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THE
**WATER
REPORT**
POLICY | REGULATION | COMPETITION

Special Report

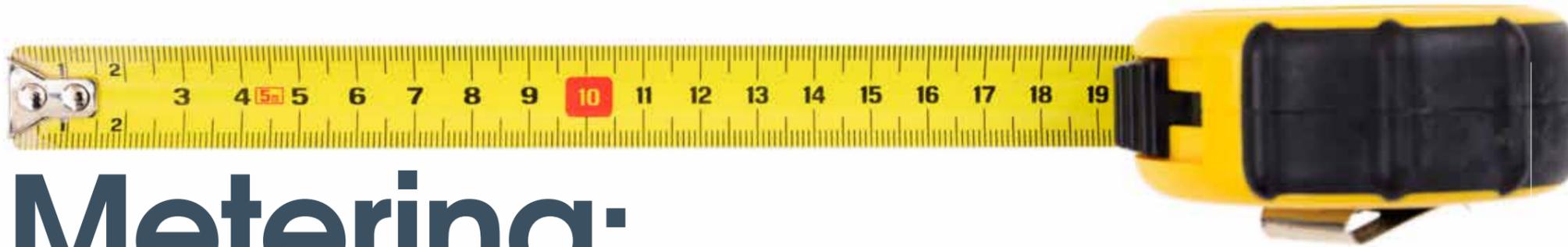
Non household metering: where now, where next?

Everything points to the meter, but where is metering pointed?



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MOSL
MARKET OPERATOR SERVICES LTD



Metering: getting the measure

Everyone agrees NHH metering is a good thing in principle – so why isn't it delivering for everyone in reality?

You are hard pressed to find anyone in water who will tell you effective metering for non household customers isn't desirable. The emotive and political issues that dog the domestic space don't apply. For businesses, paying by use is fair, supports accurate billing and underpins good customer service. Effective metering also brings transparency and clarity to wholesaler/retailer interactions, and it's a prerequisite of any water management or conservation work that can contribute to alleviating pressure on the environment.

That's more important than ever now climate change consequences are crystallising. Most water company areas are designated as in serious water stress. Within the next few decades, we may well face a drought worse than any previously recorded. Far from being peripheral to these challenges, non household (NHH) customers consume 3000MI/d – around a third of water put into supply – and could be a big part of the response – particularly those MOSL mapping has identified to be in water stressed areas. And that's without even mentioning the carbon benefits of driving down water wastage.

And yet, nearly five years in to market operation, the positive outcomes good water metering could deliver are simply not there in the volumes they should be.

This is not news. Consumption data and metering issues were identified as problems soon after the market opened in 2017. Despite the valiant efforts of many – including MOSL and the Retailer Wholesaler Group as well as some individual trading parties – only limited pockets of progress have been made. Indeed, many of the issues seem intractable, hampered by the fact that complexity rather than standardisation or uniformity characterises most aspects of the metering scene. MOSL's Strategic Metering Review has gone a long way

3% of NHH customers use

70% of total NHH consumption which is

20% of all consumption

25 years average NHH meter age.

36% NHH meters in high water stress areas

to evidence this. Some of its key findings on the situation today are shown in the data around the page.

It's also important to note that how different stakeholders are affected by current metering arrangements, and how they view them, varies considerably. See p4-5 for a selection of opinions.

MAJOR TO MINOR

NHH metering challenges span from major structural issues to minor practicals, and include the following:

- Accountability complexity – At market opening, wholesalers retained ownership of meters but responsibility for reading them passed to retailers. This has led to complexity, friction and cost. Retailers don't have all the rights and powers they would have as owners. Moreover each wholesaler has pursued its own metering practices, leaving retailers to effectively grapple with multiple markets, at detriment to delivering outcomes for customers. There is also a mismatch of risk: meters are critical for retailers' businesses but only a tiny part of wholesalers' asset base – with different wholesalers taking different approaches to how much attention they pay them.

- Under investment – The average NHH meter is a quarter of a century old. This affects not only the condition of meter assets, but also their sophistication: dumb meters are dominant and at the current rate of replacement it will take decades before all meters are to some degree smart. It currently falls principally to wholesalers, as meter owners, to invest in them. Historic investment in smarter technologies has been water resources driven rather than customer or market driven, confining it to pockets of the country where resource issues are tightest. Retailers consider investment in better metering to be low on wholesalers' priority list, given far more powerful incentives are attached to

other deliverables. Even where wholesalers have meter replacement programmes, these often favour replacing cheaper, easy to access meters over larger, more expensive and potentially harder to access ones, despite the larger water volumes they measure. And while smart and AMR meters are growing in number, dumb meters continue to be installed in some instances. Retailers and customers can invest in additional 'clip-on' technology which turns an existing dumb meter into the equivalent of a smart meter (including fitting smart data loggers), but this carries asset stranding risk for the former if the customer switches away while the latter are not always convinced of the investment case.

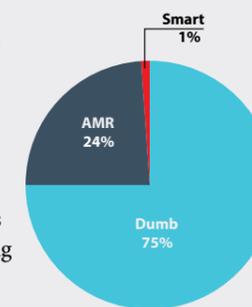
- Meter reading – Around 250,000 meters have not been read for 12 months or more, and many more are read infrequently. This is variously attributed to poor data making meters difficult to find; the location of meters in hard to access areas; high meter reading costs and lack of competition for meter reading services; Code restrictions which have limited the number of reads that can be supplied by customers (recently addressed); complexity resulting from the accountability arrangements described above; low retailer margins making many reads uneconomic (see bullet point below); and lack of customer engagement.

- Retailer margins and incentives. Retail margins are low and recent research from consultancy Economic Insight showed that for low consuming customers, retailers make a significant loss. Inevitably this hampers improving meter read performance and investment in technology. Furthermore there is no incentive for retailers to encour-

HOUSEHOLD V NHH CONSUMPTION		
	HOUSEHOLD	NON-HOUSEHOLD
Customers	23m households	1.2m supply points
% of national consumption	70% (c7,000MI/d)	30% (c3,000MI/d)
Annual consumption	Approx. 50m ³ to 900m ³	0 to 12 million m ³ (12,000 megalitres). Almost half NHH meters use less than half the amount of a typical HH.
Meter size	15mm or 20mm	15mm to 300mm. 80% are the same type and size as in HH.

23% meters not read in the last year (with regional variation)

NHH METERS ARE:



age customers to save water, since any saving leads to a reduction in retailer revenue.

- Data access – A newly emerged issue where wholesalers have invested in smart technology is how, and at what price, they provide access to that data and to whom. This has had an airing through Ofwat's recent competition case against Thames Water following complaints about the company's unloggable smart meters, logger removal and failure to offer access to smart data on fair terms. Data standards and interoperability are also becoming a greater concern as more wholesalers look to roll out smart meters.

The complexity, costs, varying priority attached to metering by different parties, and frustrations deriving from role and responsibility arrangements have combined to leave metering as something of a Cinderella issue – lacking action if not attention, despite its potential to support good outcomes for customers, the market and the environment. It is illustrative too of how the business market has become somewhat siloed since market opening, rather than considered an inherent part of the wider water sector's response to societal and environmental challenges.

MAKE OR BREAK

So are we as far off as ever from a determined, consistent, funded, industry-wide approach to metering? The blunt truth is we are at a make or break moment. The push factors are clear and include climate change, water resource fears, disengaged customers, high complaint levels (most to do with billing), persistent market frictions and high operating costs.

Meanwhile the window of opportunity is narrow. If business customers are to get better service and play their part in delivering long term sector targets – on resilience, carbon, the supply/demand balance, pollution and more – their requirements and potential contributions need to be evidenced and factored in before it is too late. That means in time for the next round of Water Resources Management Plans and business planning for PR24. And all this needs to be aligned with the next retailer price review set for 2023.

The Water Report and MOSL have collaborated to put this special report together to take a hard look at the metering challenge and its prospects for the future. In particular, we are keen to see if any common ground can be identified, ahead of decisions being taken that will make or break business market metering for the next decade.

METERING DASHBOARD

As market operator, MOSL analyses market performance and consumption data, which it makes available to trading parties via a series of dashboards. In July MOSL launched a new 'self-service' metering dashboard to help trading parties analyse and visualise their performance and how they compare to the rest of the market.

Insight from this data is key to understanding how, when, where and why NHH customers use water and act accordingly. The sharing of data is also enabling discussion between trading parties and encouraging companies to work together to develop solutions.

- For more information or to access the dashboards, go to www.mosl.co.uk.



Q How satisfied are you with the arrangements in place today for metering business customers' water usage?

Finding common ground on metering in the market is going to be tricky, as it seems stakeholders are starting from very different basic positions. We asked a range of stakeholders how satisfied they are with today's NHH metering arrangements. Views were incredibly polarised, stretching from 'very satisfied' to 'very dissatisfied'. To generalise, retailers and end customers seem to be on the sharp end of the challenges and therefore significantly less satisfied with the status quo than wholesalers.

Q: What are your views on/experience of metering in the NHH water retail market today? What works well? What is challenging/difficult?

DR MIKE KEIL, DIRECTOR OF POLICY, RESEARCH AND CAMPAIGNING, CCW



Insufficient meter reading has resulted in poor data quality which in turn has caused a large number of billing problems for customers. These include inaccurate estimation and bill shocks caused by the correction of data, or inflated bills caused by unidentified leakage.

While some retailers/wholesalers are making progress in reducing the rate of long unread meters, billing and charges complaints remain very high. Too often confusion around responsibilities hampers efforts to locate and read meters.

BARRY MILLAR, OPERATIONS DIRECTOR, WATERSCAN (REPRESENTING SELF-SUPPLY)



On the whole, metering in the NHH market is functional albeit with significant shortcomings. There is increasing focus on smart metering from wholesalers with, in my opinion, a lack of hand in hand consideration for data access. That after all is the goal, not in itself to increase smart metering and I feel will give rise to future problems.

It has been positive to see movement toward more end user involvement with increased acceptance of customer reads. This could well give rise to dual benefits: not only increased readings in the market from customers, which in turn provides greater assurance to any automated data collection such as AMR (which still requires visual correlation) but it would be hoped that retailers offer associated cost incentives for end users to collect these reads. This should provide a further incentive for end users to ensure meter access is improved. End user issue meter access accounts for almost 50% of WaterScan's long unread meters (which we manage on behalf of the self supply community).

Retailers for their part need to be more proactive in engaging their customers on meter reading, making the end user aware of their responsibilities and its importance, not only to billing but resource management, ensuring traceability of failures and clear escalation of issues. Apathy in this area can quickly bloom into an enormous problem for the retailer, end user and wholesaler.

Wholesaler shared data remains a real issue within the market, catastrophically poor service levels, data granularity and timescales have in fact damaged smart metering as a solution. As it currently stands, a number of wholesale regions charge greater fees to retailers to share smart meter data than the retailer would pay for commercial AMR. Service levels as low as 30% have also been seen on offer. Whilst this may provide wholesalers with sufficient coverage for network management in the longer term, it is extremely difficult for a retailer or end user to accept a business case for this. Low volume users cannot justify the cost, and high volume users need far greater reliability and granularity to enable water efficiency.

There needs to be standardisation around data format and accessibility, and also greater transparency of the availability of data as this only became truly visible during Covid. We hope this will come out of the consultation work being commissioned by the Metering Committee on roles and responsibilities and enhancing metering technology.

GERARD LYDEN, HEAD OF MARKET AND SERVICE DEVELOPMENT, WHOLESALE MARKET SERVICES, THAMES WATER



We feel the basic design works well, with wholesalers responsible for "owning" the meter and retailers responsible for taking readings and making requests for work where it is required. However, there remain challenges in gaining access for both retailers and wholesalers and a limited supply chain for meter reading services, resulting in an increase in the number of unread meters.

PHILL MILLS, CHAIR, UK WATER RETAILER COUNCIL



Having correct and timely meter data is essential for the retail market, for retailers' business and for the NHH customers they serve. Retailers need to have meter data at the required level, frequency, and granularity – so they can then provide the billing service to customers and promote and facilitate water efficiency.

Since market opening there have been multiple issues with this process, including:

- The large number of meters that cannot be found.
- The difficulty reading some meters, e.g. those in busy highways.
- The large number of long unread meters – currently around 250,000 (MOSL data).
- The current bilaterals process for requesting works associated with meters.

The current average age for NHH meters is 25 years. There is a need for a replacement programme and a move to smart (or smarter) metering in the NHH sector. Since the meters are owned by wholesalers, not retailers, replacement of dumb meters with smart meters is dependent on the wholesalers. Currently four seem to be installing smart meters but predominantly on household supplies.

The top 25,000 NHH meters account for around 60% of NHH consumption. This equates to around 20% of total (HH and NHH) demand. These should be the starting point for a coordinated smart meter programme, together with the 'difficult to read' meters.

The technology involved with smart metering should also be agreed nationally. Current AMR installations adopt different technology solutions, meaning those requiring a 'manual' read cannot often be read because the meter reading contractor will not have that specific interface reader.

This complexity and lack of consistency across the country causes diseconomies of scale in terms of ability to offer services to customers and effectiveness of meter reading.

Retailers are spending more time, effort and money on metering-related issues than they should and therefore incur additional unnecessary costs. Retailers are also measured, and in some cases penalised for meter reading performance, some aspects of which are beyond their control.

PETER ROPER, CHAIR, MEUC (REPRESENTING MAJOR WATER AND ENERGY USERS)



Our members' experience on meter reading is very mixed. In two extreme examples shared at our July Metering Forum, one member said their metering experience had declined since the market opened while another said theirs had markedly improved since switching. More generally, customers who stay with the default retailer seem to be receiving lower levels of meter reading service (and wider customer service) than those who change.

Particular issues of concern to members include: difficulty locating meters; the persistent issue of long unread meters; poor metering technology compared with other utility sectors; data access frustrations; inconsistency across the market; and specific difficulties for mixed (HH and NHH) portfolio customers such as housing providers.

MARK DOHERTY, HEAD OF METERING AND BILLING, BUSINESS STREAM



Around 80% of meters across the market are being read regularly, which is positive. There are however a number of key challenges that need to be addressed if we are to create a metering landscape that is consistent across the whole market and that delivers accurate bills to all customers, all of the time.

Some of the key issues include inconsistencies in the technology used to read meters between wholesaler regions, with some using smart meters/AMR technology and others not; unclear roles and responsibilities between wholesalers and retailers (and inconsistent access to data); and inaccurate data which can cause issues, particularly post switch, when meters aren't where they are reported to be. In addition, approximately 15% of meters are currently in a long unread status, which means these customers are repeatedly receiving bills based on estimates rather than accurate readings.

Until these issues are resolved then the challenges around metering will remain. Work is underway to address some of these issues and there is growing evidence of cross-market collaboration to help identify solutions, including through the Strategic Metering Committee, but we need to do more.

SEAN LARKIN, HEAD OF WHOLESALE SERVICES, WESSEX WATER



The overall experience is good. Most commercial customers were metered prior to market opening and therefore much of the focus has been on maintaining the existing estate.

Most companies experienced teething problems at market opening on the installation of retailers' telemetry equipment. However, when put in context, this is a small proportion of the overall metering activity and as the market has matured, systems have developed to better accommodate these requests.

The area of greatest concern for us has been the frequency of physical meter reads and the impact on end customers. Since market opening, we have seen an increasing number of leaks going undetected as the overall frequency of meter reads has decreased. This, for clarity, was a trend observed pre Covid-19. For many customers the read and the associated bill are the first they will know that there's a leak on their supply. Leakage policies vary across wholesalers and even the most generous allowances will not insulate the end customer from the financial impact of a leak on their supply.

Retailers operating on small margins are unable to offer financial assistance and the market does not offer sufficient incentives or penalties for missed reads...

Unlike the energy market where the increasing use of smart meters is changing customer behaviour, few water customers regularly check their water meter. The market is bringing forward changes to allow more customer reads to be input. Whilst a positive measure, it will only be successful with greater customer engagement in the meter reading process.

PETE HOLLAND, DIRECTOR OF CUSTOMER AND WHOLESALE SERVICES, ANGLIAN WATER



We are seeing more and more appetite for data around consumption. It's clear from our trials in AMP6 the impact data can have on raising awareness and addressing customer side leakage. We have also had our Maximum Daily Demand Tariff for some time now. This includes a logger as standard and we can see the impact that has in helping to manage peaks.

We can see retailers really driving the need for more and more data and we've had brilliant input from retailers helping shape our NHH smart metering rollout plans. I think this demonstrates a real interest in the next generation of metering in water. While not a consequence of the opening of the market, balancing the need to exchange old or damaged meters with the impact on the customer continues. For example a school will always request for an exchange to take place during the holiday period so this may delay things, or a manufacturing company may require water 24/7 and plan limited outages to allow a meter exchange to be undertaken.

Spoilt for choice

There are many and varied ways we could improve NHH metering – what’s in the mix?

With satisfaction levels with metering arrangements today so mixed, different stakeholders will inevitably have contrasting views on what should be done to improve metering experiences – and how enthusiastically.

But setting aside the detail for a moment, and presupposing most will agree that the status quo is not the best possible outcome for customers, what are the options for action? What should the market look like in one, three or five years’ time? Here are some possibilities to ponder, to complement work streams underway already to minimise market frictions and reduce complexity.

■ **Technology consistency** – A coordinated and comprehensive approach to smart, smarter or (at least) consistent metering technology would answer what some see as an urgent need for standardisation to reduce complexity, cost and confusion. For customers and retailers, smarter technologies that provide frequent reads would also support better customer service, satisfaction, accurate billing and settlement, and tailored offerings. If accompanied by customer portals showing consumption information and billing amounts, advice, behaviour change support and incentivising tariffs, they could also drive customers towards water efficiency and waste reduction activities, with the associated benefit of energy and carbon savings. For wholesalers, smart or smarter meters would facilitate the more rapid identification of network leaks, more intelligent network management and infrastructure planning, improved settlement, and

more accurate demand forecasting. There would be lessons here from the energy smart meter rollout and specifically from SMETS2 cross-compatible meters which survive supplier switches.

■ **Common data standards and data sharing** – Developing a model or mechanisms through which all trading parties, customers and relevant third parties could have access to reasonably priced and high quality consumption data would actually solve a lot of the problems, regardless of who has meter reading responsibility and whatever the technology. At present, access to data can be difficult. Only trading parties have access to CMOS. Customers and retailers do not uniformly have access to wholesaler-held data at affordable prices, and funding bolt-on devices can prove prohibitively expensive.

■ **Roles and responsibilities** – There are many possibilities here. One possible option is to bring meter ownership and reading responsibilities together rather than to leave them separate. This joint responsibility could be placed with the wholesaler, retailer or a third party, as in electricity. Third party options bring their own considerations, such as how any such appointment would be made, how wholesalers might be compensated for their assets, and what service level agreements should be put in place. There are alternatives to full asset ownership too, such as leasing and cost sharing models. There could be special provision for the ownership and operation of bolt-on technologies like loggers.

■ **Performance incentives** – Incentives on trading parties to improve NHH metering could be strengthened. This could be:

»Via PR24 – PR19 was little focused on the business market. At the next review, Performance Commitments (PCs) and Outcome Delivery Incentives (ODIs) devoted to the NHH market could be introduced – for example relating to long unread meters, water efficiency, reducing tariff complexity and removing incentives for bulk supplies, and bills based on actual readings. Some of these PCs may also need to incentivise collaborative working between wholesalers and retailers to ensure the outcomes are delivered.

»Via the Market Performance Framework – market performance charges are dwarfed by ODIs in the domestic market, and capped thereby blunting the incentive on trading parties to do their level best. The penalties could be put on more of a par.

■ **Funding investment** – This could be stepped up significantly in parallel with creative thinking about mitigating bill impacts. Ofwat could allow for greater investment in NHH metering at PR24 and stipulate that meter replacement programmes are based on targeted criteria (such as meter size or location) rather than left as a numbers game. Alternatively, retailers could be funded to make metering investments by expanding margins at the next Retail Exit Code (REC) review in 2023, or by changing wholesale charging structures to give retailers more breathing space to invest.

On p7-9, stakeholders offer their views on priority actions, obstacles and funding routes.

Q1 What should be done to improve metering arrangements in the non household water retail market? What is your top priority action?

Q2 What are the main obstacles/challenges to achieving your top priority action?

Q3 Do you have any views on how improving business customer metering should be funded?

Q4 Any other comments?

SEAN LARKIN,
HEAD OF WHOLESALE SERVICES,
WESSEX WATER



1. The priority must be maintaining meter reading frequency. The question is whether this can be delivered within the current performance framework or whether a more fundamental change is required as to how metering services are provided. There was an active debate prior to market opening as to whether meter reading should be a wholesale or retail activity. In part the decision to include it as a retail activity was to increase the value of the retail business and therefore the potential margin available. There is a growing view that retailers see metering as an activity where the risk/cost outweighs any upside from revenue. It is difficult for smaller retailers or even larger retailers operating outside of their existing customer base to deliver reads at a cost that makes the activity profitable. This has led to some calling on metering activity to be transferred to wholesalers. Whilst there is weight to that argument, it will both erode the potential retail margin and the ability for retailers to differentiate their offering through innovative metering solutions. Whatever the argument as to the future of metering, the priority must be the end business customer.

2. The margins available to retailers are small and if we exclude the risk of bad debt, metering is for most retailers their biggest unit cost. There is a natural incentive to minimise the number of physical reads and the penalties for failing minimum services standards do not offer sufficient deterrent. Recent changes to market performance measures have arguably relaxed meter reading targets to the detriment of end customers.

3. However unpalatable this may be to policy makers and customers alike, margins may have to rise in the short term to pay for the improved service standards allowing a fully functioning market to evolve that should deliver value in the long term. Wholesalers can assist service improvements through funding water efficiency campaigns and incentives to better inform business customers as to the importance of monitoring consumption. More self reads should be encouraged, and business customers provided with information on meter reading performance to make informed choices about their retail provider.

4. There’s a wide range of charges being levied for meter related activity across the industry which is surprising given the fact that these should be generic activities. Ultimately charges levied should be cost reflective and competitive pricing is in everyone’s interest.

LOIS GILL,
HEAD OF REGULATION AND
COMPLIANCE, EVERFLOW WATER



1. The objective is to ensure that accurate and sufficient data can be obtained for all customers, to enable delivery of outcomes for customers and the environment. If the market is to deliver the necessary step change in service and water efficiency, we need to deliver smart metering. Our view is that wholesalers have so many other priorities and costs to balance, it is unlikely that increasing incentives for wholesalers will work, and we sympathise with them that they already have many other challenges to face. We see this as our (retailers’) challenge, but we need greater influence over resolving the problems. We are also concerned that wholesaler led metering programmes will always be inconsistent; failing to deliver consistency to customers. A single supplier is one of the things customers were promised from the retail market, and as a retailer that is operating nationally in a way that other retailers aren’t yet, we feel particularly conscious of how dependence on wholesalers in the area of metering services is driving inconsistency, complexity and ultimately increasing costs. Our ambition is to make things simple for our customers. We therefore think a change of meter ownership should be considered – probably not to retailers but rather to a third party owner who would serve both retailers and wholesalers as their customers. This could open up metering services to greater competition.

2. We feel strongly that delivering accurate consumption data at the right intervals in a consistent way for the whole market will be very difficult if separate wholesalers continue to maintain non-household meter ownership. We also feel that without smart(er) meters, we will not be able to resolve customer service challenges as effectively or deliver on water efficiency and environmental objectives.

3. There is no question that there will be a cost to improving business customer metering, although if the right solution is adopted, the benefits will result in many cost savings that would offset the initial increase in costs (e.g. cost of market frictions would be reduced; greater water efficiency would lead to cost savings; retailer debt could be reduced). It’s not a question of ‘if’ but ‘how quickly’ change should be made. We think funding should come through retail charges rather than wholesale charges; and that customers should be invited to influence the pace of change – which should then be applied nationally.

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Market performance charges are dwarfed by ODIs in the domestic market



**BARRY MILLAR,
OPERATIONS DIRECTOR, WATERSCAN
(REPRESENTING SELF-SUPPLY)**



1. Too much emphasis is placed on smart metering, innovative solutions and silver bullets. There simply needs to be a concerted approach to take meter readings at regular frequencies, identify which sites can't be accessed and why. This isn't a technological problem at its most basic, it's a labour one and for many parties, a cost benefit analysis one. If everyone is working to resolve LUMs and only the challenging ones are left that require wholesaler intervention, why are there not the volume of bilateral requests in the market to reflect that?

Where we do look to technological solutions, a single collaborative approach to wholesaler and retailer smart metering and data sharing is urgently required. This is expectedly piecemeal at the minute, but the ramifications are that we have actually seen smart metering damaging water efficiency progress and limiting data access for end users.

Our top priority action is to ensure long unread meters are managed to a net zero position, we currently operate at 1.7% of our managed estate.

2. There are two fronts to tackle here. The first is the physical aspect of metering, ie. meter access. This needs work from all parties – end user, retailer and wholesaler – as often the issues can only be solved in concert. It's our view that the retailer or in our case, WaterScan as the managing agent, is the lynchpin in this process.

Moving forward, a collaborative approach to data sharing is essential as smart metering becomes more prevalent. It is essential that this meets everyone's needs and is not simply the minimum viable product to meet wholesale needs. A disjointed approach could do more damage than good in the short term.

By the very nature of the MPF focus, there is a challenge in resolving some of the issues due to isolated responsibilities and the focus on timeliness of activities not quality. This needs to be far more collaborative with a combined effort to improve the customer experience.

3. Our concerns at the minute are actually on dual funding, where meter replacement is undertaken by the wholesaler as part of a routine replacement programme, an upgrade to smart meter occurs and a data sharing charge is levied for access where no third party access can now be granted. This doesn't feel right and in our experience has actually damaged data access.

Where we are discussing physical metering, I think given the modest levels of charging, it would not be unreasonable to expect large scale metering projects to continue to be integrated to price review cycles and part of the wholesalers' charging structure.

Retail margin will always feature here. It is recognised and widely accepted that providing enhanced read frequencies is still cost prohibitive at the majority of consumption levels within the market. This needs to be addressed.

4. MPS failures are incurred for late reads, thus exists a direct disincentive to adding additional market data and improving read and consumption data. Consultations seeking to reduce read frequency, and even to some extent to introduce more customer reads to market, could prove a double edge sword. They provide retailers with the space to operate more effectively, but could also lead to a decrease in reliable market data.

It is important to note that the direction of travel of smart metering, whilst broadly right, needs more thought, with a consumption based focus – i.e. larger users should be the priority, or potentially Water Resource Zone linked, not blanket approaches.

**GERARD LYDEN,
HEAD OF MARKET AND SERVICE DEVELOPMENT,
WHOLESALE MARKET SERVICES, THAMES WATER**



1. A move to smart meters utilising AMR and advanced metering infrastructure (AMI) would reduce the need to access premises to secure a reading and would provide more detailed, low-level data to support wider objectives for retailers, wholesalers and, most importantly, businesses.

2. In order to achieve what we'd like to see, there would need to be more funding for significant technology changes, along with firmer guidance and legislation from Government around standards on data sharing.

3. One potential source of funding is the five-yearly price reviews. Accounting for metering funding in these review would provide wider benefits not only to customers, but also society as a whole and the environment.

4. Advancing in this field will not be a fast process and it feels like we are on a journey that will take ten to 15 years. However, with a more joined-up, holistic approach this timeline could be reduced and the benefits to businesses could be seen sooner.

**PETER ROPER,
CHAIR, MEUC**



1. Greater consistency and standardisation is the top priority. MEUC members would like to see MOSL's Strategic Metering Review used to agree metering policies and strategies and then the deployment of these consistently across the country, including on the rollout of smart metering. Data, data quality, and when and how the data is presented is of chief concern. There must be consistent and open data standards to ensure accessibility, quality, reliability, timeliness and interoperability regardless of which supplier or wholesaler the customer is with.

Some members would also like to see metering arrangements similar to those in energy deployed in water: robust national systems where responsibility for metering is separately licensed and stands apart from both wholesale and retail. This provides consistency and interoperability.

Members would also like access to CMOS, and sharper incentives on meter reading, particularly concerning long unread meters.

2. The main concern is that the market will be left to drift with different wholesalers allowed to continue taking different approaches, resulting in ongoing complexity, cost and frustration. The market has got behind standardising bilaterals; it should do the same on metering.

3. While it seems counterintuitive for customers to support moves that will drive price rises, members accept investment will be needed if metering technologies are to be consistently advanced and think this would best be funded explicitly as part of the PR24 price review.

**PHILL MILLS,
CHAIR, UK WATER
RETAILER COUNCIL**



1. The top priority issue is access to metering data – the capacity, quality, and the cost. This applies both to the asset data (location, type, size) as well as the customers' consumption data.

2. Clearly the split between ownership of meters and responsibility for reading them causes issues. This is reflected not only in the additional bilateral process to resolve metering issues, but also by the diseconomies of scale caused by separating HH and NHH meter reading. There is an absolute need to replace ageing NHH meters. The cost of this is down to wholesalers, who have other priorities (and targets to reduce HH consumption) and limited funding. Whilst they are targeted to replace a specific number of meters, they are likely to focus on small and easier to replace HH meters rather than larger and more costly (to purchase and to replace) NHH meters.

3. Meters are assets owned by wholesalers. It is their responsibility therefore to replace them. There should be sufficient funding allowed for in the regulatory framework – specifically for NHH meters. Unfortunately the PR19 process did not engage with retailers or the NHH market and so these needs were not identified. The next opportunity is PR24 but that is too far away. There needs to be an interim solution. The REC (retail price) review is due in 2023 but funding by retailers would involve wider agreement and recognition in the regulatory frameworks for wholesalers and retailers of ownership responsibility. There are other options for meter asset ownership. These were discussed at a recent UKWRC-MOSL metering workshop and were passed to the Metering Committee for consideration.

**DR MIKE KEIL,
DIRECTOR OF POLICY, RESEARCH AND
CAMPAIGNING, CCW**



1. The overarching priority across the market is better, more accurate data as this will support improved customer experiences. Metering, and the retailers' approaches towards obtaining readings, is clearly an essential factor in achieving this. Retailers and wholesalers should continue to target long unread meters. Metering standards, such as minimum read frequencies, must not be eroded and should be enhanced, if necessary, for variable users. A longer term goal is the wider rollout of smart metering technology for business customers with customers with long unread meters prioritised.

2. Some retailers may not be prioritising reading low consumption meters due to concerns over a high cost to serve those customers. This continues to degrade data quality and increases the risk of inaccurate billing. A smart metering programme which prioritises low consumption customers could meet this challenge by potentially reducing the cost to serve.

The current Market Performance Framework does not adequately incentivise retailers and wholesalers to make the significant improvements needed to improve data quality. Reforms of this framework need to continue apace.

3. As a robust and accurate metering asset base – including increasing the numbers of smart meters – is a priority, wholesalers are responsible for the bulk of the funding. While there are costs associated with this, the bigger picture needs to be considered which links metering with the pressing need for reducing water consumption among all customers.

Attention needs to be paid to designing incentives which drive down consumption. Through the price review wholesalers should be incentivised to give appropriate attention to business customers, with the priority on smart metering. In addition, incentives should be considered for retailers that aim to drive down consumption among all customers, and spur retailers to increase their meter reading performance. This should be tailored for different customer segments that encourages retailers to place effort on low to medium water consumption, rather than focus just on the few very high water users. This way retailers have the opportunity to be rewarded for delivering outcomes that benefit the whole water sector and help to address the huge challenges faced by climate change.

4. We are concerned at the focus by some retailers and MOSL on low retailer margins in terms of meter reading, without proper consideration as to how this would affect customers. The focus should be on creating a metering strategy that delivers improvements and benefits for customers and the market, and not just improving retailer margins. That is particularly important given the high number of complaints from customers about inaccurate bills.

**PETE HOLLAND,
DIRECTOR OF CUSTOMER AND WHOLESALE
SERVICES, ANGLIAN WATER**



1. At the moment our top priority is getting lots of NHH smart meters in the ground in areas that we need them the most. Alongside this, it's working with retailers to share the data to help them work with their customers to reduce consumption, increase water efficiency and tackle leaks.

We're starting our testing with retailers on smart data sharing in September, so it's exciting times. Since April we've installed 4500 NHH smart meters and we aim to install 10,000-15,000 per year by the end of 2025. We would also like to see the Accredited Entity (AE) scheme expand into this area.

2. From a replacement meter perspective, the biggest obstacle is the logistics of making all your meters smart. For us it means replacing over 1.1m meters across household and NHH customers. That's about 750 a day which is no small feat. As a pioneer in this area we are looking to share smart data as a standard solution that will suit all retailers. With large volumes and frequencies of data, this needs to be structured to ensure that they can accept, store and analyse it to provide customer benefit.

3. In our region our customers feel strongly about tackling leakage and having secure water supplies for the future. Building this case through pilots such as in Newmarket where over 12 months the town's water consumption reduced by 8% and then finally putting the case forward in the AMP business plan. Economies of scale are important and the most cost effective way is to do it across both domestic and NHH customers.

4. From our retailer consultation on smart metering, it became clear that retailers didn't want multiple regional solutions. Therefore we recognise the importance of working with MOSL to help standardise the approach and get a future proof system. The challenge is, at what point do you invest in changes to the market? MOSL have an important role to play on this.

**MARK DOHERTY,
HEAD OF METERING
AND BILLING, BUSINESS
STREAM**



1. From a market perspective, the priority should be to develop a clear, market-wide strategy and delivery plan around the technology required to read meters accurately. In addition to providing customers with accurate bills, metering can also help to deliver environmental benefits by encouraging customers to understand their water use and use water wisely. We've seen some success with smart meters/AMR but they aren't used across all wholesaler regions, leading to complexity and inconsistency for customers.

From our own perspective, we are committed to continually investing in and working with our partners to enhance our meter reading capabilities. Our longer-term priority is to have the appropriate technology in place to help support a reduction in water usage across the non-household sector. Our more immediate focus is recovering meter reading services post Covid-19. Our focus is to ensure we can obtain as many meter readings as possible, while continuing to reduce the number of long unread meters.

2. Gaining access to read internal meters, when many businesses remain closed continues to be a challenge, although one that is thankfully improving. In terms of tackling long unread meters, one of the challenges we face is the inconsistency between wholesaler regions in terms of support in locating and/or repairing meters that are damaged. Again, a more consistent and pro-active approach across all wholesaler regions would be beneficial. We need to ensure that the incentives on wholesalers – through their price controls and through the MPF – are aligned with the delivery of the best outcomes for customers.

And from a water efficiency perspective, the key obstacle is the limited availability of AMR/smart metering technology across the market and the inconsistent approach from wholesalers to provide access to that data.

3. It seems clear that smarter metering, in some form, and increased access to metering data will be essential enablers for delivering more accurate bills, an improved experience for customers and greater water efficiency in the non-household retail market. How this is done most cost effectively, and by whom, needs to be explored further. Whilst metering assets have historically been funded through the wholesale price controls, and meter reading through the retail price controls, the forthcoming retail and wholesale price reviews provide an ideal opportunity to review the role of wholesalers and retailers and to ensure that the balance of funding is appropriate for delivering an effective market-wide metering strategy.

4. There are a number of challenges around metering that need to be addressed if we are to deliver a market that meets the needs of customers both today and in the future, and we must work together to create a consistent, technology-led approach across the market to ensure these issues are resolved.

Treasure for measure

How might future investment in NHH metering be approached? Ofwat's Georgina Mills and David Watson share some thoughts.

Q: How extensively did water wholesalers engage with retailers/business customers to assess NHH market metering needs for their PR19 business plans?

A: We expect water companies to engage with all stakeholders in order to make sure that their plans and ongoing delivery reflect customers' (both HH and NHH) identified needs and priorities, including on metering.

When we published the PR19 final determinations, we strongly encouraged water companies to start thinking about how they could work effectively with business retailers in developing their Water Resource Management Plans (WRMPs) ahead of PR24, including to better understand the costs and benefits of various options for improving NHH metering.

Q: How much investment did companies seek for NHH metering improvements at PR19 and how much funding was allowed?

A: At PR19 we accepted companies need to replace NHH meters (including upgrades from basic to smart meters), install metering at new NHH service connections and install meters at a limited number of existing NHH properties that did not have an existing meter. We assessed NHH metering together with HH metering and therefore cannot report NHH specific requests and allowances.

PR19 funded renewal of 180,000 NHH meters. Based on information provided by the water companies, at least 78% of these renewals related to replacement of basic meters with smart meters. In addition, Thames Water identified 55,000 further NHH meter upgrades (from basic to smart) to be funded by shareholders. 11,000 further NHH meter upgrades (from basic to smart) were funded through the green economic recovery.

Q: The case for better metering in the NHH market seems to be growing in urgency (on billing, customer service and water efficiency grounds). Does Ofwat agree?

A: We agree that NHH customers need timely, accurate and sufficiently granular data on their consumption, as well as bills that accurately reflect consumption. We remain concerned that too many customers are still experiencing difficulties obtaining accurate and timely meter reads and bills.

We also agree that timely and accurate consumption data is key to enabling customers to

understand and manage their consumption. We have clearly set out our expectation that water companies and business retailers need to deliver improved levels of water efficiency in the NHH sector. Furthermore, we expect water companies to consider interventions to reduce NHH demand when developing best value WRMPs to ensure long term resilience to drought.

Better metering can therefore help to deliver improved outcomes for customers and the environment. However, there may be a number of ways to deliver better metering, including – but not limited to – upgrades to metering infrastructure. For example, better and wider use of customer meter reads and better sharing of water company meter read data could also help. We note for example a core principle of Anglian Water's smart meter upgrade programme is that smart meter data must be simple to access and easy to use.

Q: What is Ofwat's view on how any future investment in improving metering in the NHH market should be managed within the regulatory framework – i.e. at PR24 or at the 2023 REC Review or another route?

A: Our primary concern is to ensure that any investment programme or regulatory interventions are cost effective and deliver improved outcomes for customers and the environment.

As set out above, there may be a number of ways to improve metering, including – but not limited to – upgrades to metering infrastructure. We would like to see water companies work closely with business retailers to identify and better understand the costs and benefits of various options to improve NHH metering, with the aim of identifying solutions that deliver the biggest net benefits for customers and the environment.

In previous price reviews we have recognised that installation of smart meters can provide benefits over a basic meter, such as enabling the company to better understand leakage from customers' pipes and support detailed engagement with customers regarding water efficiency. Meter installation and upgrade, for HH and NHH properties, is one of a number of interventions we expect companies to consider in producing WRMPs and business plans.

We also welcome MOSL's strategic review of NHH metering initiative, which sets out a range of 'quick wins' designed to help improve data quality, many of which are expected to be delivered via changes to the market codes. This review will also explore longer-term options for

wider-ranging changes to current arrangements for NHH metering.

Q: How best could wholesalers or retailers, or trading parties collectively, make a case for NHH meter investment with Ofwat?

A: We would refer stakeholders to both the latest version of the WRMP guidance and our recent consultation document on our approach to PR24. Both documents outline our expectations that investment plans should deliver outcomes for customers and the environment at best value over the long-term.

In developing plans, we encourage water companies to work collaboratively with business retailers to provide robust evidence of efficient costs and benefits the investment will deliver. In the context of benefits, companies should consider how they can generate public value through investment, taking account of social and environmental impacts.

Where companies propose to go beyond the standards in their statutory obligations, they will need to demonstrate customer support. This is consistent with the approach we used in PR14 and PR19 and allows customers to fund improvements which they support. Business retailers may be well placed to work with water companies to better understand the needs of NHH customers, including their willingness to pay for meter upgrades.

Q: Might Ofwat consider the benefits/cost savings resulting from better metering as part of the business case – e.g. lower 'market friction' costs, lower retailer debt, cost savings from greater water efficiency?

A: We encourage water companies to work collaboratively with business retailers to identify and assess the full range of costs and benefits associated with various options to improve NHH metering. For example, resolution of market frictions is expected to reduce costs for business retailers, whilst also delivering benefits for customers. Similarly, improved water efficiency can deliver environmental outcomes, save customers' money whilst reducing costs for water companies.

Q: Are there any factors weighing against more investment in improving NHH metering through the regulatory framework? What are they?

A: We welcome MOSL's strategic review of NHH metering initiative and expect that review to explore this question in more detail.

• **Georgina Mills is director, Business Retail Market, and David Watson is principal, water engineer, Company Performance & Price Review at Ofwat.**

Coordinating a response

John Davies makes the case for an outcomes-driven, collaboratively-determined future metering strategy, and provides an update on MOSL's Strategic Metering Review.

The fact that just 3% of customers consume around 70% of the water in the non-household market – or around 20% of the country's water – is a jaw-dropping statistic. And a massive opportunity. If we can influence the water usage patterns of the top consuming NHH customers – and potentially all customers in water scarce areas – it could make a big difference to the water efficiency challenge, not just in the NHH market, but nationally.

To do so we need to have a detailed view of how and where water is being used – which places the spotlight squarely on metering. Although it may be tempting to jump to the conclusion that the answer is simply to roll out smart meters as quickly as possible, it isn't that simple.

The priority is to agree what the market needs to deliver in terms of leakage reductions, water efficiency, improved billing/settlement and offering innovative services to customers – then agree the approach or technology, whether that's improving the meter reading process, logging certain customers, AMR metering or – yes – smart meters. It depends how far we want, or need, to go.

And while considering the future, let's not forget the present and the fact that we are a long way off our meter read frequency targets, so anything that increases meter reads in billing systems and CMOS will be good news for customers and settlement.

We also need to agree how it might be funded and whether the HH and NHH market need different funding models. Could wholesalers roll out smart metering by geography to maximise economies of scale, while retailers are funded to roll out appropriate smart technology to the more geographically dispersed non-household customers, or maybe just the top 2-3%?

The first thing to do is agree what we're trying to achieve and how quickly we want to get there. That's going to take a lot of coordination, which MOSL is happy to manage in collaboration with the Metering Committee.

Our starting point is 'Is doing nothing an option?' Almost certainly 'no'. Are we striving for a world in which we understand consumption, can apply the right solutions for water efficiency, can quickly identify customer side leakage and where retailers can offer innovative services to meet customer requirements? In



John Davies is CIO at MOSL.

an ideal world, 'yes'.

Alternatively, is there a different way to get the granular consumption information, whereby the metering estate remains broadly as it is, and we use advanced data analytics to better estimate/predict consumption based on a subset of smart meters and advanced data analytics?

These are among the many questions that we need to answer as a market, which is why we are appointing consultants to do a detailed options analysis of two strategic themes – roles and responsibilities and enhanced metering technology.

What we know is that WRMP and PR24 will play a pivotal role in determining the nature and scale of funding for the next AMP and that the clock is ticking. The research phase, including getting trading parties' input, is due to begin in October and the reports are due in January – at which point we can have a well-informed discussion about the way forward.

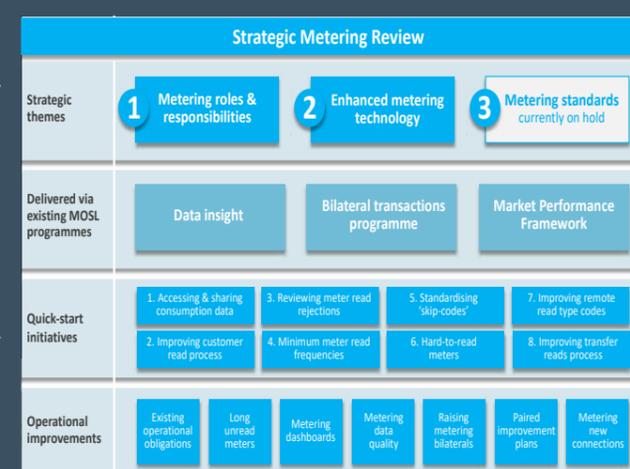
In the meantime, we are continuing to push ahead with the various Strategic Metering Review workstreams, including a number of 'quick start' initiatives, many of which are being led by trading party members of the Metering Committee (see box).

Please get in touch if you would like to discuss anything I have talked about, otherwise we will be in touch again in due course!

“The first thing to do is agree what we're trying to achieve and how quickly we want to get there.”

THE STRATEGIC METERING REVIEW

The Strategic Metering Review encompasses a number of workstreams, including two strategic themes and a series of 'quick start' initiatives, many of which are sponsored and led by trading party members of the Metering Committee. The outcome will be a series of market improvement change proposals and process strengthening recommendations with a focus on accurate and timely consumption data.



Metering's moment

NHH metering clearly needs attention ahead of the next regulatory rounds – with the best outcomes likely to be found by working together.



Even those who are relatively happy with the status quo must be able to see that it's not sustainable or desirable for other key stakeholders to be so disgruntled

So where does all this leave us? Clearly there are a million things the market could do to improve metering. Judging by our stakeholder comments, on top of carrying on with in-flight activities to make things better in the short/medium term, the key target areas for more concerted action include: upgrading technology, promoting consistency, granting data access and sharing, changing established roles and responsibilities, and increasing incentives and margins. But all of these things need to be worked through. Perhaps the more pertinent question is, what should we do now?

A starting point is to consider what everyone can agree on. First, the negatives. This is a multi-faceted challenge. There is no silver bullet. Upgrading meter assets will come at a cost. Metering itself is not a panacea and would need to be accompanied by other initiatives, such as water efficiency support, to get the best out of it. Different stakeholders are at different starting points, with varying things to lose/gain from change.

But more positively, it is hard to see metering as anything other than an important issue that deserves the full attention of the market. Even those who are relatively happy with the status quo must be able to see that it's not sustainable or desirable for other key stakeholders to be so disgruntled – particularly customers who are supposed to be the beating heart of the whole competitive proposition. If everyone could look at this from an outcome perspective rather than getting stuck on individual challenges, we could make quicker progress.

URGENCY AND FRESH THINKING

And speed is of the essence or we will miss the boat for the next round of WRMPs and the wholesale and retail price reviews. That would almost inevitably mean stagnation until much later in the decade, by which time climate related challenges will be sharper, net zero water sector targets will be looming, some retailers will likely have

packed it in, and customers will be more frustrated.

It seems pretty plain that some fresh thinking on the future of metering in the NHH market is needed. Not least because the world has changed since the last round of regulatory settlements and our understanding of the market has matured. That fresh thinking will be best developed as a joined up, industry wide response. Whatever routes the market decides to pursue, consistent messaging to feed into WRMPs, PR24 and the Retail Exit Code Review, which will consider the current approach to the price caps affecting most customers, will be more powerful than a disparate array of diluted voices.

Again it seems plain that to reach an industry wide position, trading parties and other stakeholders will need to collaborate to identify common goals and objectives and to prepare solutions. As CIO John Davies sets out on p11, MOSL is well placed and willing to help coordinate this response, and has a capable and experienced team under programme lead Martin Hall and market improvement lead Simon Bennett to confidently undertake the work.

COST BENEFIT CASE

Ofwat gives a strong steer on p10 that in its view, that work won't all be about technology. Getting more reads into the market ASAP and data sharing are very much part of the picture. However it is hard to escape the conclusion that smarter technologies are going to play a big part and that investment will have to be stepped up. Questions on that really concern when and how, rather than if.

It seems likely that the answers will be cost benefit driven rather than blanket, particularly as the business customer base is so skewed. Investment cases will need to be justified with evidence. Ofwat has openly set out its expectation that wholesalers will work with retailers to understand the costs and benefits of the various options to improve NHH metering and incorporate these into WRMPs and business plans. It worthy of note, too, that guidance for both elements states the goal is long term best value for customers and the environment rather than short term least cost.

Nor should we shy away from thinking creatively about funding investment rather than blindly following traditional routes. The world has changed. Mitigating bill impacts will be important. And if retail market roles and responsibilities are to be reviewed, the door could be open at the next wholesale and retail price reviews to try new things. Indeed more broadly, the confines and relative safety of the NHH market could be viewed as a good space to experiment with metering choices that may subsequently have value in the domestic space.

Without getting bogged down in the detail, the takeaway message on metering is: do something, and act now.