Water metering
Understanding the benefits

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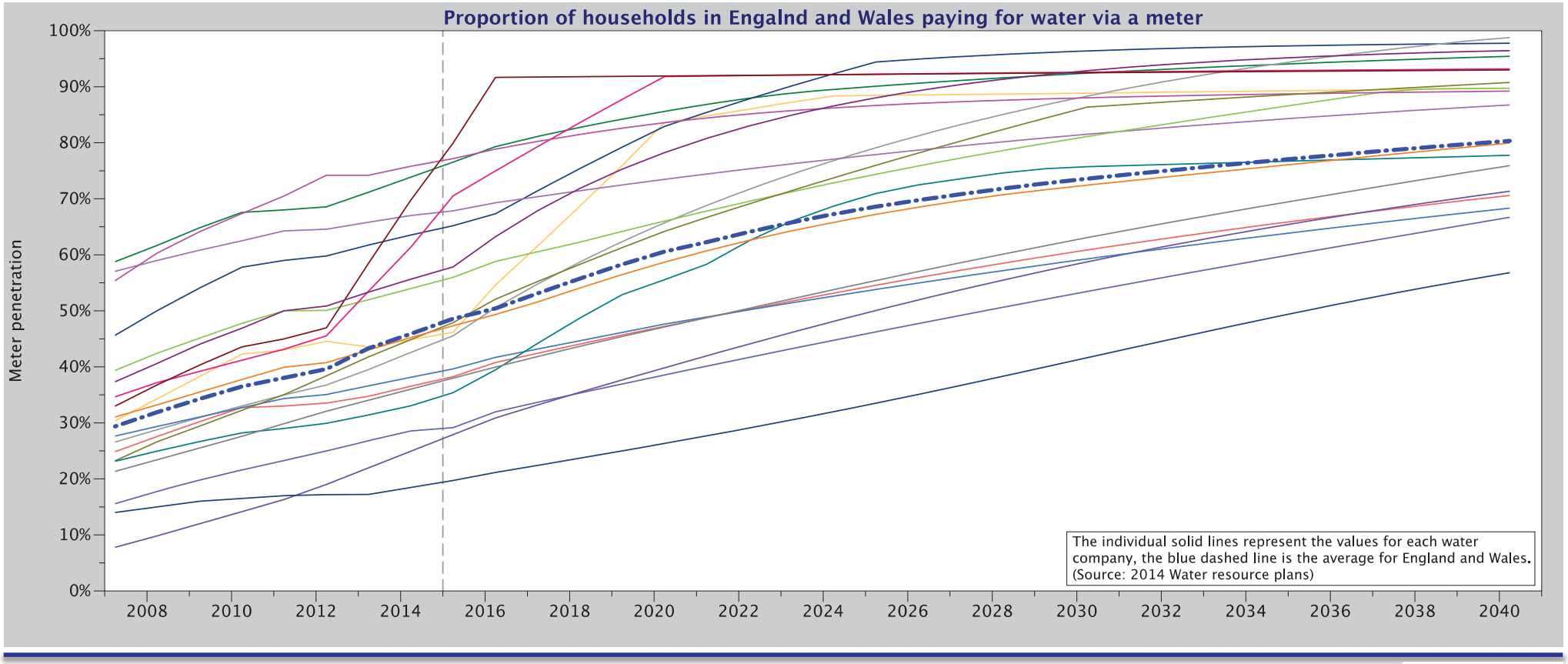
The benefits of water metering are linked to meter penetration. In the UK the range of meter coverage now, and planned over the next 25 years, is large.



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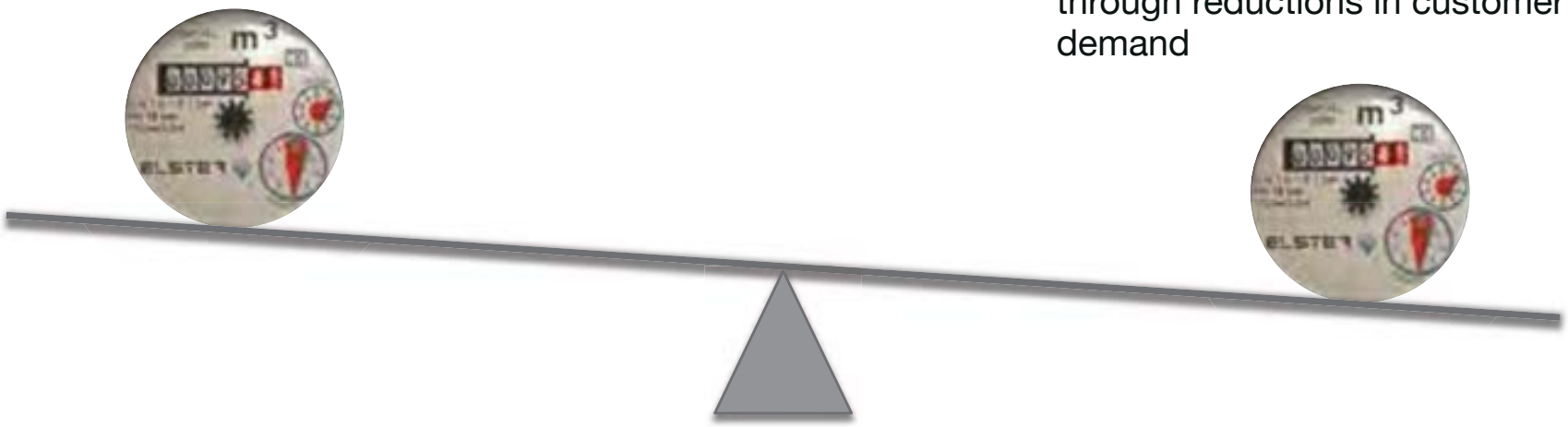
Previously in the UK the benefits of metering have largely been focused on balancing supply and demand

Costs of meter deployment, management, billing, replacement, etc.

Lower costs of pumping & treatment, plus deferring supply schemes through reductions in customer demand



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As meter technology increases the 'intelligence' of water meters, and as their coverage increases, the potential benefits also increase

- Reduce customer demand
- More efficient leak reduction
- Billing / revenue efficiency
- Improve network operations
- Improve customer service
- Manage meter stock efficiently
- Increase resilience
- Reduce carbon

Increasing coverage and intelligence

Increasing potential benefits

Manual read meters

AMR meters

Smart or AMI meters

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Benefits in more detail: Reducing customer demand

Reduce customer demand

Engaging with customers & raising awareness of water use

- More accurate bills
- Water consumption patterns
- Comparison with peers / neighbours
- Social norms
- Nudge

Benefits:

- treatment and pumping costs
- carbon

Reducing water use through:

- Water efficiency devices or
- Changing behaviours / practices

Identifying and reducing wastage of water:

- Leaking WCs and other fittings
- Overflowing cisterns

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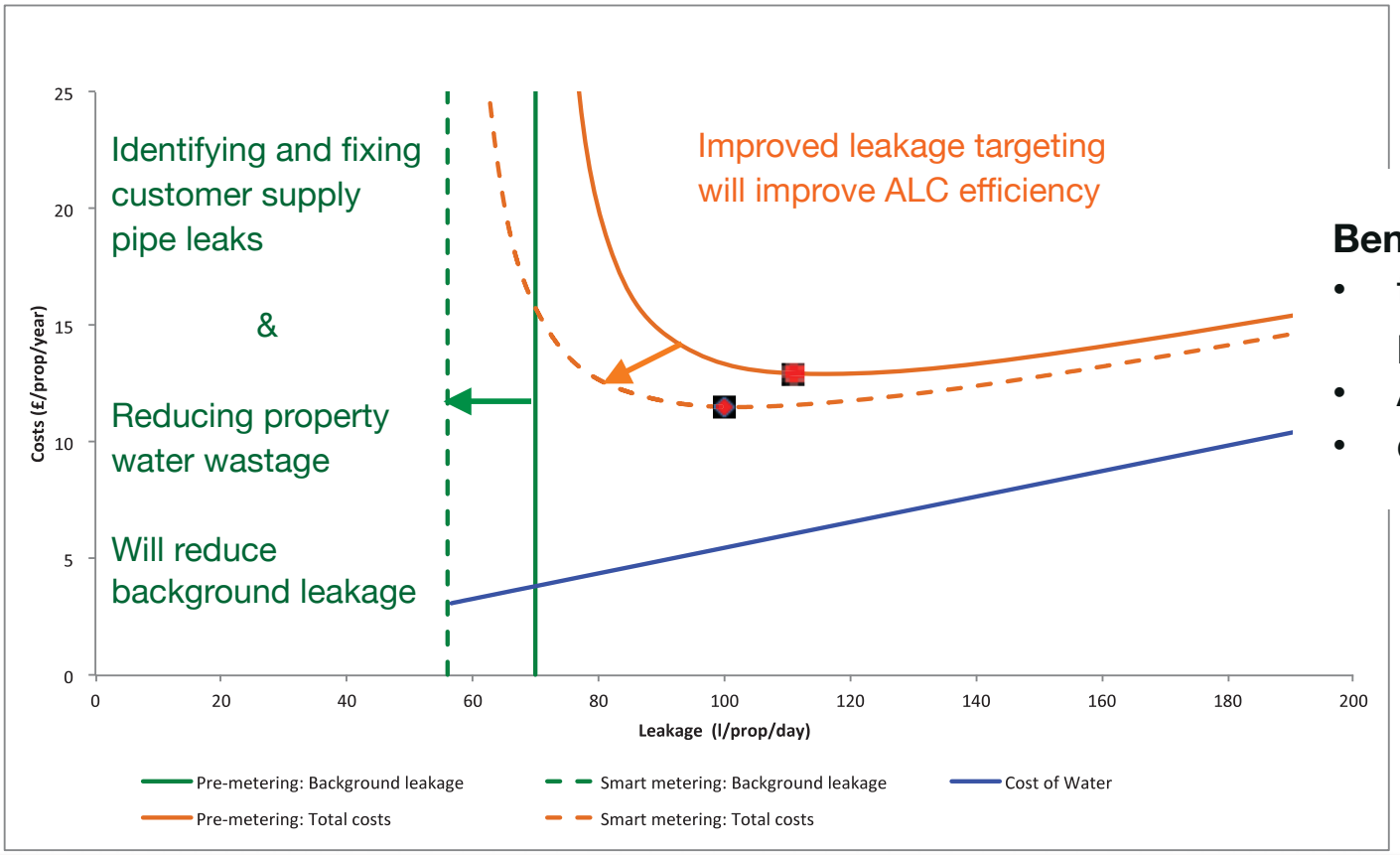
Benefits in more detail: More efficient leakage reduction

More efficient leak reduction



Benefits:

- treatment and pumping costs
- ALC costs
- carbon

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Benefits in more detail: Improve customer service
Based on improved information on customer water use and water supply

Improve customer service

Reducing customer service costs:
- Identifying issues before the customer is aware
- Resolving customer contacts more quickly

Maintaining or improving reputation with customers through improved customer experience

Benefits from broadening the suite of customer services

Benefits:
- Customer service costs
- Reputational benefits
- Added values services

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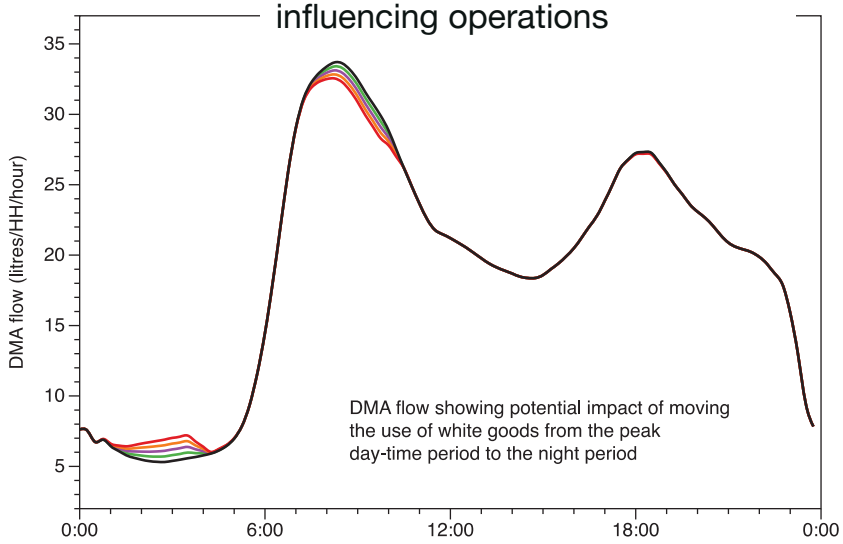
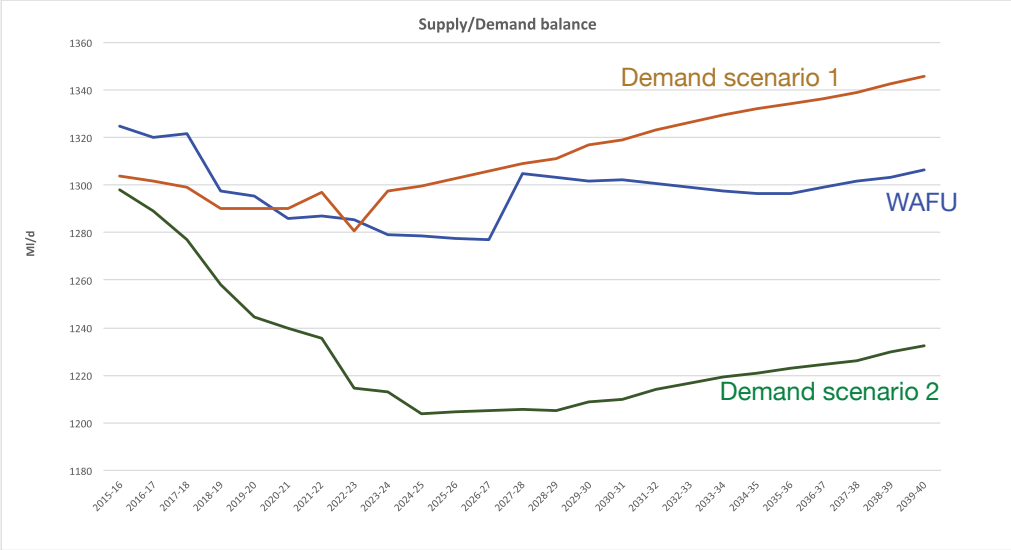
Benefits in more detail: Increasing resilience

Increase resilience

Improved network data available to deal with external factors influencing operations





Increased understanding of demand in the system to improve short and long term planning for water supply

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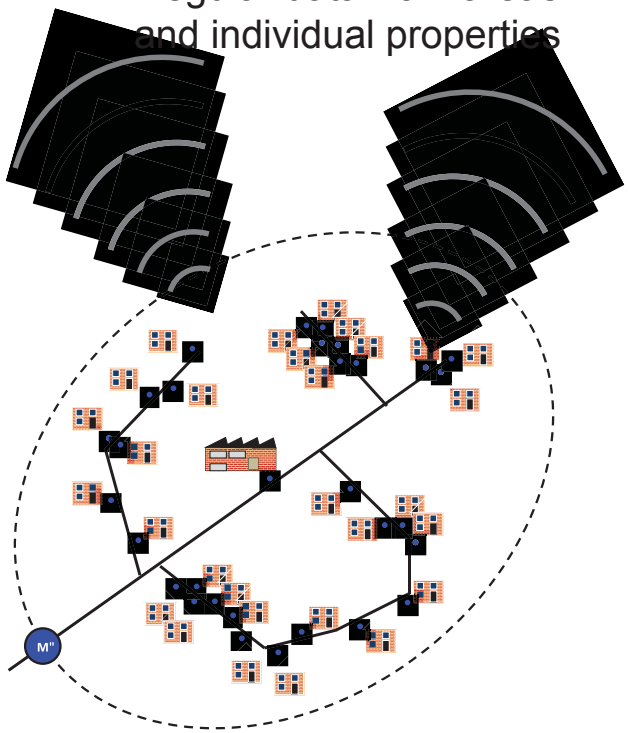
Metering alone will not deliver the benefits. Data analytics will need to provide insight and knowledge from the data that can be used to leverage the benefits

Regular data from areas and individual properties



DMA Water Balance

Complete DMA Water Balance			
Customer	Flow D1	Flow D1+n	Demand
27387	102	108	6
38993	219	238	19
30872	873	902	29
23840	153	174	21
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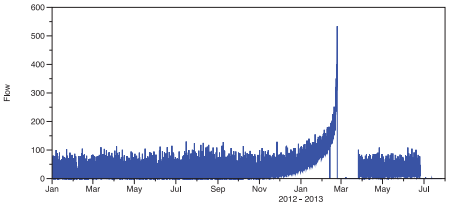
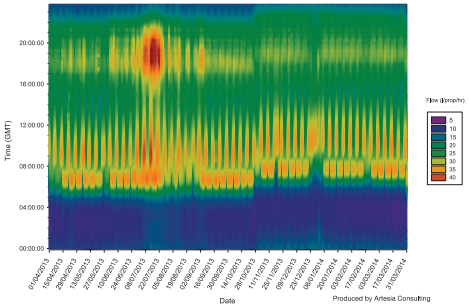
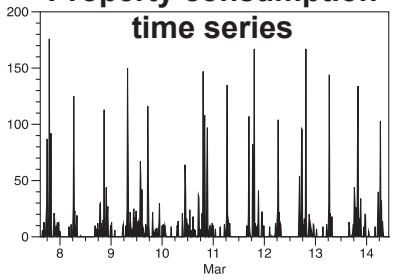
87384	573	602	29
Total customer demand			3498
Total DMA inflow			3678

Supply pipe leak data

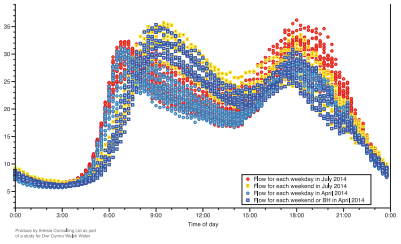




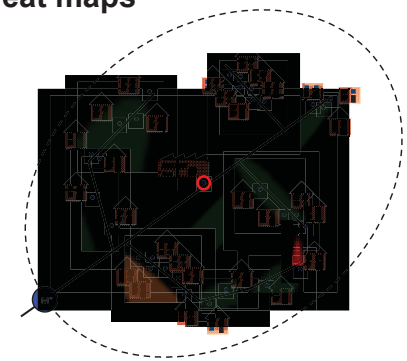
Property consumption time series



Diurnal flows



Heat maps



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Summary

- Historically we have only really considered the benefits of metering in the context of the supply demand balance
- As meter coverage increases and as more intelligent use of meter data evolves, there are a wide range of potential benefits; for the utilities and customers
- There are challenges: technology, data privacy, fairness, investment
- Data management, data analytics and information visualisation needs to evolve
- The full range of benefits will only be available in areas where meter coverage is high

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