



Intelligent Metering Initiative

Innovation & Intelligent Metering Will it help deliver water efficiency?

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Content



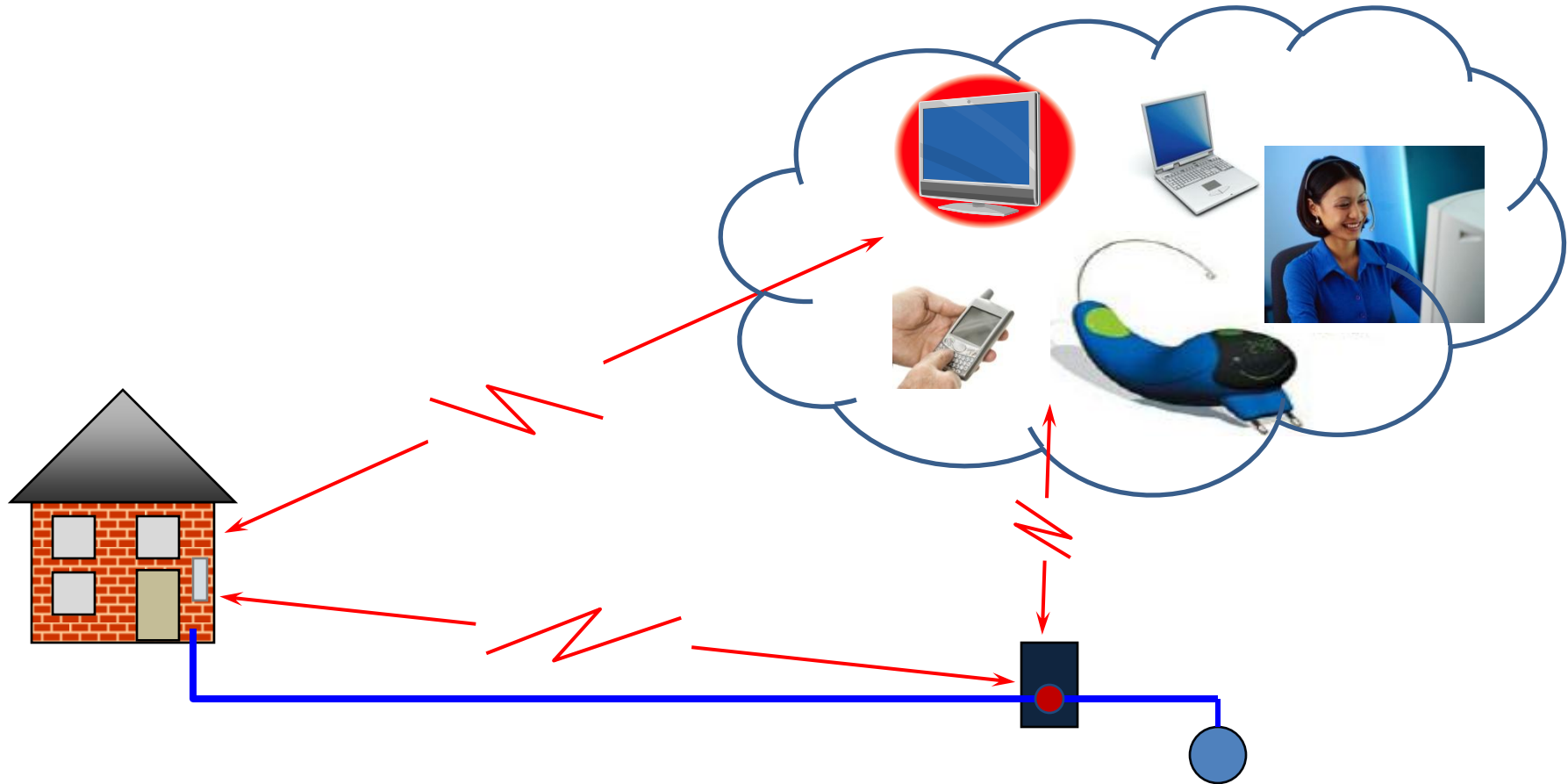
Intelligent Metering Initiative

- What do we mean by intelligent metering
- Introduction to the IMI
- Research areas covered over last 2 years
- What's happening in the energy sector
- How might this impact water?
- Metering and water efficiency
- Summary
- Themes for the future

Intelligent or smart metering



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The IMI



Intelligent Metering Initiative

- Set up in 2008
- *“Help the industry evaluate the role that intelligent metering may have in meeting industry and government goals”*
- Three main aims:
 - collate, communicate and share information
 - identify the key challenges and opportunities
 - co-ordinate, monitor and carry out research to provide solutions



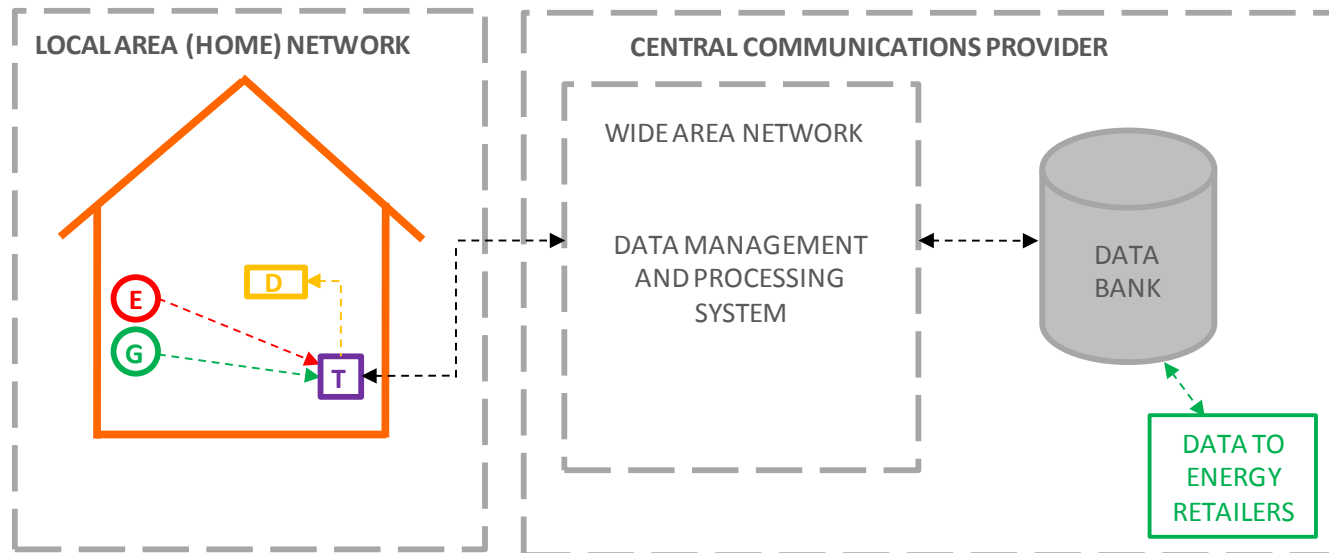
- Methodology for cost benefit analysis of intelligent metering
- Data requirements specification
- Communications protocol
- A review of metering evidence and gap analysis
- The impact of metering on demand
- Customer needs and attitudes
- Benchmarking meter practices and policies
- Multi-utility metering

Energy smart metering



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- Proposal to roll out energy smart metering to all homes in UK by 2020 (DECC consultation)
 - 25,000,000 homes (50,000 per week)

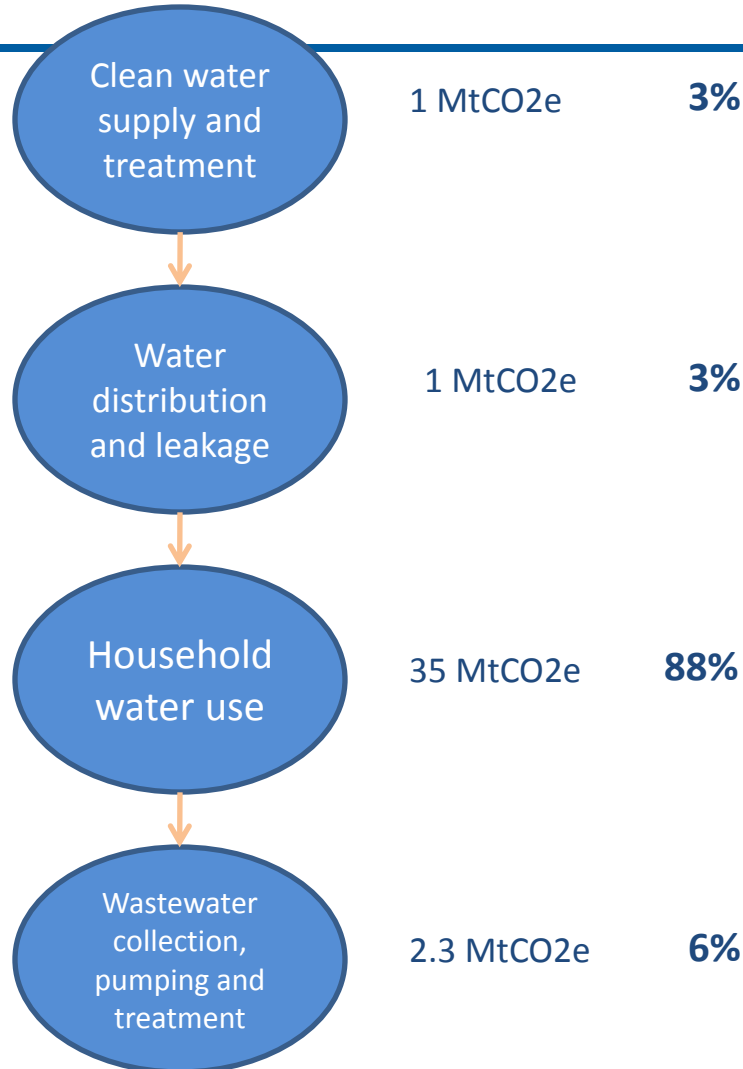


Smart energy meters in every home

Two way communications into every home



Water – energy - carbon



Significant link between energy and water use in the home

Personal & household washing, cooking & cleaning

- Heating and pumping water
 - Showering
 - Hot tap use
 - Bathing
 - Clothes washing
 - Dishwashing

Source: Future Water

Smart energy meter functionality



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Functionality	Gas	Elec	
Remote provision of accurate reads or other information	✓	✓	
Two way communications to the meter system	✓	✓	
Home area network (open protocol, provide real-time to a home display unit, allow other devices to link to the meter system)	✓	✓	
Support for a range of time of use tariffs	✓	✓	
Load management capability		✓	
Remote disablement and enablement of supply	✓	✓	
Exported electricity measurement		✓	
Capacity to communicate with a micro-generators		✓	

Smart energy meter functionality & water?



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Functionality	Gas	Elec	Water
Remote provision of accurate reads or other information	✓	✓	✓
Two way communications to the meter system	✓	✓	✓
Home area network (open protocol, provide real-time to a home display unit, allow other devices to link to the meter system)	✓	✓	✓
Support for a range of time of use tariffs	✓	✓	✓
Load management capability		✓	
Remote disablement and enablement of supply	✓	✓	
Exported electricity measurement		✓	
Capacity to communicate with a micro-generators		✓	
Leakage management			✓

Energy demand reduction project



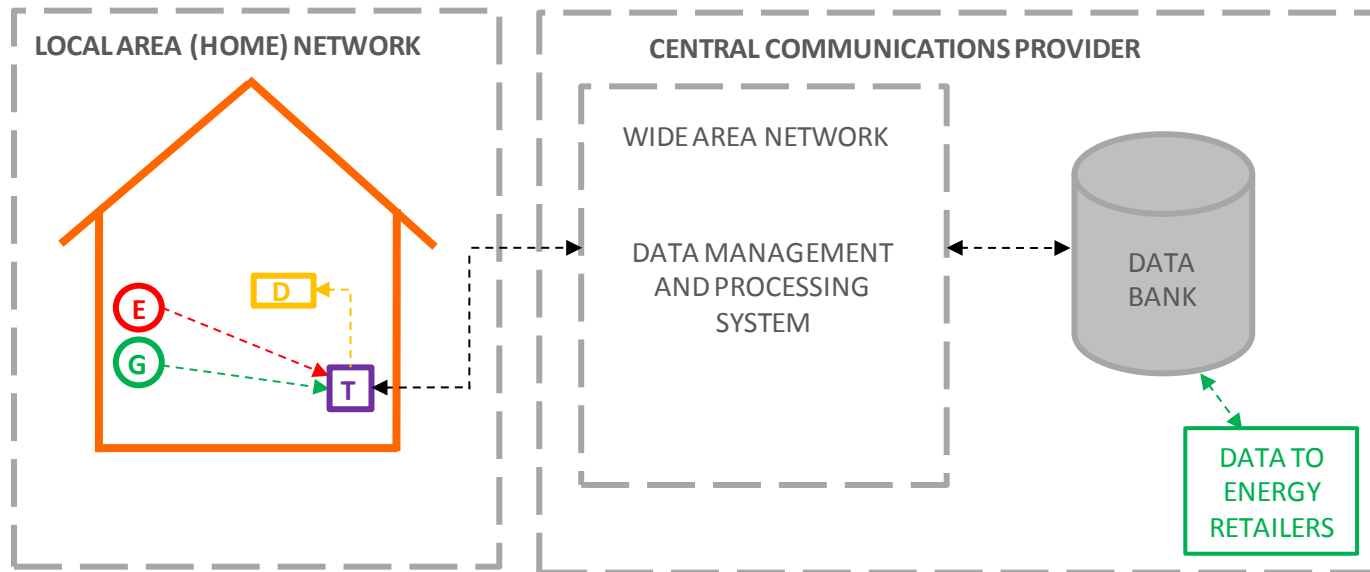
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- Large domestic smart energy meter trial
 - 59,000 properties & 18,000 control group
 - Investigate how customers respond to better information on their energy use and how lasting the response is
 - Billing & information
 - Clip on visual display devices
 - Smart meters
 - (customers display units, info via TV and web)
 - Community engagement
 - Managed by Ofgem (4 energy companies taking part)
 - No conclusive results yet (next interim report due in Feb)

Can water take advantage of energy smart metering?



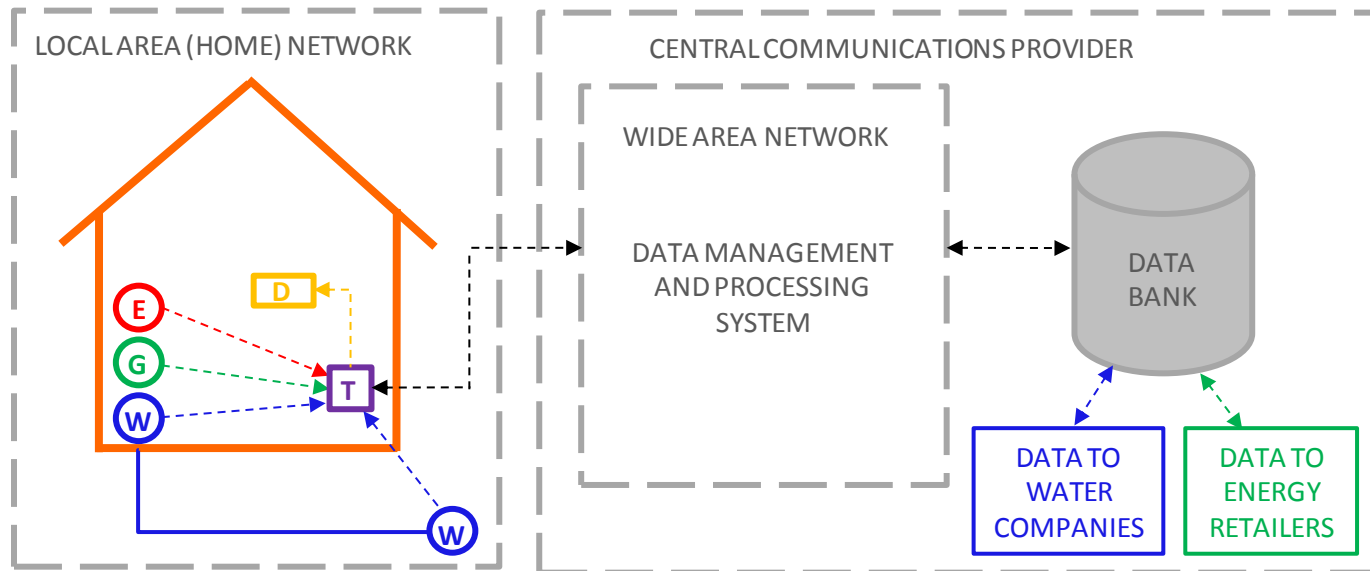
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Potential options



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Water meters (internal or external) communicate with the home area network

Make use of the central communications network to gather water meter data and potentially relay information back to customers

Alternative options



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- Automatic meter reading
 - Walk by radio
 - Drive by radio
 - Fixed radio networks
 - SMS / GPRS
- Radio linked customer display devices
- Leak alarms and logging built into meter units

Intelligent metering and water efficiency



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Intelligent metering

- Price indications to consumers (range of tariffs)
 - Simple, rising block, peak, lifestyle tariffs
- Water usage feedback to consumers
 - Display devices, web, TV, phone
- Linking energy and household hot water use
- Better understanding of consumer water use
- Link household and network data

Potential outcomes

- Reduced demand (including peak use)
- Improved engagement with consumers
- Better customer service
- Ability to reduce water & energy bills
- Improved take up of water saving measures
- Reduced energy consumption
- Reduced GHG emission
- Reduced customer supply pipe leakage
- Reduced network losses

Summary



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- Intelligent / smart metering technology is available
- Innovations being led by the energy sector and meter suppliers
- Potential options for water to link into the energy initiative
 - Energy communications network could deliver intelligent metering
- Intelligent metering has the potential to improve the future water supply / demand balance
- However
 - no central leadership on metering roll-out in the water sector
 - evidence on some of the benefits is still weak

Themes for the future



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