakage by l**eakage** by 37% by 2038 and 50% by 2050.

No awareness across public or business sectors

But, entire demand reduction agenda is reliant on full smart metering

Water Companies – AMP8 2025-30 (Ofwat, 2023)

- **Per Capita Consumption (PCC)** ….deliver a minimum reduction of PCC level of 110 l/h/d by 2050
- **Business Demand** …….percentage (%) reduction of three year average business demand in Ml/d fr… baseline.
- **Leakage**……deliver a minimum reduction of 50% in leakage by 2050

PCC & Business Demand are completely wrong targets for water companies

Government policies, codes & initiatives (Environmental Targets (Water) (England) Regulations 2022. Environment Act 2022)

- Mandatory water label - 2025 introduction
- Building Regulations – upcoming Part G consultation
- Water Neutrality
- Retailer-Wholesaler Group: Metering and Water Efficiency Sub-Groups

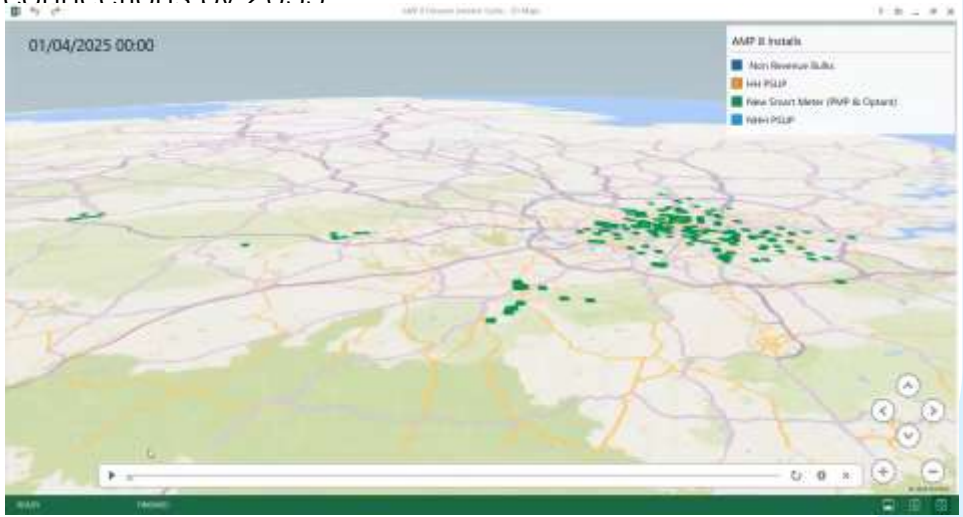
Delayed Delayed

Doing good stuff

Thames Water smart meter rollout

Overview

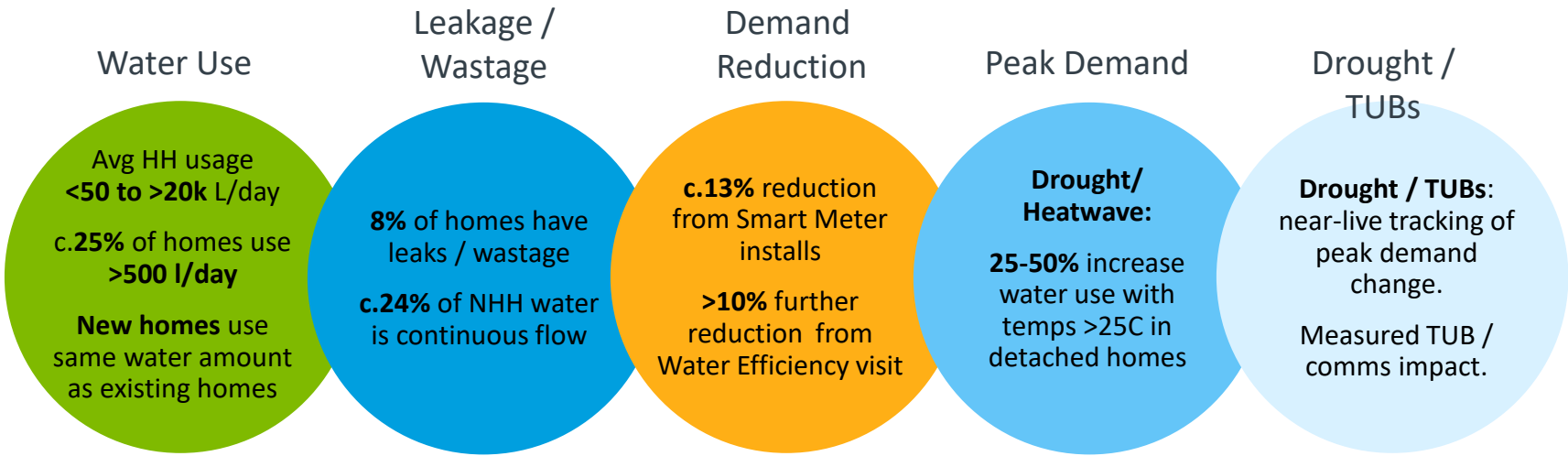
- Installation programme started in 2015
- Meters = Sensus and Honeywell. Comms = Arqiva Flexnet and Vodafone NBIoT
- >1.4m smart meters installed to date
- c1.1m smart meter installations planned for AMP8
- All business properties by 2030. All HH and NHH connections by 2035



What are the biggest headlines?

Smart Meter data insight - Headlines & Benefits

Smart meter data analysis helps better understand water use, water loss and impacts of external factors

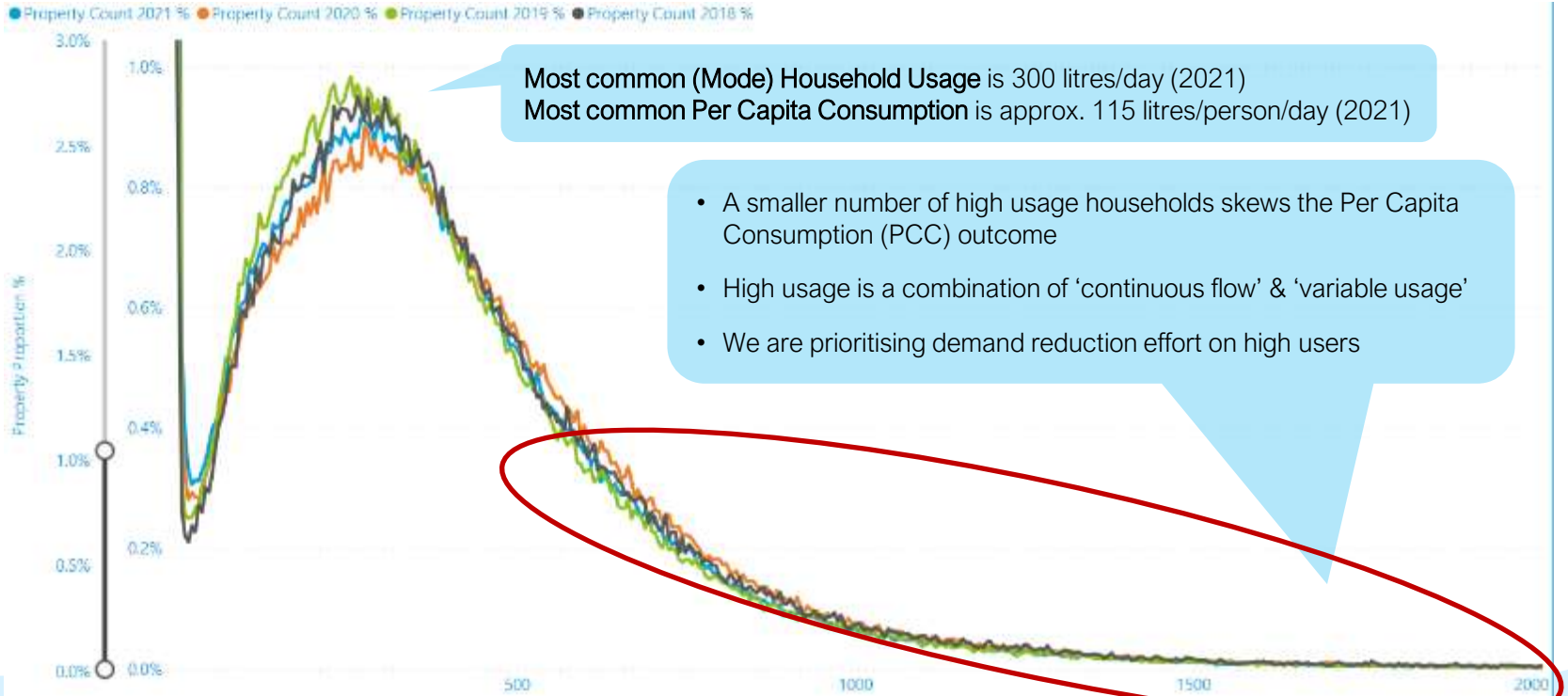


How is smart meter data already changing operations, customer engagement and regulatory thinking?

Data and Insight - Household water use

Hourly data from smart meters enables innovative analysis and demand reduction action

- **The average person DOES NOT use the average Per Capita Consumption value**
- A smaller proportion of high usage households skew the average household use and Per Capita Consumption values

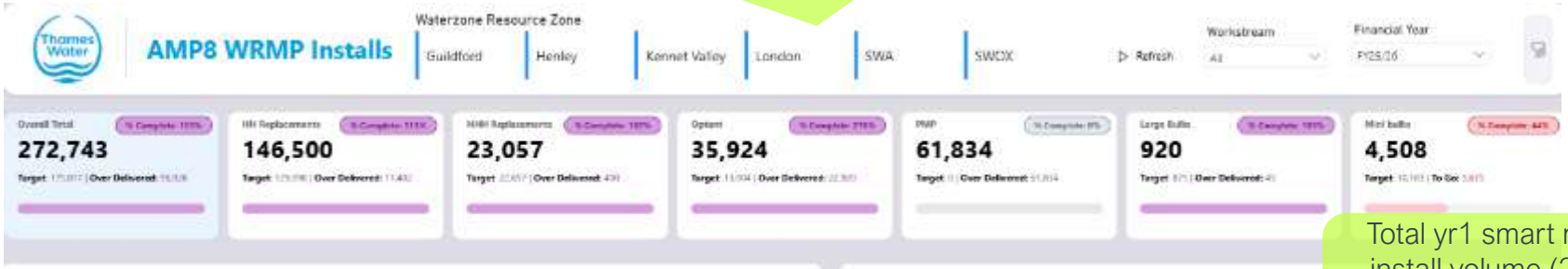


Most common (Mode) Household Usage is 300 litres/day (2021)
Most common Per Capita Consumption is approx. 115 litres/person/day (2021)

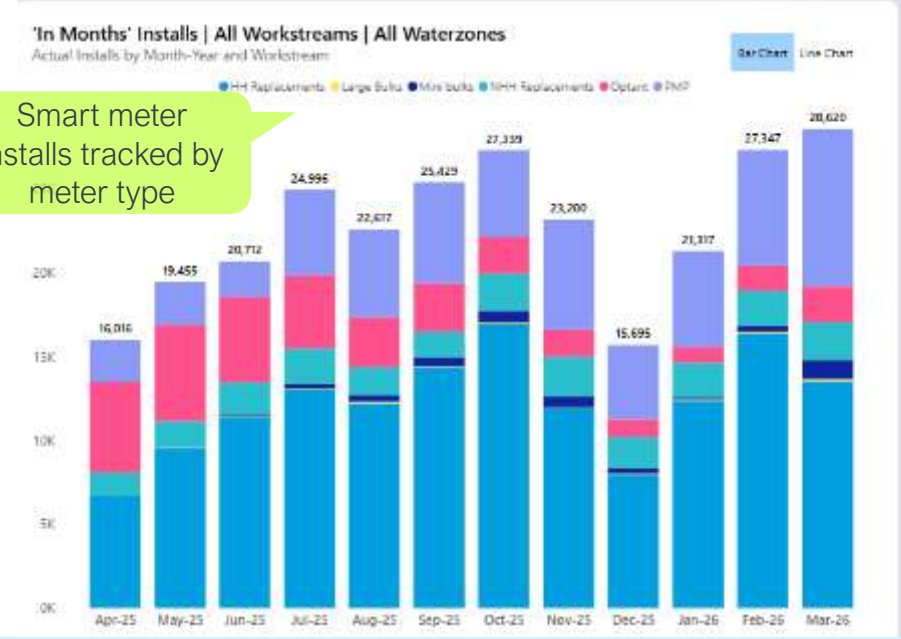
- A smaller number of high usage households skews the Per Capita Consumption (PCC) outcome
- High usage is a combination of 'continuous flow' & 'variable usage'
- We are prioritising demand reduction effort on high users

Smart Metering

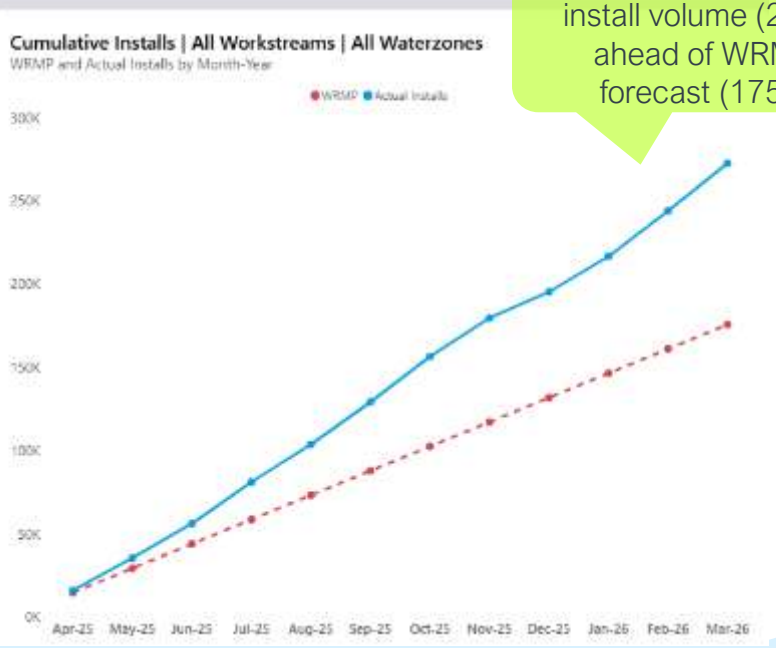
Smart meter installs now being tracked by WRZ, against WRMP forecast



Smart meter installs tracked by meter type



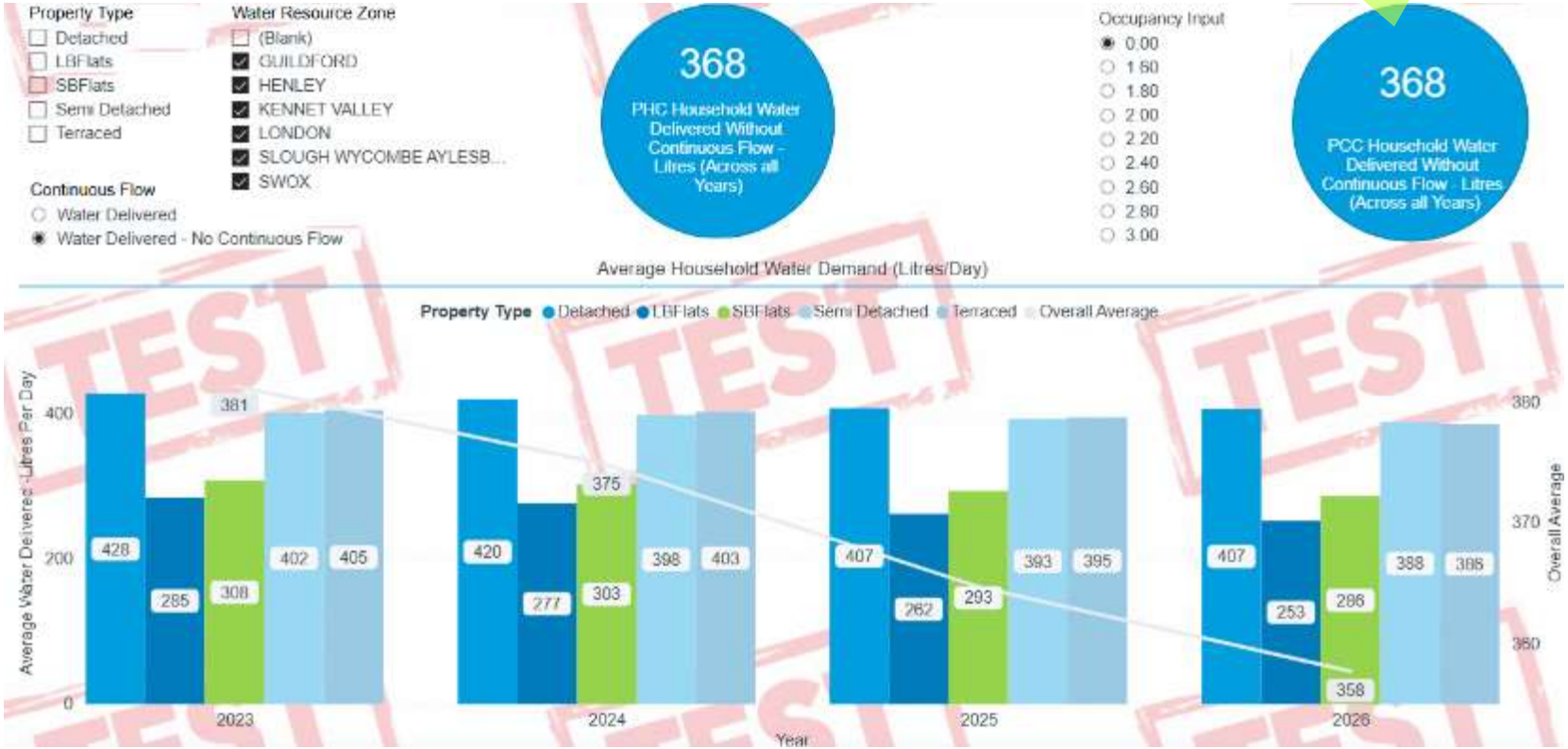
Total yr1 smart meter install volume (272k) ahead of WRMP forecast (175k)



Household - Smart Meter data insight: usage + continuous flow

Household - Smart Meter data insight: **usage only**

Continuous Flow represents c.30 litres/prop/day

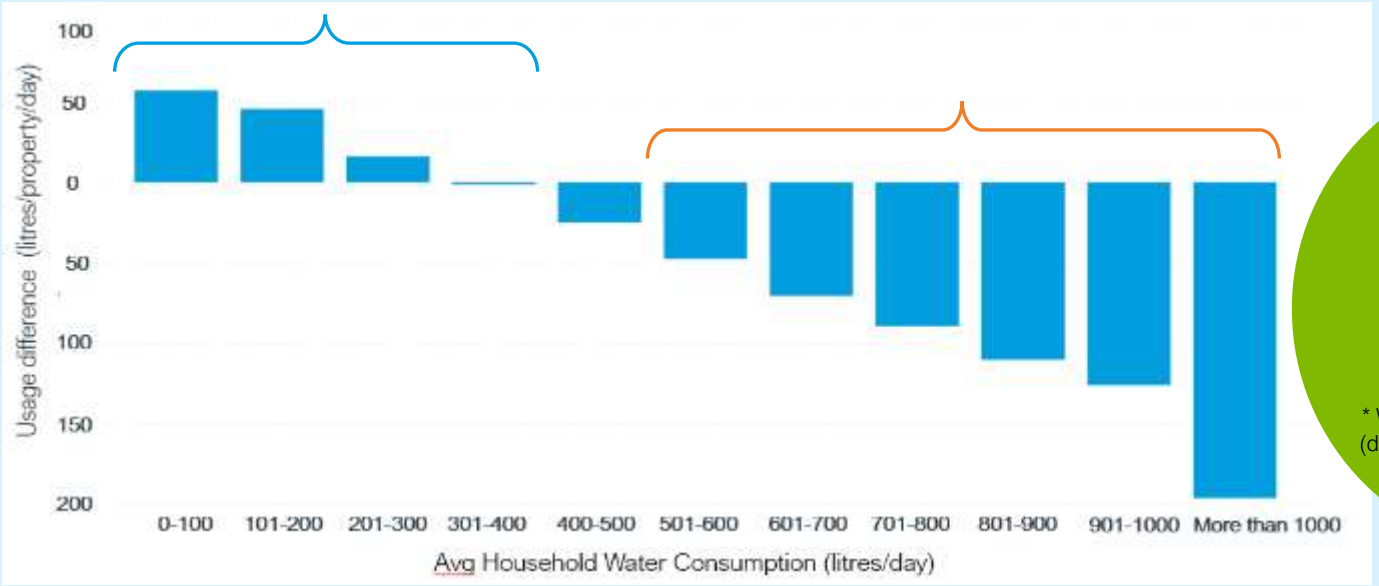


Household - Water Efficiency visits

Using smart meter data to focus all SHVs on high-usage homes (>500 litres/day)

- Households that use less than 400 l/prop/day are not showing measurable water use reductions

- Water efficiency visits are cost beneficial on households that use greater than average of 500 l/prop/day



In-home water efficiency visits reduce household usage by

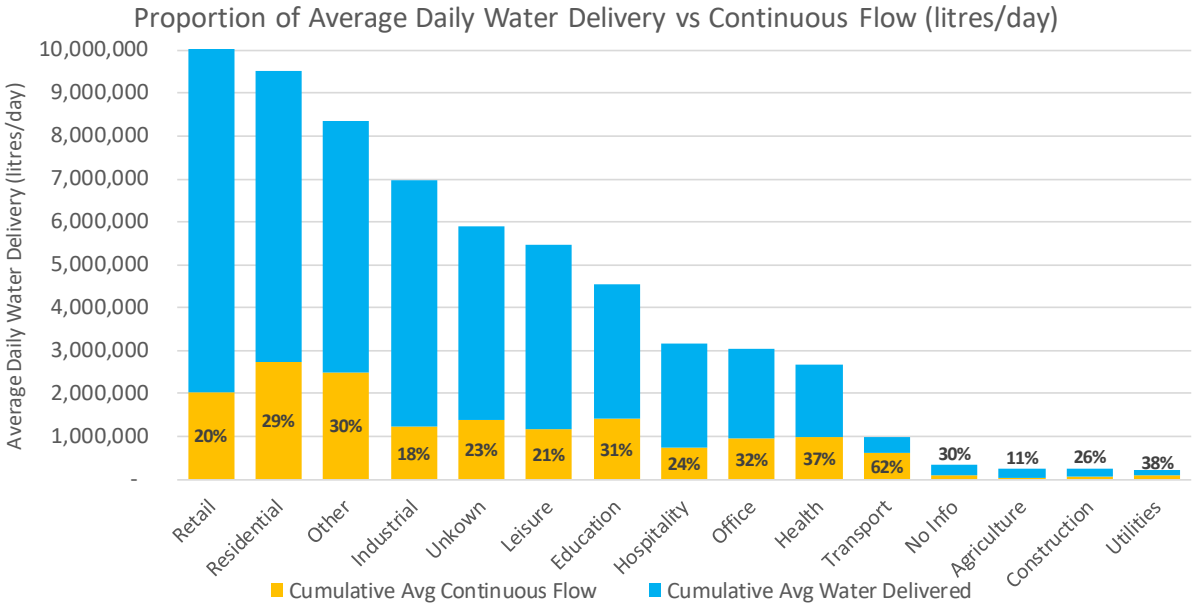
>10%*

* When in-home water efficiency visits (device retrofit and behaviour change) are delivered on high-usage households >500 litres/day

Non-Household: Continuous Flow measured by smart meters

What is 'Continuous Flow'? Water flow above 1 litre/hour being measured for at least 14 days in the row. This is water beyond the meter, on the customer side.

Continuous Flow could be genuine water usage, customer-side leakage and / or internal wastage



Emerging data and insight from smart meters:
Based on >37k non-household AMI smart meters

Current smart meter data is showing that approx. c.**24%** of the total water delivered to NHH sites is showing as 'continuous flow'

Every business should do a simple water audit

Fix your leaky-loos and uncontrolled urinals!!!

2025: Impact of Temporary Use Ban and Comms

Usage **did not** spike in heatwave, due to TUB in place

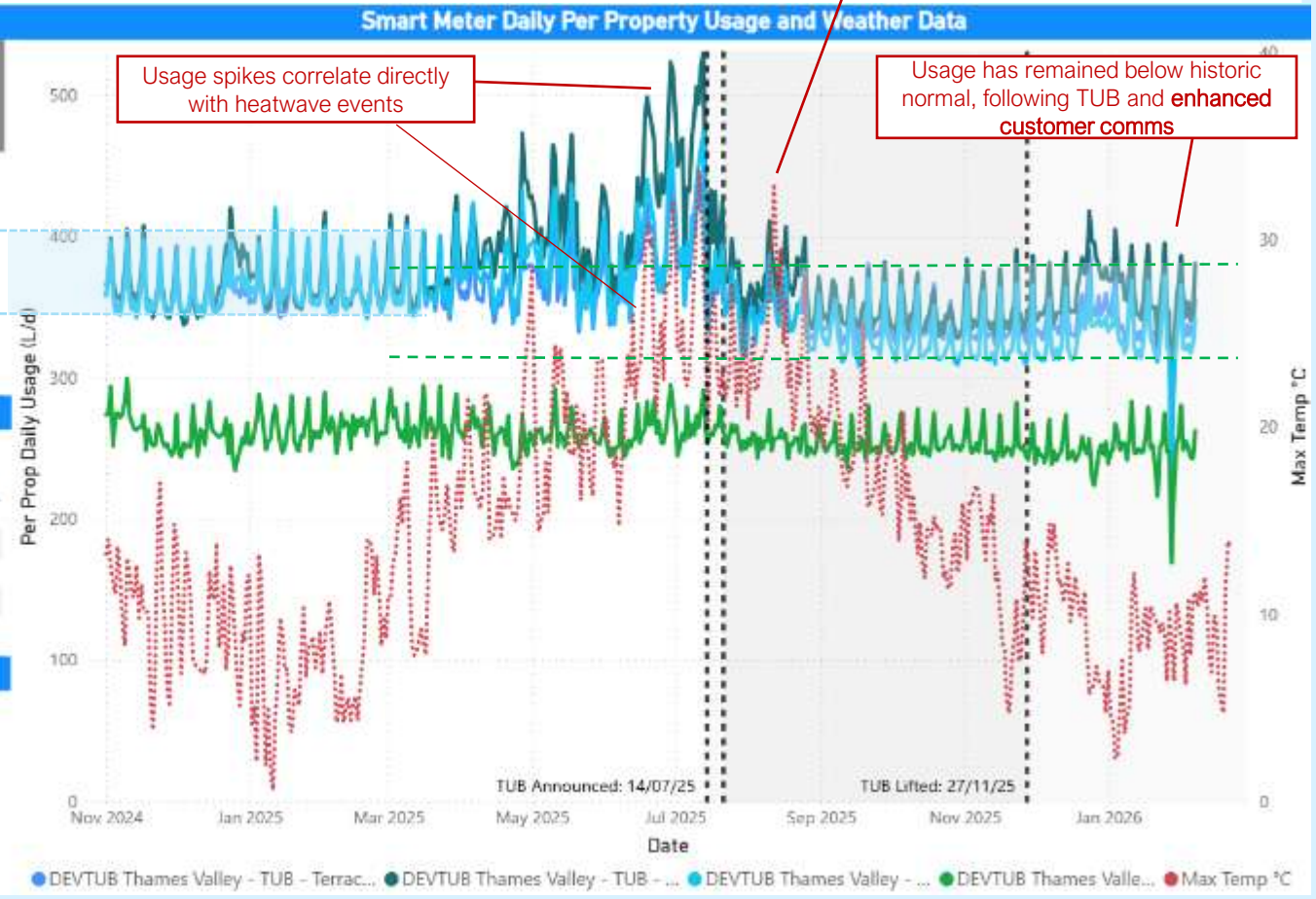
Chart Property Type Selector

- Detached
  - DEVTUB London - Detached
  - DEVTUB Thames Valley - Non TUB - Detached
  - DEVTUB Thames Valley - TUB - Detached
  - London - Detached
  - Thames Valley - Non TUB - Detached
  - Thames Valley - TUB - Detached
- Flats (Large and Small Combined)
  - DEVTUB London - Flats

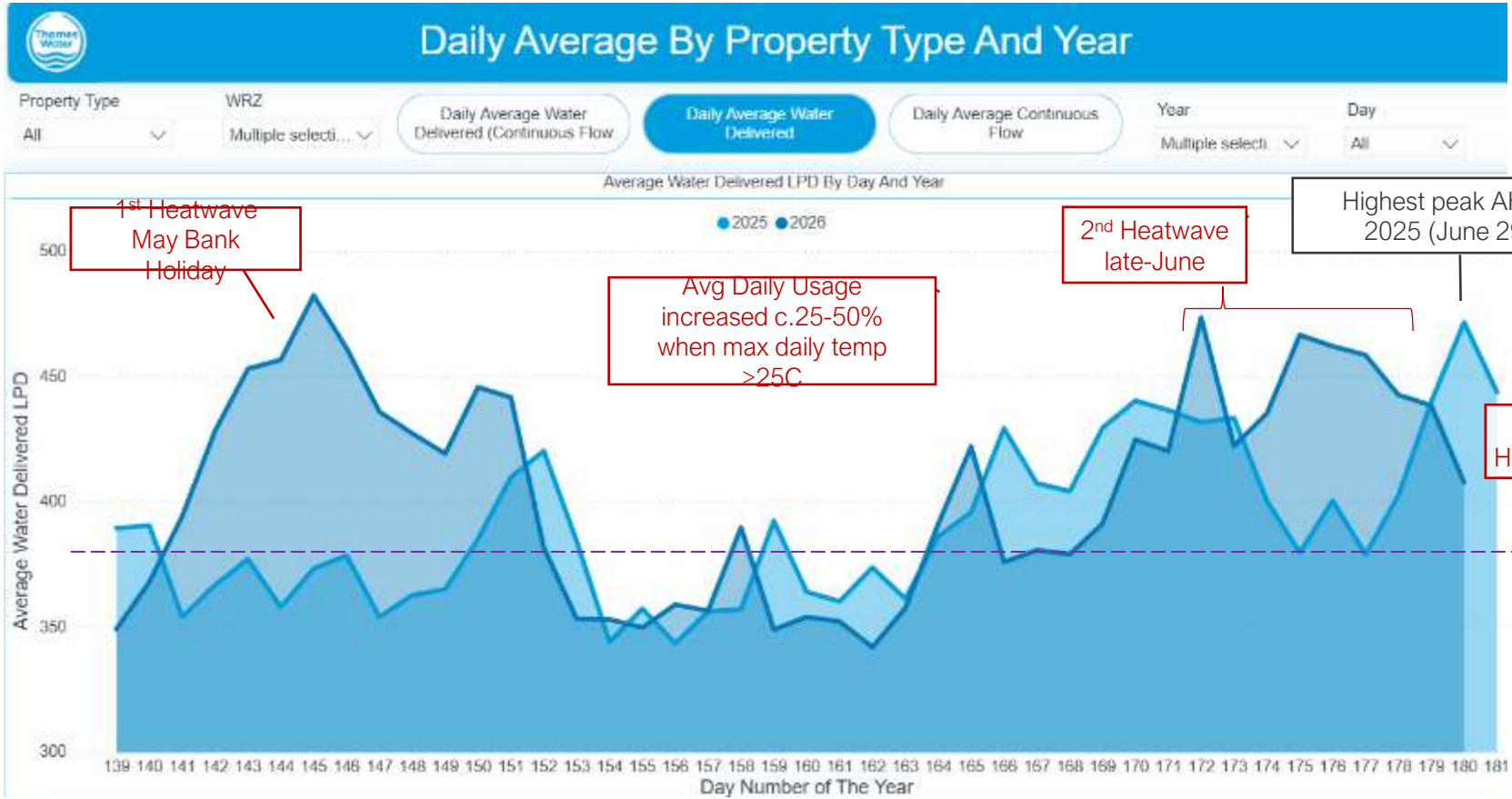
Smart Meters Used for Per Prop Calculation

Zonal TUB Status	False		True
Prop Type	London	Thames Valley	Thames Valley
Terraced	428939	5256	11212
Semi Detached	200258	5654	6946
Flat	283319	3171	1721
Detached	60019	3237	2717
Total	**972535**	**17318**	**22596**

Chart Weather Variable	Weather Station
◉ Max Temp °C	○ Central London
○ Min Temp °C	○ Heathrow
○ Precipitation mm	○ Locksbottom
○ Sunshine hours	◉ Oxford
○ Blank	

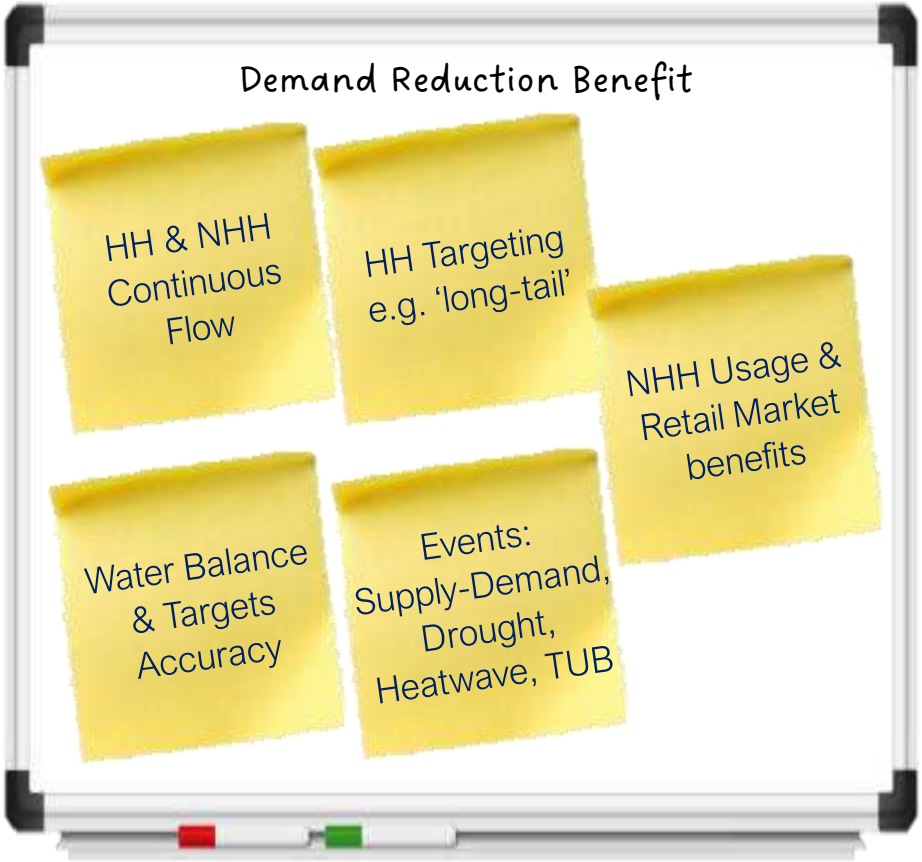


2026: Impact of Heatwaves on Household Consumption



Where's the untapped potential?

Where's the untapped potential?



Future: Areas of focus

Continuous Flow

- **Greatest and easiest opportunity** for customer demand reduction
- **Policy**, regulation and delivery should change to **prioritise and help CF identification and fix**

Tariffs & Customer Engagement

- Consumption data will become **the enabler** for;
  - **Innovative tariffs** and price levers to drive demand reduction
  - **regular and tailored direct comms** (emails / texts) to nudge long-term behaviour change

Non-Household insight and Retailer collaboration

- **Entire UK business sector is unaware of Govt national water target!**
- Business sector will only become more efficient via **access to smart meter data**
- **Current WRMP / ODIs and Retail market codes are not aligned**

Water Efficiency Fund & Special Projects

- Water Efficiency Fund (WEC & WEL) **provides ring-fenced funds**
- Likely that majority of future WEL and Innovation projects will be **reliant on smart meter data**
- **Huge opportunity and huge burden.** Not joined up yet.

WRMP29 & PR29

- Yes, **WRMP29 has started already**!
- In the absence of Govt smart meter policy / targets, **can WRMP guidance and PR29 regulation actually help smart meter rollouts and data utilisation**, not burden or penalise it ?

What needs to change to unlock the full value of smart meter data?

Things needing attention

Policy, Regulation and Non-Household

Policy

- **Lack of policy support on smart metering delivery**: Difficultly to enforce 'compulsory' install / access HH / NHH properties
- **NAVs**: Not our smart meter? No access to usage / CF data? NAVs are black hole for water resources and efficiency?
- **Lack of Policy-Regulator-Company group for UK smart metering**: there is a Smart Meter Strategy Group (Water UK) & Smart Meter Delivery Group (govt & regulator only), but the sector lacks a single group / platform where all water companies, policy makers and regulators can meet and discuss progress and issues

Regulation

- **FD cost assessment approach for smart metering**: Econometric modelling and benchmarking is not fit for purpose for smart metering programmes. PLEASE fix this for PR29 !!
- **Performance Commitments**: PCC & Business Demand PC metrics don't actually measure water company performance
- **ODI Conflict**: C-MeX (complaints), BR-MeX disincentivise proactive and large-scale customer engagement
- **Price Control Deliverables (PCD)**: PCD were developed & introduced quickly and late into PR24. PCD focuses on installations and connectivity achieved. All parties need to test and evolve PCD methodology through AMP8.

Non-Household

- **Business Demand Reduction in WRMP and ODI**: demand reduction responsibility and liability sits with wholesalers. MOSL meter data hub and continuous flow guidance are positives. But lots of challenges getting action and reporting
- **Demand Reduction target at odds with Govt growth agenda**: Smart meter data becomes critical
- **ODI and penalties preventing progress**: PCD Vs BR-MeX

Things needing attention

Policy, Regulation and Non-Household

Policy

- Lack of policy supp… …ory: Difficultly to enforce 'compulsory' install / access HH / NHH properties
- N… …iency?
- … …K) &

Regulation

- … …for
- … …nance
- …
- …

Non-Household

- … …ting
- …
- C…

The national water target agenda (leakage, household and business) is entirely reliant on smart meters on every house and every business.

In the absence of national smart metering policy, wholesalers still need to make the business case through a very complex regulatory process, which uses a flawed econometric modelling and assessment approach, to do the meter installation and benefits realisation work - which is fundamentally essential for a national target agenda.

…but deviation from forecast, results in financial penalties.

Request: could the changes to future policy and regulatory structures, please make this better?

Thank You

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Break

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Market and Retailer Alignment Session

Steve Formoy, Finance Director, MOSL

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Reaching the Unreachable – How can we connect rural areas

- Alex Barter, Managing Director, Barter for Things
- Vadim Lyu, Managing Director UK and Global Practice Lead, Water Utilities, Netmore

Future Water Association
Informing, Innovating, Influencing

Price vs Value

Realising Viable Rural Connections

B4T

Alex Barter July 2026

Rural Connectivity Economics are Different

Kicking the can down that (country) road

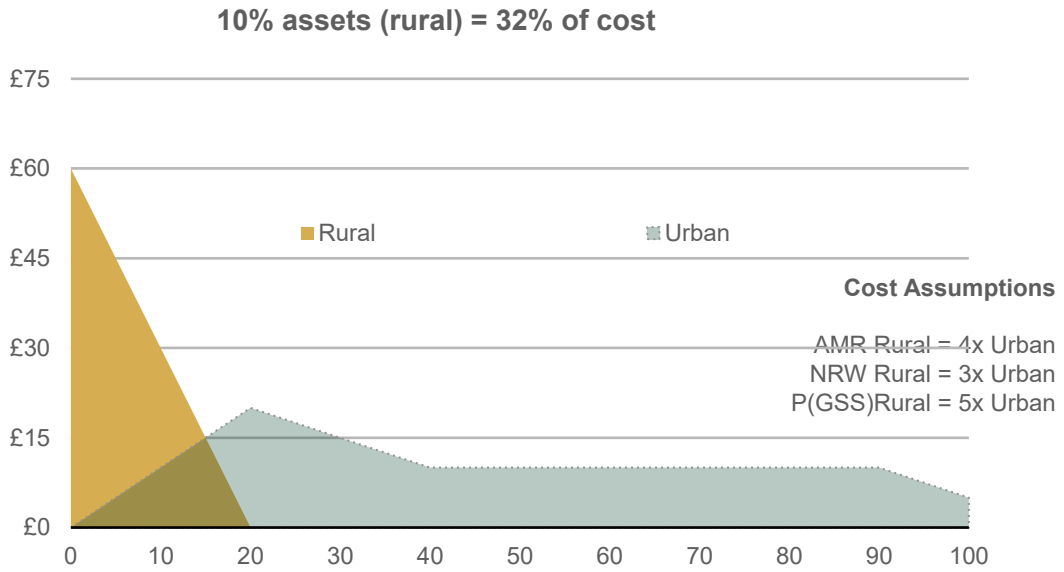
Stranded Assets become Liabilities

Avoid “price of everything, value of nothing”

AMI investment

3x

value for rural vs urban



Terms of reference: Arqiva, Frontier Economics, Artesia 2021; Commercial-in-Confidence [aggregated] ; Severn Trent, UU, Southern Water AMP8 Business Plans & Reports;

Technical Measurement

An audio analogy

dB-eh?

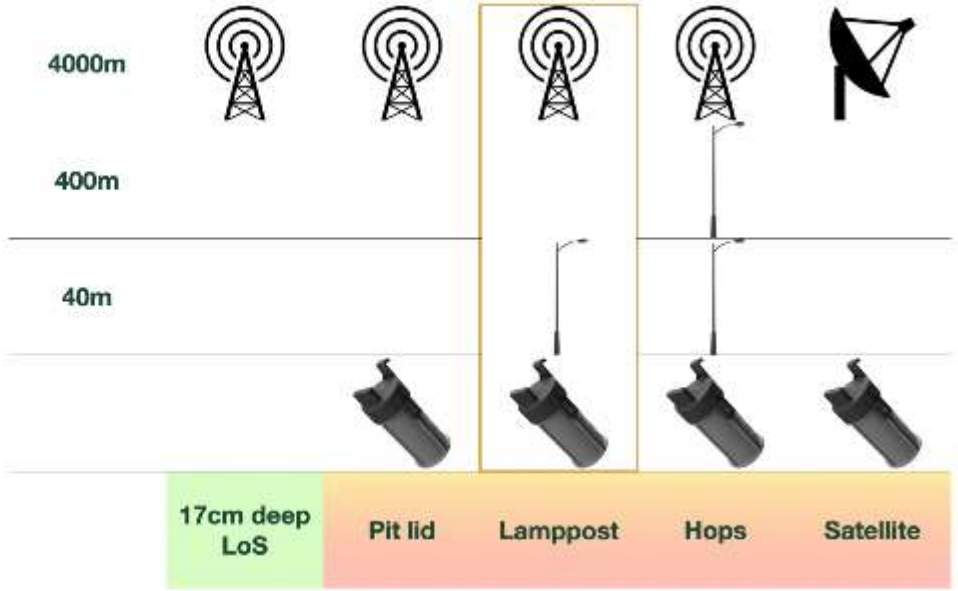
Sound			Radio		
140	Jet		-10	Injury	
130	Pain		-50	Component override	
110	Gig		-70	LoS	
80	Traffic		-90	17cm pit	
60	Conversation		-110	Pit lid	
30	Whisper		-120	Lamppost	
0dBA	Theshold		-140dBm	Theshold	

Standard Solution

Process up to 8 meters on Bridge

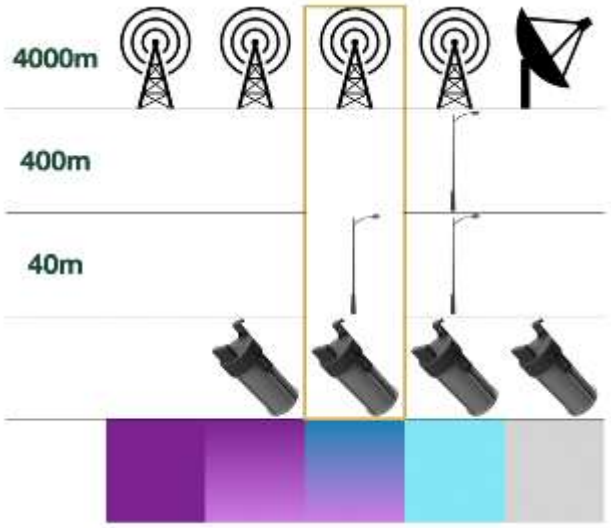
Lamppost Bridge does most heavy lifting

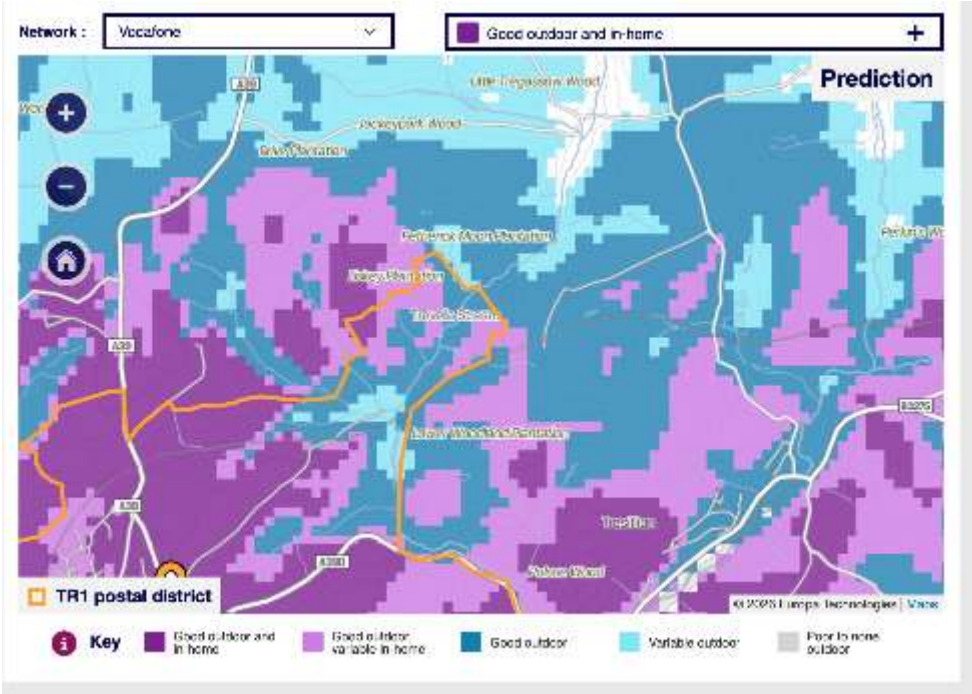
Then it’s hops and satellite



What can you hear from a mile?

LPWANs are surprisingly ubiquitous above ground





https://www.ofcom.org.uk/mobile-coverage-checker

Hitting the right rural economics

Variations on a theme

Solar Sleeve

>50:1

Infrastructure replacement

Standard

8:1

Urban / NB access

Lite

1:1

Rural / Gap filling

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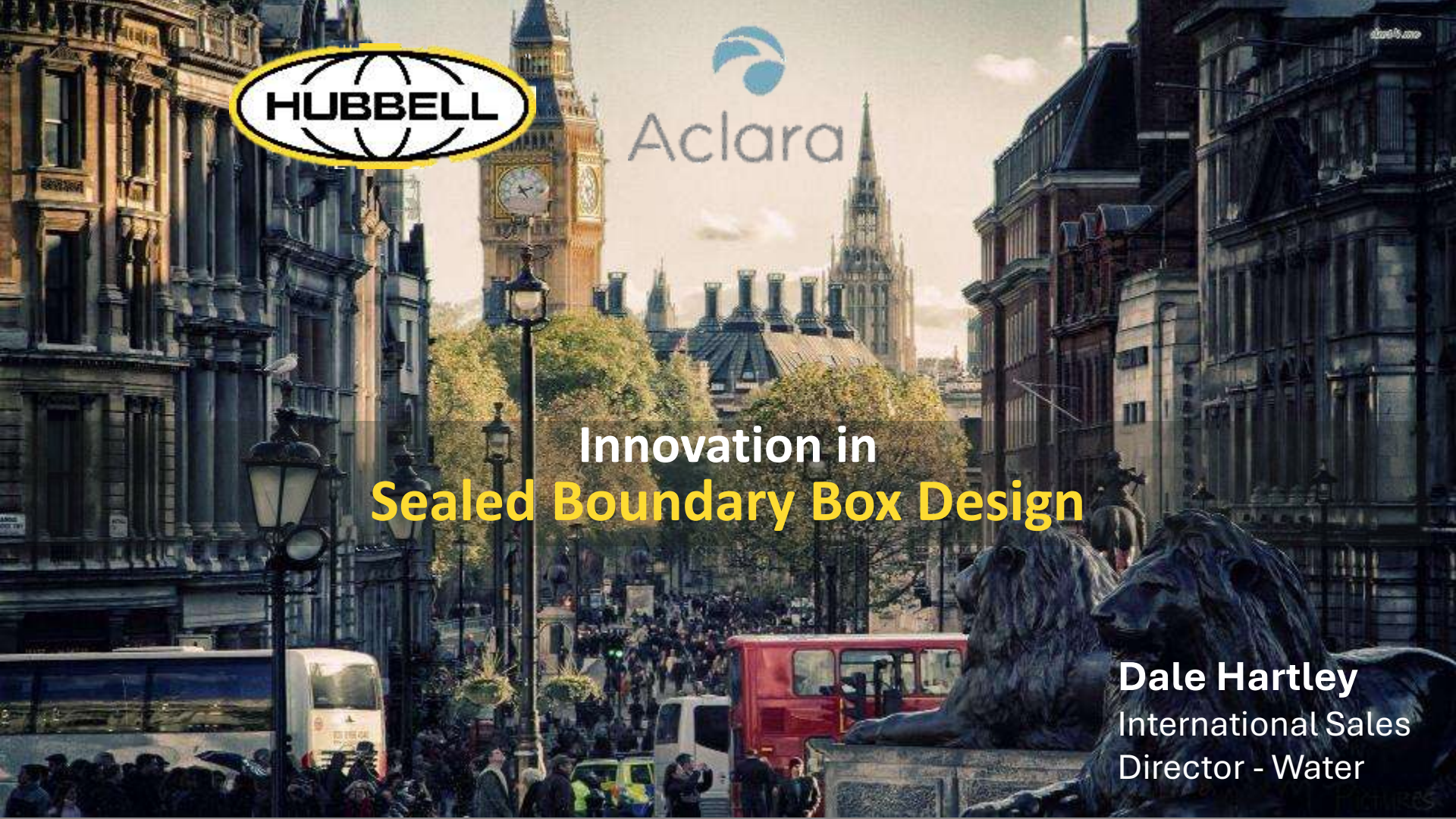
Lunch

Upcoming Events

Become a Member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Aclara
Innovation in
Sealed Boundary Box Design
Dale Hartley
International Sales
Director - Water


WORLD CUP
VICTORY!
ENGLAND BEAT MEXICO
3-2
ENGLAND
MEXICO
WHAT A MATCH!
#THREELIONS
FIFA WORLD CUP

Pedigree & Global Presence

1888
Year Founded

16,300
Employees

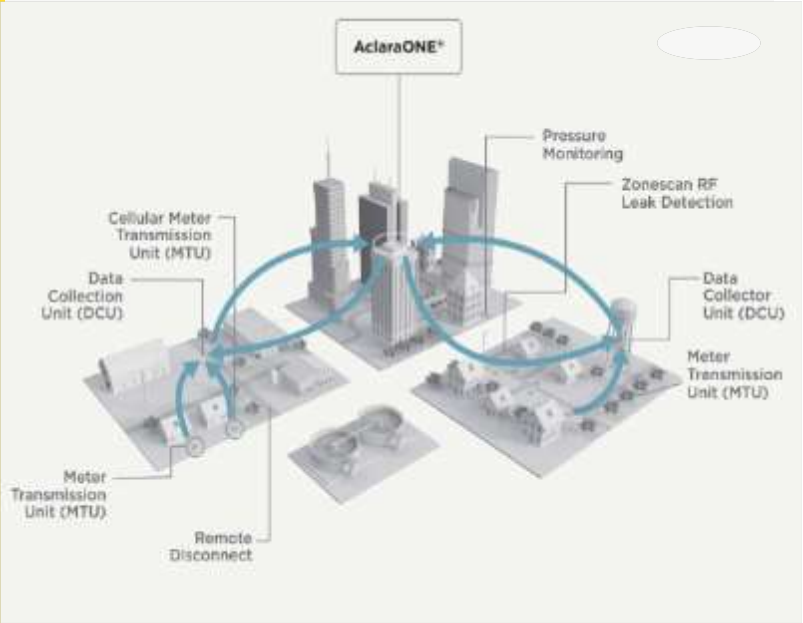
3,000
Patents

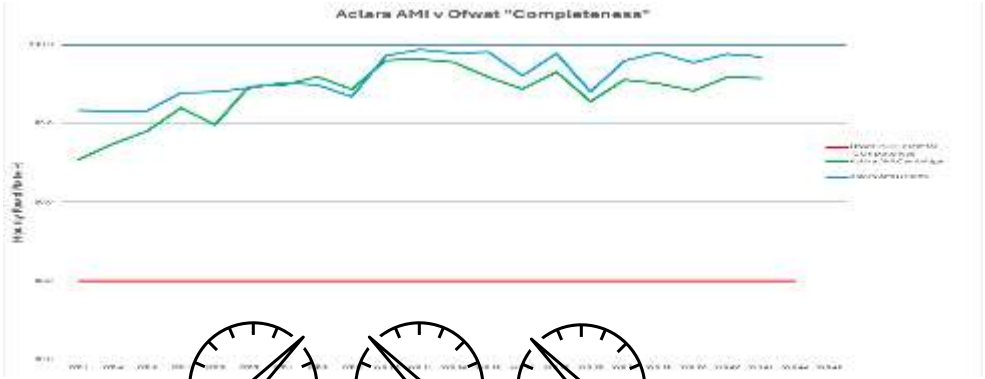
10 Distribution Centers

48 Manufacturing Locations

12 Countries of Operations

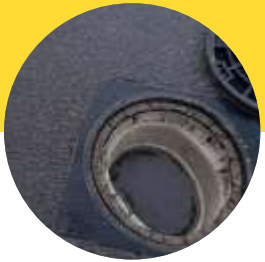
Hubbell Aclara
AMI & Smart Metering





Current Challenges

Current challenges for sealed boundary box designs



Water Intrusion

Many current sealed boundary boxes still experience water intrusion over time due to failed seals

Seal Damage

Methods of opening the lid by prying it off can damage the seals leading to premature failure

Differential Pressure

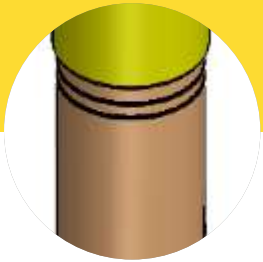
Sealed boxes can experience a differential pressure causing lids to pop off

RF Transparency

Current designs of polymer boundary boxes use metallic location discs which negatively impact the RF propagation.

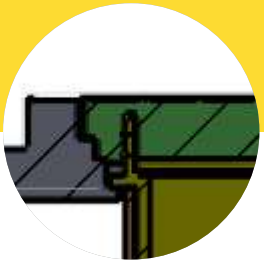
Innovative Solutions

To resolve common challenges



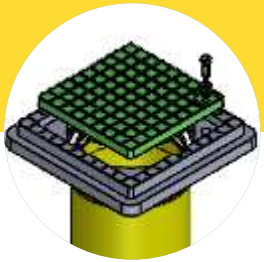
Dual O-Rings

Dual O-rings on the lid and telescopic guard tube provides increased water tightness.



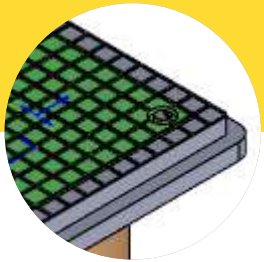
Protected Seals

Seals are recessed inside the guard tube and away from the prying surface of the lid



Bolt Down Lid

To prevent unwanted lid dislodging from differential pressure in sealed boundary boxes



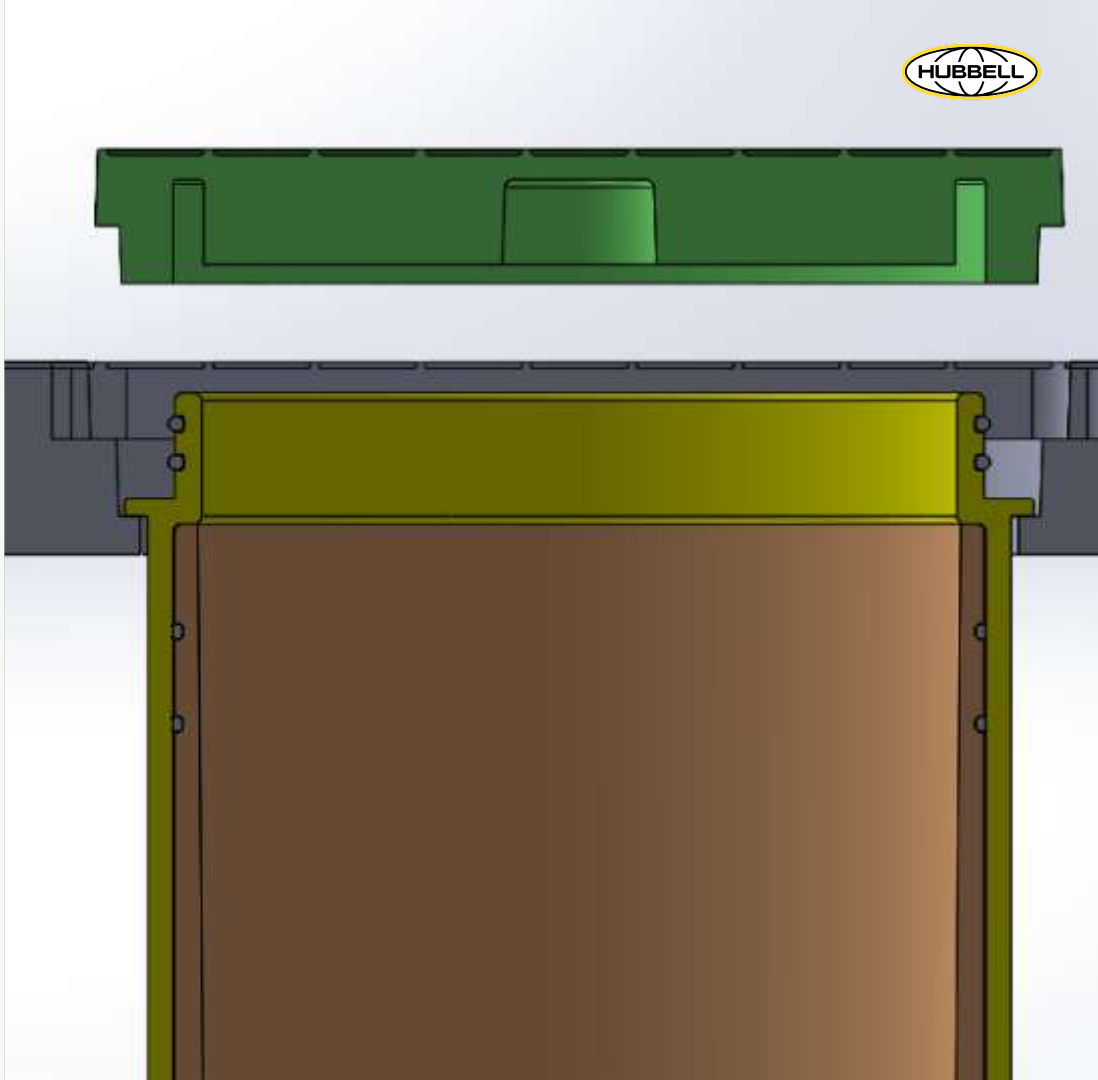
Locator on Surface Box

Both the stainless-steel bolt and an optional locator on the surface box are detectable by metal detectors

Dual O-Rings

Multiple layers of protection for water intrusion creating a more watertight seal

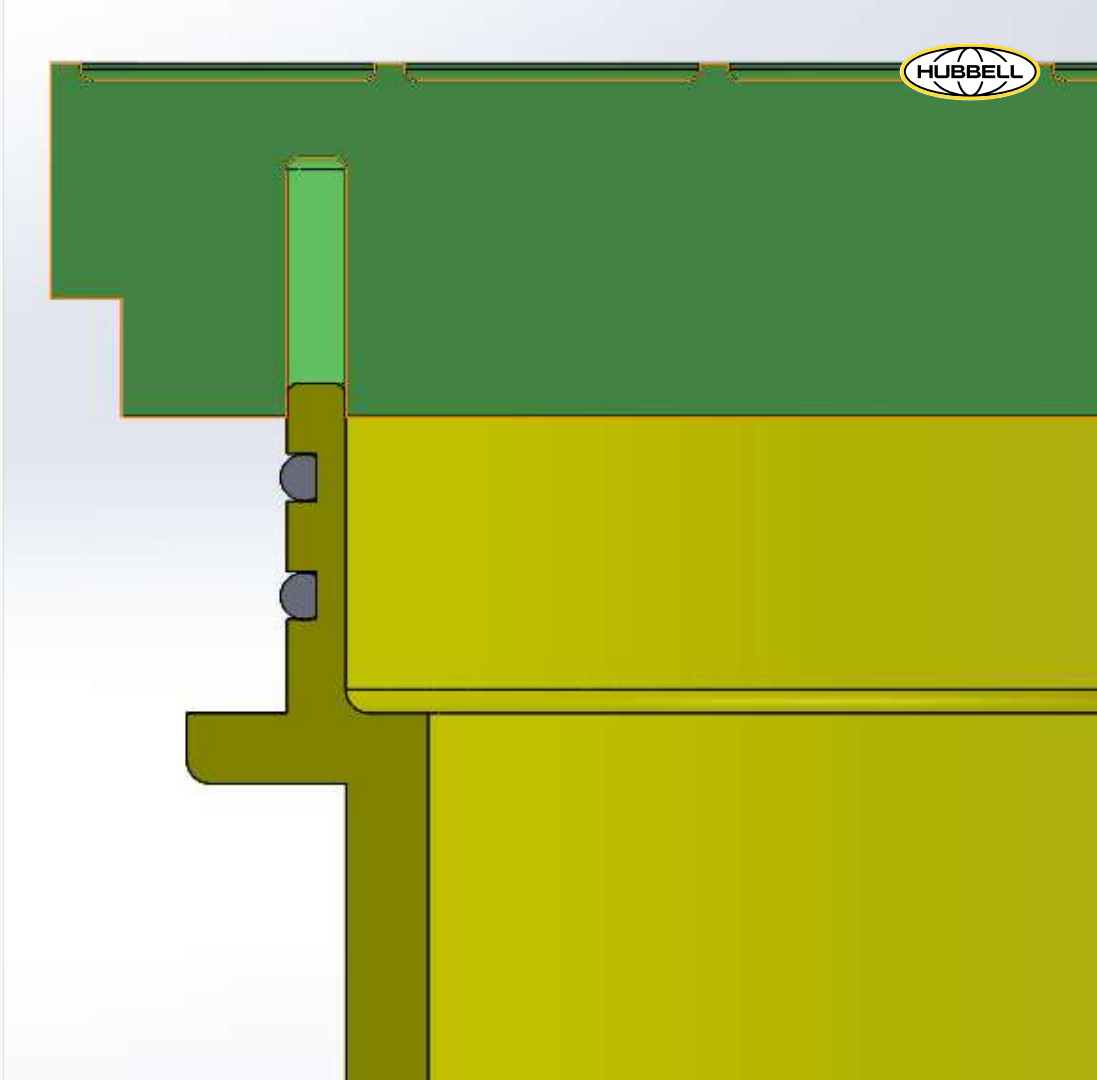
1. Dual high-durability O-rings to seal Lid
2. Dual high-durability O-rings to seal guard tube
3. Alignment ledge to ensure seal contact



Protected Seals

Innovative lid design prevents damage and creates a better seal.

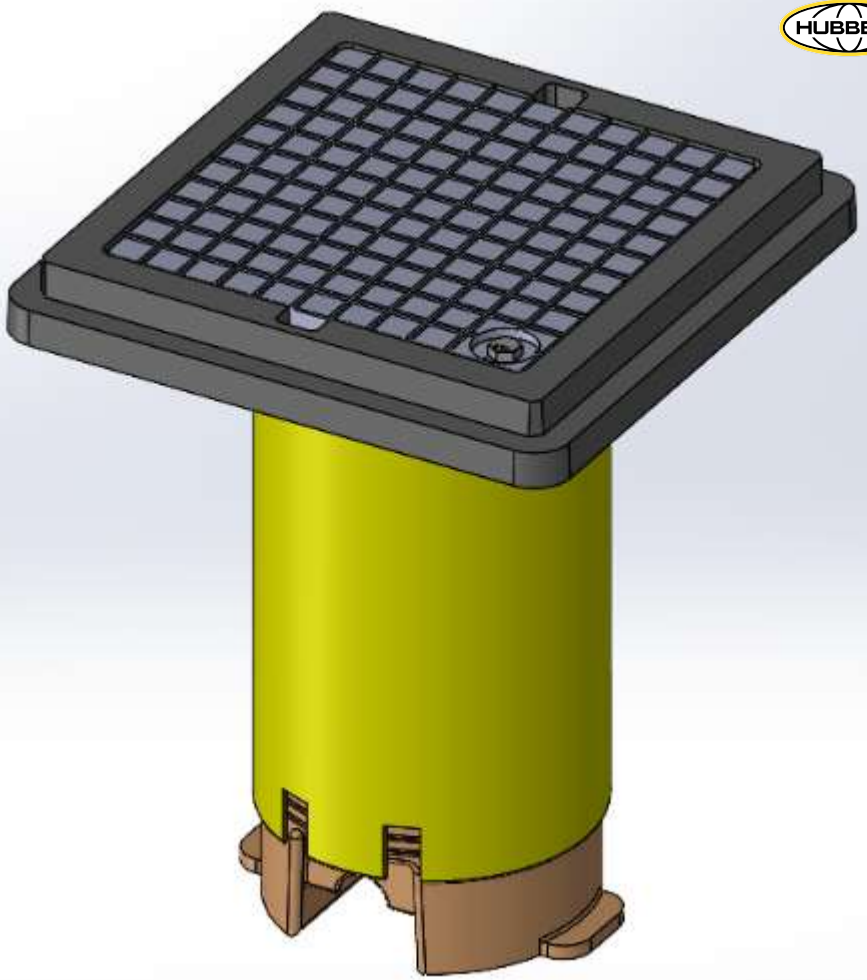
1. Seals recess into lid to prevent damage
2. Prying surface does not contact seals
3. Unique lid seal design



Bolt Down Lid

Easily installed and removed with standard hex driver or socket.

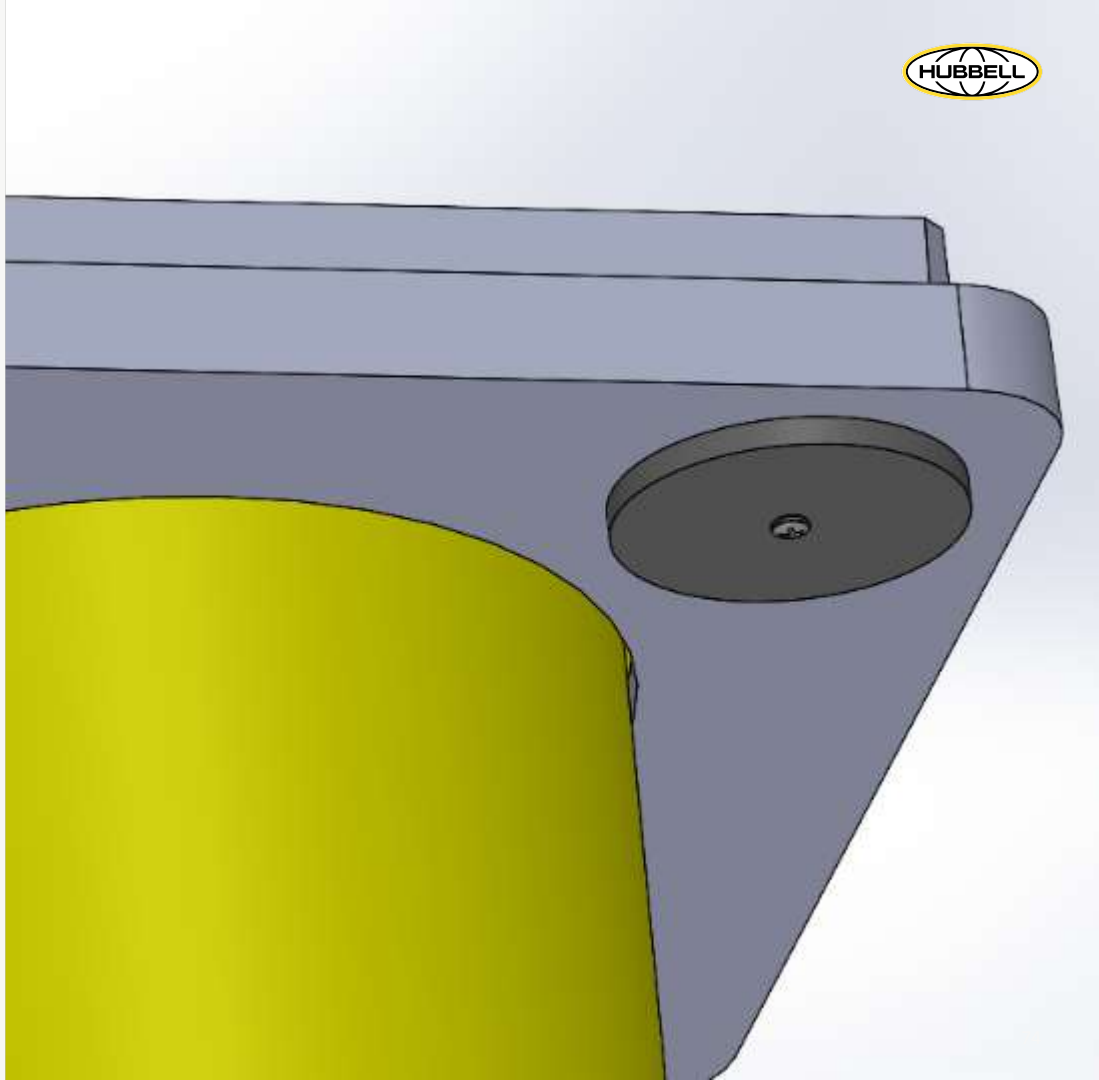
1. Standard Metric hex head bolt
2. Secures lid for optimal seal
3. Prevents lid blow off from differential pressure



Location on Surface Box

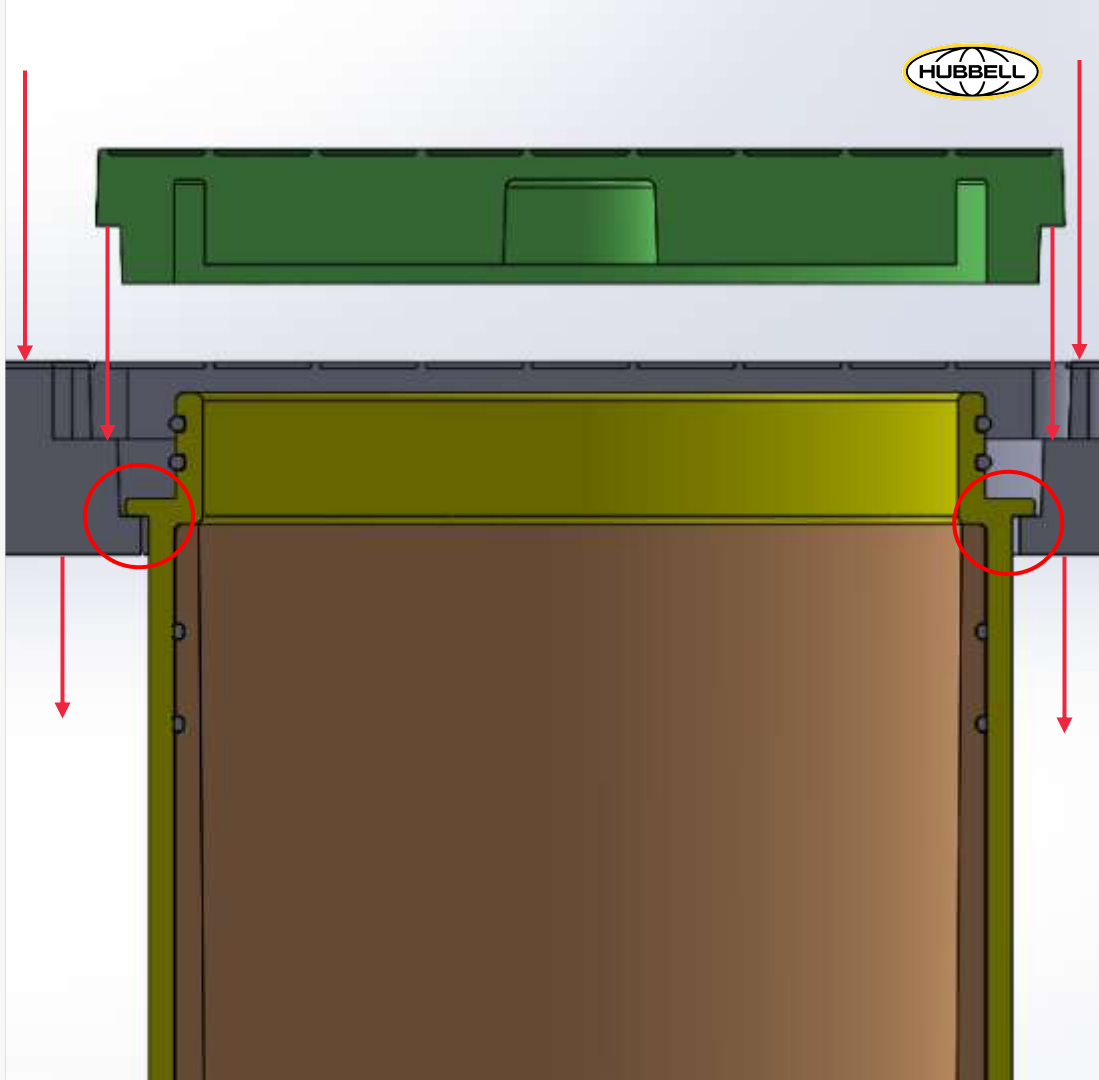
By moving the location devices outside the chamber you can achieve maximum RF performance

1. Stainless steel bolt and thread insert
2. Galvanized Washer option for additional locateability
3. Metallic object does not impact RF inside the chamber



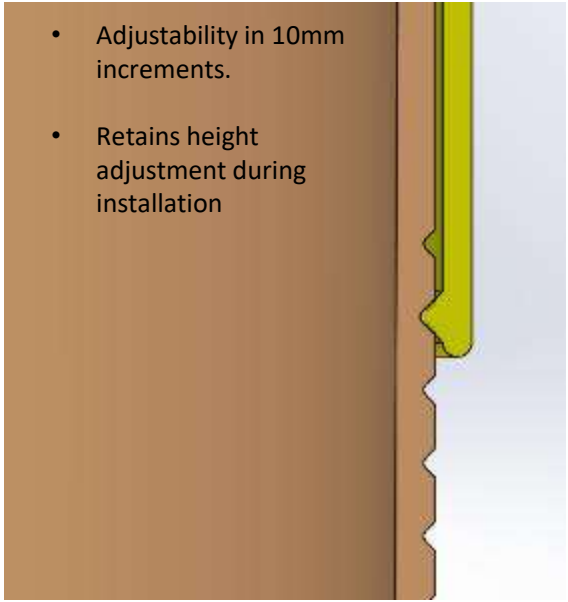
Load Distributing lid & Surface Box

1. Lid is designed to transfer load directly to the surface box instead of the guard tube
2. Surface box transfers load to the compacted soil
3. Surface box does not transfer load to the rest of the chamber



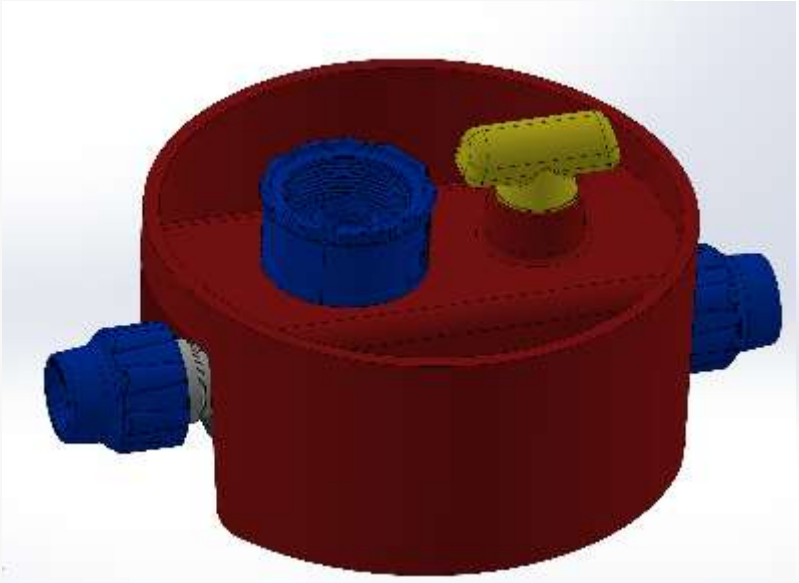
Variable Hight Adjustment with Click-Lock Design

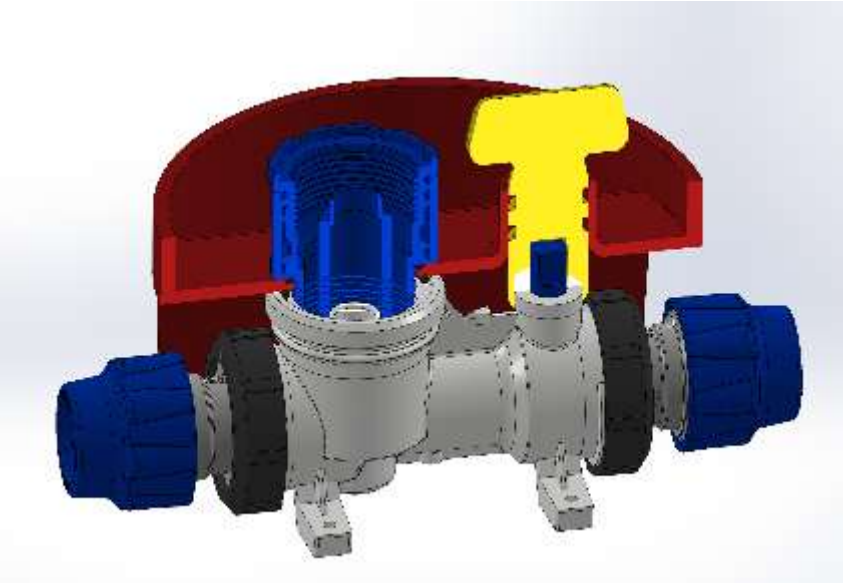
- Adjustability in 10mm increments.
- Retains height adjustment during installation



Partnership

Partnership



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Thank you
Dale Hartley
International Sales Director - Water

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Strategic Session
PCC and Cross-Utility Data Integration

- James Miller, Director of Data and Digital Transformation, Amnut
- Rhys Durham, Senior Consultant, Artesia Consulting

Price Control Deliverables:

Smart Metering Connectivity & Completeness Reporting

Hilary Cox – Smart Metering Data Analyst

8th July 2026

Smart Metering Price Control Deliverables (PCDs)

PCDs are set by OFWAT
to monitor performance of key deliverables in AMP8

Minimum levels of connectivity and data completeness for Smart Meters

Connectivity: a meter must send at least one read in a week

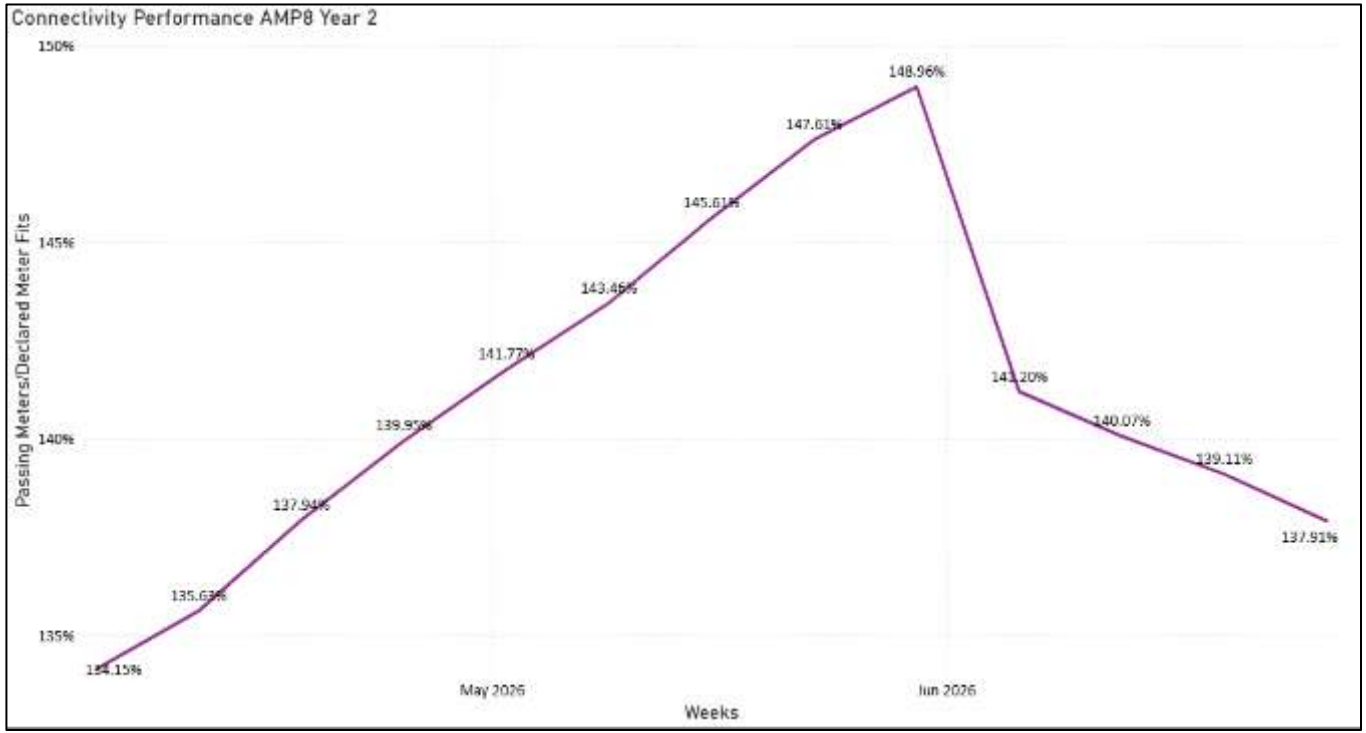
Connectivity: annual success rate of at least 80% of weeks in a year
(>= 42 weeks in a year)

Completeness: 85% of hourly reads received per week
(>= 143 reads in a week)

Connectivity & Completeness Methodology

MeterSerialNumber	AMP	AMP Year	SAP Week Start Date	Reads Received in SAP Week	Connectivity Status	Total Reads Received	Completeness Status
[redacted]470B	AMP8	2	04 April 2026	157	Pass	168	Pass
[redacted]470B	AMP8	2	11 April 2026	154	Pass	165	Pass
[redacted]470B	AMP8	2	18 April 2026	157	Pass	168	Pass
[redacted]470B	AMP8	2	25 April 2026	157	Pass	168	Pass
[redacted]470B	AMP8	2	02 May 2026	157	Pass	168	Pass
[redacted]470B	AMP8	2	09 May 2026	157	Pass	168	Pass
[redacted]470B	AMP8	2	16 May 2026	157	Pass	168	Pass
[redacted]470B	AMP8	2	23 May 2026	156	Pass	168	Pass
[redacted]470B	AMP8	2	30 May 2026	152	Pass	168	Pass
[redacted]470B	AMP8	2	06 June 2026	157	Pass	168	Pass
[redacted]470B	AMP8	2	13 June 2026	157	Pass	168	Pass
[redacted]470B	AMP8	2	20 June 2026	157	Pass	157	Pass
[redacted]470B	AMP8	2	27 June 2026	0	Fail	0	Fail

Year 2 Performance Monitoring



YEAR	TARGET
Year 2	50% of Year 1 installs
Year 3	60% of Year 1 & 2 installs
Year 4	70% of Year 1–3 installs
Year 5	80% of Year 1–4 installs

Challenges, Risks & Opportunities

Moving Goalposts

Meter Replacements

What is a Week?

Media Focus & Customer Expectations

Collaboration

Flexnet Users Group

Thank you for listening

Any questions?

Personalised Experiences drive more sustainable behaviours

Driving Measurable Water & Energy Savings Through Behavioural Insights

Presented by Clement Lapeyre

advizzo
A Colisen company

13 years pursuing one question…

If people know what to do…

Why don't they always do it?

- Water
- Energy
- Sustainability
- Pricing and incentives
- Countries and cultures
- Millions of customer interactions

advizzo

Smart meter data is necessary but not sufficient.

- Customers rarely wake up wanting to “optimise PCC”
- Most water and energy use is habitual, invisible and low-attention
- **Meters + Data ≠ Behaviour Change**
- **Meters + Data + Behavioural Design = Measurable Demand Reduction**

“The value of smart meter data is not in the reading; It is in the behaviours it helps change.”

advizzo

What changes behaviour?

Quick show of hands

Which do you think is most likely to reduce household consumption?

A. More data

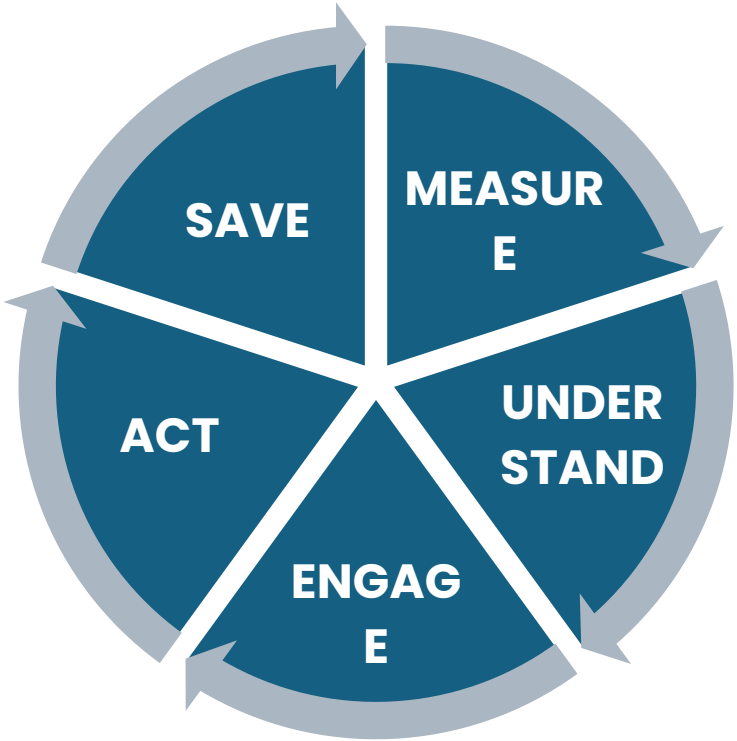
B. Price signals

C. Peer comparisons

D. Personalised timely prompts

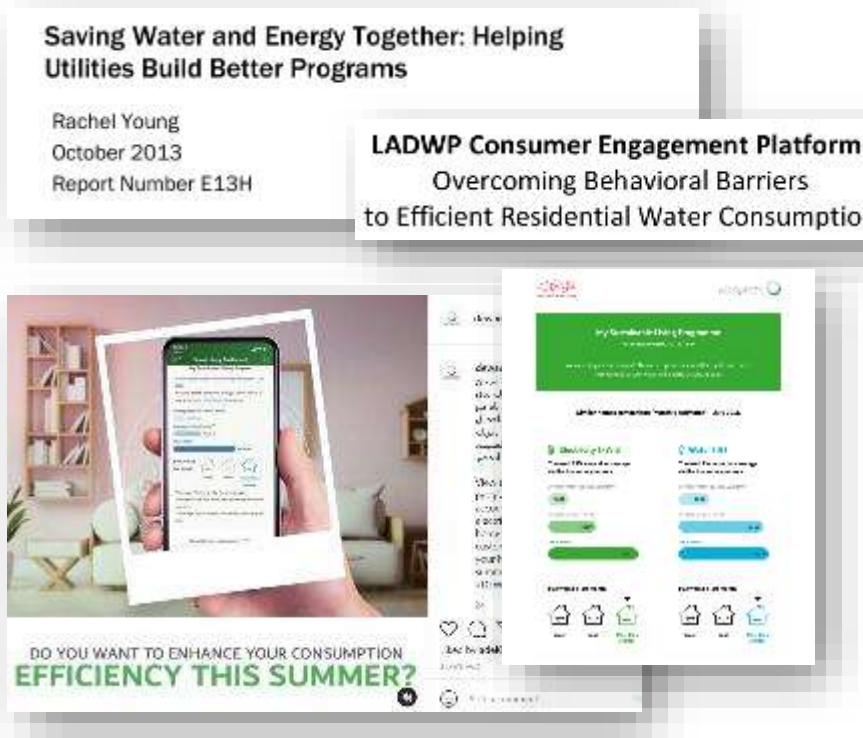
From smart meters to behaviour change at scale

Who we are



Calisen/Supplier = infrastructure
Advizzo = engagement

My sustainable Living: Behaviour change at scale



2.7m residents reached

550k+ customers engaged monthly

87% took action

65% changed behaviour

ROI up to 8 per unit invested

~1% sustained annual reduction

Case Study – Empowering Dubai's Residents to Master Energy and Water Use | Advizzo

View: DEWA My Sustainable Living - Youtube video

advizzo

Five behavioural ingredients behind measurable impact

What actually changes behaviours?

Actionable Insights

Relevant

"This is about my home."

Social

"How do I compare?"

Timing

"Tell me when I can act."

Easy

"One clear next step."

Feedback loop

"How did it work?"

advizzo

Nudge or Noise ? Which one is most likely to trigger action?

You used 14m³ this month

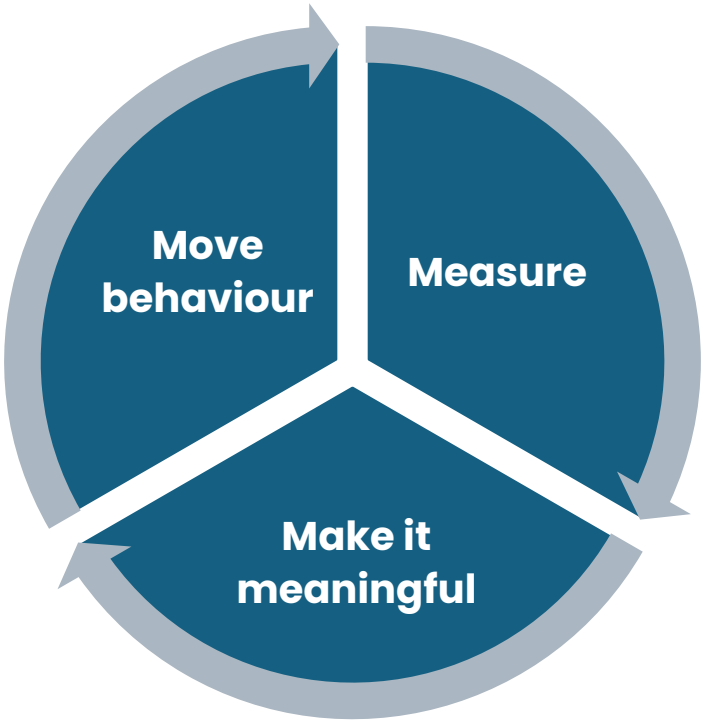
Every day, we supply drinking water to x millions customers

increased overnight for 3 days. This could be a leak. Check your toilet first — it takes 2

The next frontier: smart customer outcomes

What this means for the UK water sector

- ✓ Smart meters create the opportunity; behavioural design captures the value.
- ✓ Cross-utility data can make insights richer, but only if it remains actionable.
- ✓ The winning model is measurable, personalised and scalable — not campaign-led and generic.



KPIs: PCC reduction | Customer-side leakage | Trust | Engagement | Resilience

Smart meters create visibility.

Behavioural insights create sustainable impact.

Thank you

Visit: linkedin.com/company/advizzo
Contact: clement.lapeyre@advizzo.com

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To conclude…

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