



Being Smarter with Data and Metering



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CORNWALL INSIGHT
CREATING CLARITY

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We offer a range of capabilities to support utilities through the energy transition, including:

Metering & data expertise

Secure delivers complete range of solutions across the energy measurement ecosystem, helping utilities to obtain accurate, reliable, and timely visibility of energy flows, system conditions, assets, and consumers. This trusted data forms the foundation for effective operational, commercial, and regulatory decision-making.

Actionable insights

By combining domain expertise with advanced analytics, Secure helps utilities transform complex operational and metering data into practical insights that unlock hidden value, improve efficiency, and support better decision-making.

Enabling energy transition

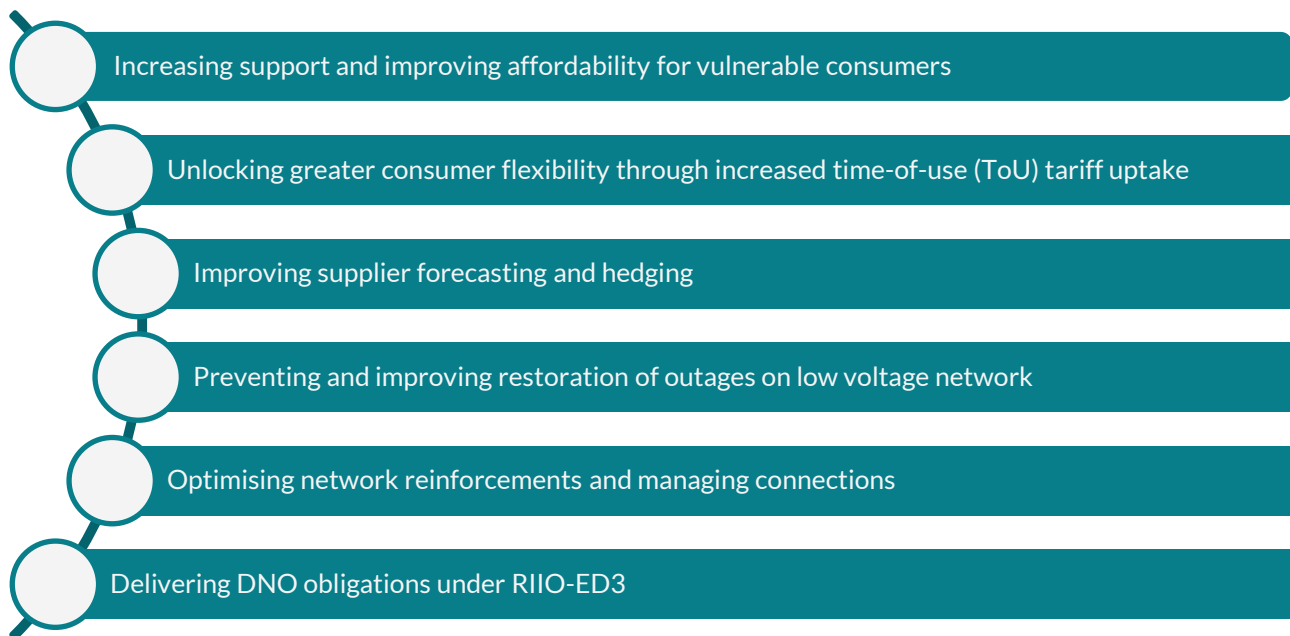
Secure believes that stepwise, actionable insights integrated into modern IT systems can drive whole-system change, helping utilities successfully navigate the energy transition and deliver long-term value to customers and stakeholders.



Executive Summary

Smart meters and smart meter data have the potential to deliver a wide range of benefits across the energy value chain, from consumers, to suppliers, to distribution network operators (DNOs). However, the ongoing rollout of smart meters in GB has come at significant cost and been subject to multiple delays. In this report, based on a combination of independent research and conversations with market experts, we therefore consider what needs to be done to fully unlock the benefits of the smart meter rollout and maximise the value for money.

Key operational use cases to unlock the value of smart metering across market participants include:



Alongside the identified operational use cases for unlocking the benefits from smart metering there are also a series of structural barriers that need to be overcome to support these use cases:



Granularity and accessibility of data - a regulatory pathway to increase DNO access to unaggregated data, balanced with consumer data protections, is essential to broaden use cases.



Capacity to utilise the data - integrating smart meter data into operational workflows and platforms, alongside regulatory incentives for standardised data pathways and frameworks could encourage upgrades to DNO capabilities and systems to process increasing volumes of smart meter data.



Geographical variability in data density - improved communication infrastructure and monitoring to fill geographical data gaps, alongside minimum expectations for intranetwork monitoring of low voltage networks.



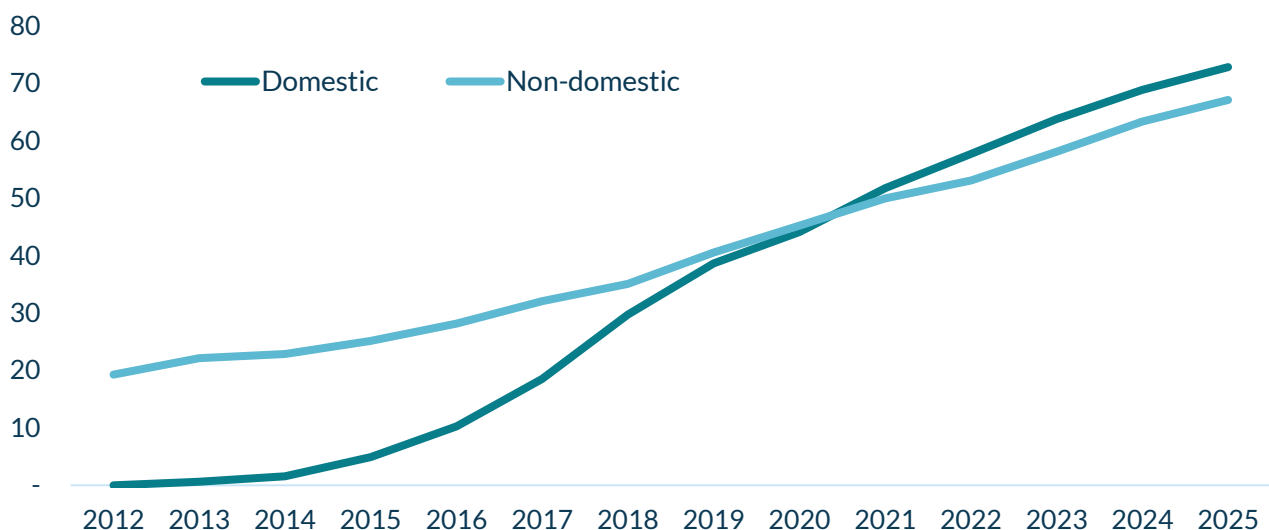
Data Communication Company (DCC) 'accountability gap' - incorporating the DCC within performance standards and replacing smart meter installation targets with performance targets will improve accountability.

The Transition to a Smarter Market

With the UK transitioning towards the targets of clean power by 2030 and net zero by 2050, the rollout of smart meters and the greater access and utilisation of smart meter data can play a key role in enabling the transition and delivering value for the entire energy value chain from consumers to suppliers to network operators.

As of March 2026, 72% of domestic electricity meters and 67% of non-domestic electricity meters in GB were smart or advanced meters,¹ with market penetration of smart meters having grown by a consistent 1-2pp. per quarter in recent years (Figure 1). The ongoing rollout of smart meters is crucial to facilitating the transition to market-wide half-hourly settlement (MHHS), whereby all suppliers will have to trade based on their customers' actual usage rather than data derived from standard consumer profiles. The migration of meter points onto MHHS has already begun and is set to run until May 2027, with a Cornwall Insight survey of market participants indicating that 80% are very or somewhat confident that their organisation will be ready for MHHS as planned.²

Figure 1: Domestic and non-domestic penetration of smart and advanced meters (%) 2012-25



Source: DESNZ

Whilst the smart meter rollout can deliver numerous benefits to market participants across the energy value chain (Figure 2), it comes at significant expense, with the National Infrastructure and Service Transformation Authority (NISTA) estimating in its Annual Report 2024-25 that the whole life cost of the Smart Metering Implementation Programme would be £20.2bn.³ Additionally, DESNZ estimated in its Post 2025 Smart Metering Policy Framework that delivering 100% smart meter rollout by 2030 would cost £1.7bn (in 2025 prices), although it did also highlight that the estimated benefits of the rollout by 2030 would be £3.6bn.⁴

¹ [Department for Energy Security and Net Zero \(DESNZ\)](#)

² Survey conducted as part of Cornwall Insight's 2025 Annual Conference, with attendees asked: "How confident are you that your organisation will be ready for MHHS as planned?"

³ [NISTA](#)

⁴ [DESNZ](#)

Figure 2: Benefits from the smart meter rollout and relevant market segment

Benefits	Market segments
More targeted support for vulnerable consumers	Consumers
Facilitating consumer demand side response (DSR) and greater rollout of smart appliances and low-carbon technologies	Consumers
Improved access to flexibility markets and benchmarking of flexibility provision	Consumers; Network operators
More accurate forecasting of demand and purchasing of energy	Suppliers
Improved detection of meter tampering and reduced energy theft	Suppliers
Optimising network upgrades and reinforcements	Network operators
Improved network reliability and reduced customer outages and disruption	Network operators
Facilitating delivery of regulatory price control requirements and incentives	Network operators
Better understanding of distributional effects of policy/regulatory decisions	Policy makers

Source: Cornwall Insight research

Given the high costs to consumers and energy market participants from the smart meter rollout the question is what needs to be done to fully unlock the benefits of the smart meter rollout and maximise the value for money?

In this report, through a combination of research and conversations with market experts, we consider some of the key operational use cases for smart metering and smart meter data, the structural barriers to delivering these use cases and what market participants can do to capture the greatest value from smart meter data.



Operational Use Cases

In this section we explore some of the key operational use cases, identified through discussions with market participants, which can be delivered by smart metering, the benefits that these use cases can provide, the data needed and how the use case fits into wider policy and regulatory frameworks.



“An active market proposition is needed to avoid households [in fuel poverty] being the rump that gets swept up at the end”

- Adam Scorer, NEA

Increasing support and improving affordability for vulnerable consumers

A primary use case for smart metering is the support it can provide for more vulnerable and low-income consumers. The affordability benefits for vulnerable consumers include both those that they experience directly as a result of having a smart meter and those that are delivered indirectly through suppliers as a result of the insights provided by smart meter data.

Impact of smart metering

Colin Griffiths, Policy Manager at Citizens Advice, highlighted that prepayment (PPM) customers are the group that already sees the greatest uplift in positive opinion when comparing their experience under a smart meter to their experience beforehand. This uplift is attributed to the direct benefits that PPM customers receive from smart metering such as being able to access remote top-up and use an app to manage their energy usage, as well as more information on what and when they are using energy. Alongside the direct benefits of a smart meter that are already being realised for many PPM customers there are also indirect benefits, with Adam Scorer, Chief Executive at National Energy Action (NEA), highlighting the role that smart meter data can play in suppliers being able to better support vulnerable customers. Adam added that the current smart tariff market does not support households in fuel poverty and “an active market proposition is necessary to avoid these households being the rump that gets swept up at the end”.

Delivering the use case

One of the options for better supporting vulnerable consumers, as outlined by Adam Scorer (NEA), is the use of smart meter data to better understand vulnerable user consumption patterns, therefore potentially allowing suppliers to identify anomalous usage or areas of concern, opening up “the opportunity for direct intervention at the point of crisis as opposed to weeks later when the consumer gets in touch”. This would primarily be applied to consumers already known to be vulnerable, e.g., those on debt pathways, on the priority services register, PPM customers who have repeatedly applied for emergency credit, etc.

Additionally, smart meter energy usage patterns and cross-referencing with other datasets may allow for the identification of customers who are not already known to be vulnerable and facilitate the quicker provision of targeted support. UrbanTide's uZero project used anonymised and aggregated smart meter data, alongside other datasets, to identify regional fuel poverty levels, with the research showing strong consistency with those areas already identified as fuel poor through independent surveys, as well as highlighting additional areas where fuel poverty may be higher than previously known.⁵ However, Colin Griffiths (Citizens Advice) notes that this approach would need to be handled with care as the nature of energy debt has the potential to make the approach of a supplier, however well intended, appear antagonistic.

Alongside using smart meter consumption data to provide targeted support for vulnerable consumers, Adam Scorer (NEA) highlighted the value in combining smart meter data with social or health and well-being data to determine the broader value and benefits from smart meters. Adam suggested that analysis of energy consumption patterns alongside self-reported health data (e.g., frequency of asthma attacks, number of trips to the GP, etc.) could help showcase the "wider social benefits of smart meters and smart meter-enabled tariffs". Related to this, on 26 January 2026, the Department for Science, Innovation and Technology announced the launch of five new projects to test how connecting data from across energy, social care, legal records and weather could potentially deliver consumer benefits.⁶

Implementation actions

- **Facilitating real-time usage insights and more flexible payment methods for vulnerable consumers, particularly those on prepayment tariffs.**
- **Analysing consumption data for known vulnerable customers to identify anomalous usage patterns or areas of concern and allowing suppliers to provide pre-emptive support. Could also be extended to identifying struggling consumers who are not already known about and allow quicker provision of targeted support.**
- **Combining smart meter consumption data with wider social, health and well-being data to better understand the broader benefits to smart metering and facilitate more holistic support for vulnerable consumers.**

Unlocking greater DSR through increased ToU tariff uptake

One of the most often reported use cases to the transition to MHHS and the smart meter rollout is the potential to unlock greater DSR from consumers. The National Energy System Operator (NESO) estimates that there could be ~40-80GW of DSR by 2050 under the net zero pathways in its Future Energy Scenarios.⁷ DSR can be unlocked through both explicit signals (e.g., emerging balancing contracts aimed at end users such as the Demand Flexibility Service)⁸ and implicit signals, such as the offering of ToU tariffs.

⁵ [UrbanTide](#)

⁶ [Department for Science, Innovation and Technology](#)

⁷ [NESO](#)

⁸ [NESO](#)

Unlocking DSR through ToU tariffs can help reduce system costs and bring down consumer bills. Ofgem's 2025 State of the Market report indicated that whilst there was a 68% growth in the number of domestic customers on a ToU tariff in the 12 months to July 2025, they still only account for 2.8% of the domestic market.⁹ Additionally, data from [Cornwall Insight's Electric Vehicle \(EV\) Insight Service](#) highlights that 78% of the ToU tariff market in 2025 was made up of EV-specific tariff customers, indicating a low level of ToU tariff uptake for other low-carbon technologies.¹⁰ Although, analysis from [Cornwall Insight's Domestic Tariff Report](#) outlines that, whilst there is still only a relatively small number of non-EV-specific smart tariffs available in the market (18), this has significantly grown recently, with eight of these launched in 2025.¹¹

Impact of smart metering

Greater uptake of ToU tariffs coupled with other low-carbon technologies is facilitated by the smart meter rollout, with Neil Slater, Head of Trading at So Energy, noting that smart meters are the "springboard or foundation" to greater use of connected technologies in households. Suket Singhal, Group CEO at Secure Meters, added that smart meter data can help suppliers to produce "narrower tariffs which reduce the cost of energy for consumers without affecting suppliers' margin", encouraging more innovative tariff offerings and the new opportunities that they unlock. A Cornwall Insight survey of market participants also indicated that the development of more ToU tariffs and tailored solutions to encourage greater deployment of consumer low-carbon technologies is seen as the area of greatest potential for smart meters in the coming years (Figure 3). Increased data access on the distribution network can also help the development of flexibility programmes, which was the focus of the 2017-25 Open Networks programme.¹²

Dinesh Bansal, Metering Data Manager – NEM and EMB Market at Secure Meters (Australia), outlined how new rules on Flexible Trading Arrangements in Australia¹³ (which are set to be active from November 2026) are an example of how greater innovation and consumer choice in the supply space could potentially be unlocked. The new rules, which are contingent on consumers having smart metering, are intended to allow large energy consumers to engage multiple energy service providers to maximise the economic gains from the various low-carbon technologies deployed. This opens the door for different energy assets (e.g., solar

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Smart meters are the “springboard or foundation” to greater use of connected technologies.

- Neil Slater, So Energy

⁹ [Ofgem](#)

¹⁰ [Cornwall Insight - EV Insight Service](#)

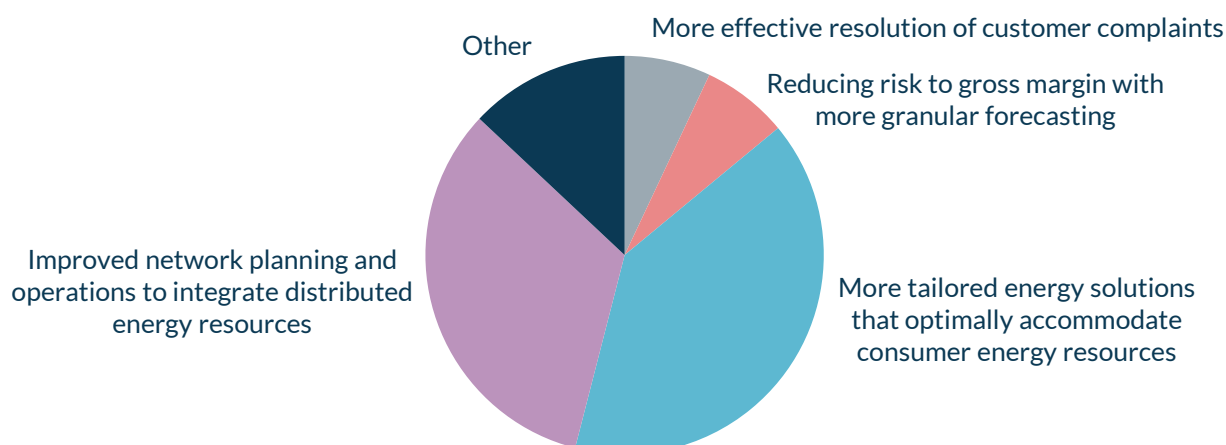
¹¹ [Cornwall Insight - Domestic Tariff Report](#)

¹² [Energy Networks Association](#)

¹³ [Australian Energy Market Operator \(AEMO\)](#)

panels, EVs, etc.) to be managed separately, helping consumers to get more out of their investments in low-carbon technologies. By moving away from the traditional model where a single supplier manages all services at a site, the Flexible Trading Arrangements are expected to support new commercial models, drive competition and innovation and give consumers greater visibility and control over how their energy assets are used and traded.

Figure 3: Survey response breakdown for the question “Smart meter data can be used to create new customer experiences and improve operations. Which areas offer the greatest value over the next three years?”



Source: Survey of Cornwall Insight's 2025 Annual Conference attendees

Delivering the use case

Unlocking greater ToU tariff uptake and the DSR that this can enable requires a two-fold approach. The use of consumption data to develop and deliver more innovative and tailored tariffs and simpler and clear visibility of the financial benefits to encourage greater consumer uptake and engagement.

On the first of these, Suket Singhal (Secure Meters) outlined that creating more archetypes¹⁴ for residential consumers (segments) will allow for “energy products to be better tailored to fit different household needs and levels of engagement”. Increasing the number of archetypes allows for more innovative tariffs to be developed for specific customer cohorts (e.g., EV owners, off gas grid customers, night shift workers, etc.) and is facilitated by combining half-hourly consumption data with additional demographic information.

Suket also noted that combining an increased number of archetypes with more “fit and forget” systems can deliver energy solutions and products that best match customer need and help unlock more DSR through passive signals. Other market stakeholders also highlighted that many customers are time poor and so reducing how much interaction they are required to have and increasing how much can be managed in the

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Combining more archetypes with “fit and forget” systems can deliver solutions and products that best match customer need.

- Suket Singhal,
Secure Meters

¹⁴ Groupings of consumers based on shared attributes that impact energy usage patterns

background or programmed in advance allows consumers to engage if they wish but also allows the rollout of smart technologies to less engaged customers.

Alongside innovation in ToU tariffs, another key component to greater uptake is through delivering affordability benefits to consumers. Andrew Gore, National Segment Head – UK & Ireland at Secure Meters, suggested that case studies of what the financial benefits on energy bills could be for households can help improve consumer uptake. Andrew added that focusing the case studies on examples from the local area could make them more relatable for many households. It should be noted that Smart Energy GB regularly run campaigns to help highlight the financial benefits of smart meters for households and encourage more flexible use of electricity to save money.¹⁵ Michelle Little, Head of Propositions at So Energy, emphasised that alongside making clear the financial benefits of smart meters, drawing comparisons with other smart technologies that people already have in their homes (e.g., smart TVs, smartphones, etc.) can help make the technology more relatable and reduce hesitancy to get one.

Implementation actions

- Using smart meter consumption data and consumer demographic data to develop and tailor more consumer archetypes.
- Increasing the focus on ‘fit and forget’ systems to drive greater ToU uptake and DSR amongst less engaged consumer groups.
- Highlighting and quantifying the financial benefits that ToU tariffs and DSR can provide to consumers through case studies and local examples.

Improving supplier forecasting and hedging

For suppliers, MHHS and the rollout of smart meters are more than just a regulatory milestone, they will fundamentally reshape cost drivers and risk exposure, with one of the main use cases being the reduction in imbalance costs and improved hedging as a result of improved forecasting.

Impact of smart metering

Half-hourly smart meter consumption data across all consumers gives much greater visibility over demand usage patterns and reduces reliance on archetype profiles. For suppliers with robust analytical capabilities the more granular data can help improve the accuracy of demand forecasting and enhance hedging precision. Improved forecasting accuracy and hedging lowers supplier exposure to imbalance, delivering a structural improvement to margins. This is a particular opportunity for suppliers whose portfolio is rapidly evolving or for whom a high proportion of consumers are diverging from typical usage profiles (e.g., a user base with lots of EV owners). Shorter settlement timescales will also give suppliers certainty of position sooner and reduce the amount of collateral they need to provide.

Delivering the use case

Unlocking this use case requires robust analytical capabilities, with legacy forecasting models or fragmented data architecture potentially restricting the ability of suppliers to capture this upside.

¹⁵ [Smart Energy GB](#)

Most supplier billing and settlement systems were not historically designed to manage half-hourly consumption data at scale, which presents system and integration risks from the move to MHHS. These risks include data storage and performance constraints and increased complexity for migration and parallel running. Relatedly, whilst greater use of half-hourly consumption and less reliance on profile classes can improve hedging and forecasting, it can also make forecasting more challenging. Under MHHS, suppliers will be more exposed to the granular costs of supply, and it is therefore even more important to have accurate forecasting.

Implementation actions

- **Preparing an impact assessment to identify and deliver quantified commercial opportunities while meeting regulatory obligations. Areas of focus for suppliers should include quantifying the imbalance cost exposure under MHHS, modelling portfolio shape risk under different scenarios and conducting impact analysis on working capital and cashflow.**
- **Designing an integrated operating model to redesign forecasting, trading and settlement processes and develop data governance, performance and analysis frameworks.**
- **Going beyond compliance to capture structural advantages early and maximise commercial value by developing enhanced half-hourly forecasting models and recalibrating hedging strategies.**

Outage prevention and restoration on the low voltage network

Alongside the outlined benefits for consumers and suppliers, the benefits for DNOs, particularly for the low voltage network, were also highlighted by market participants as one of the major opportunities presented by smart meter data (Figure 3).

Impact of smart metering

Florentine Roy, Flexibility Product Lead at UK Power Networks (UKPN), highlighted that improved visibility and understanding of usage patterns and load on the low voltage networks through smart metering could improve network reliability and reduce the number and duration of outages, ultimately lowering the system and network costs and reducing consumer bills. Preventing outages and improving outage restoration also allows DNOs to benefit from incentives and requirements under the second electricity distribution price control framework (RIIO-ED2), primarily through the Interruptions Incentive Scheme and Guaranteed Standards of Performance (GSoPs).¹⁶ Asmita Goyal, Chief of Services at Secure Meters, added that improved network visibility allows for any issues to be better understood and the root cause tackled rather than “only working on the symptoms”.

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Improved network visibility allows for issues to be better understood, and the root cause tackled rather than “only working on the symptoms”.

- Asmita Goyal,
Secure Meters

¹⁶ [Ofgem](#)

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Aggregated data access puts DNOs in a “very good place” but certain issues would benefit from more granular data

- Florentine Roy, UKPN

Delivering the use case

DNOs are currently able to access aggregated smart meter data from the DCC through a Data Privacy Plan approved by Ofgem. This aggregated data can be used to help deliver the benefits outlined, with Florentine Roy (UKPN) noting that this data access puts DNOs in a “very good place”. Florentine also added that whilst there is a lot that can be done with the aggregated data, certain issues such as voltage breaches would benefit from a more granular view of the data in order to be targeted proactively and efficiently, as discussed below.

For resolving network issues and maintaining network reliability, it is important that DNOs have access to the wealth of data that smart meters can provide beyond just traditional consumption data. Dinesh Bansal (Secure Meters) highlighted Australia’s Basic Power Quality Data initiative¹⁷ as an example of how advanced metering infrastructure can deliver additional value to network operators. The initiative enables the collection and delivery of key electrical parameters including voltage, current and phase angle data, providing greater visibility of conditions across the network. By making this data available at scale, network operators can more effectively identify and diagnose faults, monitor power quality, detect emerging issues before they escalate and make better informed decisions regarding network planning, maintenance and operational performance.

In addition to using the data from smart meters for monitoring the low voltage networks, Asmita Goyal (Secure Meters) highlighted the value in the approach taken in India where the low voltage network is also metered at 400V transformer nodes. Asmita notes that this gives a greater data granularity than using consumer smart meters alone and allows for faults to be identified quickly and proactively managed, as well as giving network mapping and visibility beyond just the areas with high densities of end user meter data. Relatedly, on 20 January 2026, UKPN announced that it was trialling a new innovation project, EcoVAR, to measure and manage low voltage networks at intermediate nodes.¹⁸

Implementation actions

- Using alerts from smart meters to identify network outages and expediently send targeted support. Additionally, smart meter alerts can also be used to remotely check that supply has been restored to all affected consumers.
- Integrating smart meter data with intranetwork monitoring within the low voltage network to improve network visibility for areas more distal from end consumers or with lower densities of

¹⁷ [AEMO](#)

¹⁸ [UKPN](#)

smart meter data. This allows for quicker identification of where outages have occurred and more granular information on the nature of the outage.

Optimising network reinforcement and managing the connections process

Impact of smart metering

In addition to improved network reliability, more granular visibility over usage and load patterns provided by smart metering can allow for more targeted and optimised network reinforcement. Better knowledge of network usage and capacity could also facilitate the addition of new loads or increase in existing loads. This is particularly important as more businesses and households look to add low-carbon technologies and electrify their operations and processes.

Delivering the use case

Smart meter consumption data can provide half-hourly visibility on network load, which can help DNOs to identify when and where the areas of greatest network congestion are, thereby improving the targeting of reinforcements. Analysing load flows on the distribution networks, alongside smart metering and intranetwork monitoring will allow targeted network reinforcement, reducing the cost of the energy transition. This can also be combined with improved forecasting of future demand to allow network reinforcement to be more proactive. As with outage prevention/restoration, optimised network reinforcements to manage changing demand can help deliver on RIIO-ED2 requirements. Related to this, on 31 October 2025, Ofgem announced the launch of a new Energy Networks Innovation Taskforce to help network companies to innovate.¹⁹ Although this Taskforce is not specifically focused on smart meter data it indicates a general shift towards a strategic approach to innovating networks and delivering the best value for consumers.

In addition to managing changes in existing load on the networks, the greater visibility over network constraints can make it quicker for DNOs to make an assessment on the impact of new connections to the network. It can also improve the estimation of the cost needed to facilitate these new connections. To improve the connections process for new loads, in December 2025, National Grid Distribution System Operator (DSO) published a network dataset covering all National Grid Electricity Distribution's Grid Supply Points to allow newly connecting customers to undertake their own assessment of network constraints before applying for a connection.²⁰

Implementation actions

- Mapping current network capacity and combining with forecasted future demand changes to identify optimal areas for network reinforcements and upgrades.
- Using a more granular map of network capacity to assess new connection requests and the costs associated with connecting new or expanded loads to the network. Making more of this data publicly available could drive more strategic and system-optimal connection requests from new demand centres.

¹⁹ [Ofgem](#)

²⁰ [National Grid DSO](#)

Delivering on RIIO-ED3 regulatory obligations

Several of the operational use cases for smart metering outlined above support DNOs in delivering on the requirements and incentives under RIIO-ED2. Based on the direction of Ofgem's RIIO-ED3 consultation,²¹ it is likely that there will be an expanded range of obligations and ambitions for DNOs under the next price control that smart metering can help deliver.

Delivering the use case

One of the areas outlined by Ofgem for inclusion in RIIO-ED3, which smart metering can support, is the update to connections classifications and the inclusion of connections incentives with a specific focus on connecting customers using low-carbon technologies. Ofgem proposes that DNOs could play a key role in coordinating the connection of household low-carbon technologies with their programme of network upgrades and management. As discussed above, consumer smart meters and intranetwork metering can help improve network visibility and allow a more joined up approach to both network management and the connecting of new low-carbon technologies.

In the RIIO-ED3 consultation, Ofgem also sets out proposals around 'smarter networks', including expanding the roles and incentives of DSOs around network planning, flexibility and voltage management and losses. Smart metering with modern tools and analytics can support this expanded role for DSOs through the mapping of network capacity and facilitating the quicker identification and rectification of voltage issues. Additionally, half-hourly consumer data can be used to baseline flexibility markets and help identify opportunities for and encourage provision of consumer-led flexibility and DSR.

Improved outage prevention and restoration provided by smart metering, as discussed above, can also support DNOs with Ofgem's proposal to introduce new incentives in RIIO-ED3 to target customers who face frequent or prolonged service interruptions, either as part of the Interruption Incentive Scheme or through a complementary mechanism. Ofgem's proposal is for new incentives that specifically address interruptions that are <3mins in length, multiple interruptions and interruptions >12hrs in length.

As discussed already in this report, smart meter data can help deliver these proposed obligations through intranetwork visibility, standardised data access pathways, consistent low voltage monitoring baselines and operational integration of smart meter datasets.

Implementation actions

- Ensuring that the frameworks to deliver the benefits of smart metering for DNOs are developed and standardised ahead of RIIO-ED3. Without this there is a risk of uneven readiness going into the next price control period which can potentially restrict DNOs in delivering on some of the proposed RIIO-ED3 objectives.
- Developing a balanced scorecard to appropriately incentivise and reward DNOs for the use of smart metering data to optimise network upgrades and management and deliver an improved experience for customers.

²¹ [Ofgem](#)

Overcoming the Barriers

As outlined, there are a number of operational use cases for smart meter data that allows for the benefits to the smart meter rollout to be unlocked and maximise the value of smart metering. However, modifications are needed to existing market arrangements, regulatory frameworks, infrastructure and accountability mechanisms to fully deliver the benefits of smart metering.



“Having the option to view single household load profiles would make a massive difference” to understanding network loads

- George Fournarakis, SP Energy Networks

Granularity and accessibility of data

Whilst access to aggregated smart meter data has been a significant bonus for DNOs, the aggregation of the data remains a key structural barrier for DNOs, with George Fournarakis, Lead Energy System Specialist at SP Energy Networks, highlighting that “having the option to view single household load profiles would make a massive difference” to both the understanding of network loads and the ability to baseline flexibility markets. Additionally, DCC data architecture is designed around billing rather than network management, which therefore restricts DNO access to data which can help control voltage or validate flexibility provision.

Solution: *Allowing access to unaggregated smart meter data can broaden the use cases for DNOs, with market stakeholders highlighting the value of increased data granularity as long as it is balanced with appropriate consumer data protections. A regulatory pathway to allow routine access to unaggregated data could therefore help unlock this barrier. Lowering costs and simplifying compliance for data access was also identified in a Cornwall Insight survey of market participants as the biggest improvement to deliver value from smart meters, with 60% of respondents highlighting this area.²²*

Capacity to utilise the data

Another structural barrier for DNOs is being able to make use of all the smart meter data, with major upgrades to capabilities and systems needed to process all the data, as many legacy systems are not set up to ingest and analyse the growing volume of smart meter data. This challenge was highlighted by Leonard Barraclough, Business Development Lead at SP Energy Networks, who noted that significant resourcing is required to manage data flows and build the models to allow DNOs to capitalise on the data generated.

Solution: *Integrating smart meter data into operational workflows and platforms can help tackle this barrier. Increased regulatory incentives will*

²² Survey conducted as part of Cornwall Insight's 2025 Annual Conference, with attendees asked: “What improvements are needed to more effectively use smart meters?”

therefore strengthen the business case for DNOs to develop the necessary data science models and help encourage the development of standardised data pathways and frameworks.

Geographical variability in data density

The density and geographical spread of data is a further structural barrier, with the penetration of household smart meters currently varying significantly between local authority districts in the UK, from only 35% in the Isles of Scilly to 84% in Bolsover, North Kesteven, Mansfield, and Milton Keynes, as of Q126.²³ Data density is further limited by poor data quality or smart meter connectivity issues in certain regions. This can lead to incomplete or biased datasets, potentially resulting in misidentification of constraint risks or under-representation of areas of the network. A market stakeholder proposed that mandating multiple communication routes for smart meters would be a way of reducing communication-related issues and filling data gaps. In addition to the variability in smart meter data density there is also significant variability in the rollout of intranetwork metering and therefore the visibility of low voltage networks away from end user meterpoints.

Solution: Continuing the smart meter rollout and improving communication infrastructure and monitoring can help improve data density and fill geographical gaps. Defined minimum expectations for the intranetwork monitoring of low voltage networks through RIIO-ED3 could deliver greater consistency between DNOs and reduce geographical variability in data access and density.

DCC ‘accountability gap’

The main structural barriers to consumer uptake of smart meters are around trust and transparency over how smart meter data is being used and by whom, with many consumers wanting greater visibility over how data is used and the ability to opt in or out of its usage.

Part of the trust barrier is that when a customer perceives that their smart meter is ‘not working’ it can often be from issues beyond the meter itself, which is working at a technical level, such as problems with the DCC’s communications infrastructure, supplier data flows, incorrect tariff information etc. Colin Griffiths (Citizens Advice) highlighted that opacity over who the responsible party is for any given issue makes it difficult to get it fixed and can erode consumer trust in smart meters as a whole. Colin added that “a particularly big problem is the ‘accountability gap’ in situations where the issue is a DCC problem”. Because the DCC is not currently subject to the Ombudsman there is no route for consumers

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Opacity over who the responsible party is for any given issue makes it difficult to get it fixed and can erode consumer trust in smart meters

- Colin Griffiths,
Citizens Advice

²³ [DESNZ](#)

to pursue getting it fixed, with any issues flagged by suppliers as ‘DCC problems’ potentially ending up effectively left in limbo. Closing this accountability gap could not only improve consumer experience but also reduce the number of faults or outages on the smart meter network.

Solution: In order to help close the accountability gap between suppliers and the DCC, on 30 January 2026, Ofgem published its decision to implement new supplier GSoPs for smart meters.²⁴ The smart meter GSoPs are proposed to help tackle the accountability gap by including the DCC within the GSoPs, with an additional 30 days given to suppliers to resolve DCC related issues. However, the GSoPs designed to address the accountability gap are currently delayed, with no set timeframe from Ofgem on when they might come into force. Alongside the new smart meter GSoPs, Colin Griffiths (Citizens Advice) also suggested that in addition to supplier installation targets there is a need for performance targets, to improve the consumer experience and incentivise greater analysis on what is causing any issues for smart meters.

On the usage of smart meter data, Colin noted that, whilst 92% of surveyed consumers reported that it was important to them to be able to opt out of having their data used, only around 5% are actually likely to enact that choice. As a result, offering consumers the choice and optionality can provide reassurance and improve customer confidence in smart meters without risking the loss of significant amounts of data. Additionally, making it clear to consumers what the financial consequences of opting out are, e.g., without the access to the half-hourly data you cannot access a cheaper ToU tariff for your EV, also reduces the chance of consumers opting out, whilst still allowing them to feel more in control of their data usage.



²⁴ [Ofgem](#)



CORNWALL INSIGHT

CREATING CLARITY



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For this report we adopted a mixed methodology approach based on both quantitative (from Cornwall Insight and external sources) and qualitative data (from in-depth interviews with the market stakeholders below). We would like to thank all the individuals and companies who contributed to this report for their insights, including those who wished to remain anonymous.

- Adam Scorer, Chief Executive at National Energy Action
- Andrew Gore, National Segment Head, UK & Ireland at Secure Meters
- Asmita Goyal, Chief of Services at Secure Meters
- Colin Griffiths, Policy Manager at Citizens Advice
- Dinesh Bansal, Metering Data Manager – NEM and EMB Market at Secure Meters
- Florentine Roy, Flexibility Product Lead at UK Power Networks
- George Fournarakis, Lead Energy System Specialist at SP Energy Networks
- Leonard Barraclough, Business Development Lead at SP Energy Networks
- Michelle Little, Head of Propositions at So Energy
- Neil Slater, Head of Trading at So Energy
- Suket Singh, Group CEO at Secure Meters

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