

Review of the non-domestic gas metering market in Great Britain

Report

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Overview:

A decade after the market for gas metering products and services at non-domestic premises was opened to competition, we have reviewed how well the market is working.

Competition does not appear to be working as well as it should be. In particular, significant costs are incurred when gas suppliers switch meter provider, as this typically involves replacing the existing metering assets. These switching costs constitute a barrier to entry and expansion.

The expense involved in replacing meters and automatic meter reading (AMR) devices and the reduced competitive pressure on providers are together likely to result in higher rental charges to gas suppliers for metering assets. These costs can be expected to feed through to higher energy bills for non-domestic gas consumers.

We are calling on the industry to take a number of steps to help improve the health of competition in the market. This includes meter providers being more prepared to sell or lease meters in situ and gas suppliers tendering for the appointment of meter providers in order to reduce the charges they face. We will keep progress in these areas under review and stand ready to take further action if necessary.

Context

The health of competition in the retail market is a top priority for Ofgem. We promote effective competition where it can benefit consumers by driving down costs and improving service quality.¹

An important aspect of the retail market is the system that is required to deliver energy to consumers, and metering is a crucial component of this.

In the non-domestic retail market the provision of gas metering products and services has been open to competition for over ten years. This is an appropriate time for us to have reviewed the market for these products and services.

¹ *Ofgem: Our Strategy* (January 2015) <https://www.ofgem.gov.uk/publications-and-updates/ofgem-our-strategy>

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Executive summary

The non-domestic gas metering market is important for the operation of the retail gas market and is also significant in terms of its size. There are approximately 1.4 million gas meters at non-domestic premises in Great Britain and gas suppliers spend approximately £120 million per year procuring metering products and services for these sites. This accounts for about 2% of the average non-domestic gas bill.

Meter providers seek to recover through the charges they levy the costs of purchasing and installing meters, maintaining them and replacing faulty ones. They must also earn a return on their investment and insure themselves against the risk of being de-appointed by suppliers. Given the risk that de-appointment poses to their investment and to their ability to secure third party funding for it, providers typically also manage this by including in their contracts with suppliers charges that are payable if the supplier terminates the contract.

The provision of gas metering products and services at non-domestic premises was opened to competition over ten years ago. For some time there was little change in the market share of the incumbent meter provider, National Grid (NG), but there has been significant change recently. This stems from the requirement for suppliers to install automatic meter reading (AMR) devices. The AMR rollout programme has enabled some providers to grow and has brought investment to the sector.

This is an appropriate time to have reviewed the market for these products and services. Doing so has afforded an opportunity to consider concerns that have been raised with us about how well the market is working. Our review has focused on the effectiveness of competition.

How well the market is working

In order for a market to function well and for providers to compete on price and service quality, it is important that suppliers have a good choice of providers and that obstacles to switching between them are minimised. This enables new providers to enter the market and existing smaller providers to expand their market share.

Notwithstanding the recent growth of some providers, this market remains highly concentrated. We are concerned that competition has not evolved as quickly as it might have and will not be as effective as it should be going forward.

A particular area of concern relates to the significant costs incurred when suppliers switch meter provider. Incoming providers appointed by suppliers are not generally able to adopt meter assets in situ so must replace the existing meter and/or AMR device. It is likely to be particularly costly to replace more complex meters and those designed to operate at those parts of the network where the gas is at higher pressure and NG appears to retain a particularly high share of customers in this part of the market. Suppliers may also incur charges levied by the previous providers for

terminating their contracts. These switching costs in combination are likely to constitute a barrier to entry and expansion.

This is likely to result in reduced competitive pressure on providers. Together with the costs incurred in replacing meters and/or AMR devices, this appears to result in higher rental charges to gas suppliers. These raised charges can be expected to feed through to higher energy bills for non-domestic gas customers. The disruption caused by meter changes may also deter end customers from changing gas supplier so there may be an adverse effect on competition in the retail gas supply market too.

Suppliers may be able to offset these raised costs to some degree by leveraging their buyer power through competitive tenders for the provision of metering products and services. The rollout of smart meters presents an opportunity to do this, although the market is likely to stabilise once more when this is complete.

There are other factors adversely affecting competition too, including the poor quality and availability of information about each meter point.

Next steps

We believe there are steps that market players can take to address these concerns and improve the health of competition in the market:-

- We encourage meter providers to sell or lease meter assets in situ to incoming providers and call on all market participants to facilitate this. We want to minimise unnecessary change of meter upon change of meter provider. We will chair a meeting of market participants at which we expect companies to come with proposals to make this market work better.
- We call on gas suppliers to promote the sale or lease of existing assets in situ in their dealings with providers as a way to reduce the rental charges they pay. We also encourage them to take advantage of opportunities to tender for the appointment of meter providers, such as those presented by the rollout of smart meters. In such negotiations they should pay careful attention to the level of termination charges so as to not to constrain unduly their ability to switch provider.
- We also want to see improvements in the quality of information available to market participants about meter points. As well as improving remuneration of meter providers this is necessary to facilitate the adoption of metering assets in situ rather than their replacement by incoming meter providers appointed by suppliers.

We will enhance our monitoring of the market. If we do not see progress in terms of the points outlined above and if an improvement in the effectiveness of competition is not evident we will consider whether further action would be appropriate.

1. Introduction

1.1. In an open letter² published in February 2015 we announced a review of the market³ for gas metering products and services in respect of non-domestic gas customers in Great Britain.

Background and reasons for the review

1.2. Historically, National Grid (NG) was the sole owner and operator of the gas transmission and distribution networks and the monopoly provider of metering services in Great Britain. While it (as National Grid Gas Plc) remains the owner of half of the gas distribution networks⁴, other providers have been able to provide gas metering services since 2004.

1.3. The amount that NG can charge for gas meters provided at domestic premises⁵ is subject to a tariff cap⁶. Those at non-domestic premises are not price-regulated, although there are various licence conditions relating to how National Grid Gas Plc, through its subsidiary National Grid Metering Ltd, sets its prices.

1.4. The non-domestic gas metering market has now been open to competition for over ten years and concerns have been raised with us about various aspects of how it is operating. It is therefore timely to have undertaken this review now to assess how well the market for these products and services is working.

Scope of the review

1.5. This review is concerned with 'non-domestic' gas metering products and services, which refers to those supplied in respect of non-domestic premises. (Note that the 'non-domestic' sector is frequently also referred to as 'industrial and

² <https://www.ofgem.gov.uk/ofgem-publications/93073/openlettertoannouncemarketreviewfeb2015final.pdf>

³ The term 'market' is used here as shorthand for the non-domestic gas metering sector. It does not describe or otherwise suggest the approach taken for the purposes of market definition.

⁴ Some parts of the distribution network have been transferred to independent regional network owners and operators. National Grid currently owns four of the eight gas distribution networks.

⁵ Condition 6 of Gas Act 1986 Standard Conditions of Gas Supply Licence defines a domestic premises as a premises at which a supply of gas is taken wholly or mainly for a domestic purpose (paragraph 6.1) and a non-domestic premises as a premises that is not a domestic premises (paragraph 6.2):

<https://epr.ofgem.gov.uk/Content/Documents/Gas%20supply%20standard%20licence%20conditions%20consolidated%20-%20Current%20Version.pdf>

⁶ The tariff caps apply in respect of meters installed by all gas distribution networks.

commercial' (I&C). It thus does not include metering products and services supplied for domestic premises, although we have considered the interactions with that sector. Electricity metering markets are also outside the scope of this review.

1.6. The review considered the following three distinct activities in relation to non-domestic gas metering products and services:

- meter asset provision (MAP): ownership and associated financing of meters
- meter asset management (MAM): installation and management (including maintenance) of meters
- automatic meter reading (ie AMR)⁷ or 'advanced' meter service provision (ASP): provision of data recording and communications equipment and services, including management of data provision to gas suppliers.

1.7. In this report we use the term 'market' in relation to each of these activities and also as shorthand for the non-domestic gas metering sector generally. We refer to providers of gas metering products and services as 'providers' (although note that they are also frequently referred to generically as 'MAMs') and gas suppliers as 'suppliers'. 'Customers' are the customers of the providers (typically suppliers) and 'end customers' or 'end users' are non-domestic gas supply customers.


1.8. This review has in part been conducted at the same time as an external, independent review of the processes that market participants are required to comply with (the 'RGMA-MAMCoP Review'). This has been coordinated by the Executive Committee of SPAA Ltd, the body that oversees MAMCoP. Our review has had a different focus as it has been concerned with how well the market is working, and in particular the effectiveness of competition.

Structure of the report

1.9. This report is structured as follows:-

- Chapter two defines the market, describes how it works and presents estimates of market shares and recent changes in these.
- Chapter three provides an analysis of competition in the market relative to what a well-functioning market would look like.

⁷ AMR devices translate the meter's pulse into a digital signal and are typically attached to conventional 'dumb' (ie non-smart) meters, although 'embedded' meters incorporate an integral AMR device.



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- Chapter four considers the effects of the level of competition we observe in this market.
 - Chapter five draws some conclusions about how well the market is working and describes steps we are going to take to improve the health of competition.
 - The appendices describe regulation of the sector, with the exception of regulation of NG, which is covered in chapter two, and the requirement for suppliers to install advanced and smart meters, which is included in chapter three.
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2. The market

Chapter Summary

There are approximately 1.4 million gas meters at non-domestic premises in Great Britain and gas suppliers spend approximately £120 million per year procuring metering products and services for these sites. This accounts for about 2% of the average non-domestic gas bill. Meter charges make up the bulk of this and reflect the costs of purchasing and installing meters, as well as maintenance, replacement of faulty meters, return on investment and protection against the risk of de-appointment by suppliers (which is also managed by termination charges). The growth of two providers accompanying the AMR rollout programme in recent years in particular has brought investment to the market, which was opened to competition in 2004. However it remains highly concentrated and the incumbent provider (NG) retains around two-thirds of the market. NG's share of meter points appears to be higher still for more complex and higher pressure meter installations.


Market definition

2.1. Competition assessments usually start by defining the relevant market, which typically has product and geographic dimensions. The relevant product market consists of those products and/or services that are regarded by consumers as substitutable, while the relevant geographic market is the area in which those products and/or services are sold or purchased. We do not reach a definitive view on the relevant market⁸ for the purposes of this review as it is not an end in itself but a step in identifying competitive constraints on firms and a framework for competition analysis.

2.2. As explained in the previous chapter, this review has considered three distinct activities in relation to non-domestic gas metering products and services: MAP, MAM and ASP. It seems sensible to regard each of these as potential separate product markets given that they are distinct functions and could be offered separately by independent companies⁹, albeit with some possible qualifications:-

⁸ The test by which markets are defined seeks to establish the smallest product group (and geographical area) such that a hypothetical monopolist controlling that product group (in that area) could profitably sustain 'supra competitive' prices, ie prices that are at least a small but significant amount above competitive levels. That product group (and area) is usually the relevant market. Whether this test is met typically depends on the extent to which customers would switch their purchases to other substitute products or areas (ie demand side substitution). If undertakings that do not currently supply a product are likely to supply it at short notice and without incurring substantial sunk costs (ie supply side substitution) this might also prevent a hypothetical monopolist profitably sustaining prices above competitive levels.

⁹ Ofgem previously considered the market definition for MAP and MAM in the gas sector in its



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- Bigger and, in particular, more complex meters and those designed to operate at parts of the network where the gas is at higher pressure may well form separate markets for both MAM and MAP. Suppliers are likely to be constrained in their ability to switch to alternative products (ie demand-side substitution). The same is likely to be true of larger end customers if, as we've been told, they are more likely to choose their own MAM/MAP, rather than accept the supplier's choice. Supply-side substitution is also likely to be constrained as it is significantly more difficult and costly to install and maintain these meters and some MAMs do not cater for these meters because of the different skills and additional accreditation needed for staff to do so (see further below).

However, it is difficult to specify precisely the cut-off point for any such separate markets. This is partly because they are likely to have several dimensions: meter size; meter type¹⁰; complexity of the installation and pressure of the installation. Delineating them is also not aided by the poor quality of data available (see further below).

- Data services could be provided separately to the AMR equipment. In practice, however, both are usually procured from the same company.

Decision following its investigation into National Grid, which found that NG had contravened section 18 (the chapter II prohibition of the Competition Act 1998 and Article 82 of the EC Treaty in relation to the provision and maintenance of domestic-size gas meters (Ofgem case ref. CA98/STG/06): https://www.ofgem.gov.uk/sites/default/files/docs/2008/03/national-grid-competition-act-decision-2708_0.pdf.

It said that 'the relevant product market is defined as the provision of installed domestic-sized gas meters, including the ancillary service of meter maintenance' (paragraph 3.39). It thus concluded that the relevant product was a single MAP and MAM services market. It found that in practice energy suppliers sourced meter installation and meter maintenance together with meter provision (paragraphs 3.25 and 3.27). Ofgem did not find sufficient evidence that it would be cost effective for energy suppliers to appoint separate companies to maintain existing meters and to install meters. However, it noted that at the time competition had only recently been introduced in the domestic gas metering market and that a separate market for meter maintenance could emerge in the future (paragraphs 3.29-3.30).

The Office of Fair Trading (OFT) assessed the completed acquisition by Macquarie Bank (London branch) of Utility Metering Services Limited (case ref. ME/5260/11) in 2012 on the basis of MAP services being provided separately to MAM services (paragraph 30). This reflected the fact that MAP and MAM services could be offered separately by independent companies (paragraph 25), notwithstanding that MAP and MAM providers could benefit from close working relationships and it was not uncommon for MAP providers to sub-contract their MAM services (paragraphs 26-29).

¹⁰ Notably diaphragm, rotary or turbine.

2.3. The appropriate geographic market is likely to be national (Great Britain), with the proviso that outlying areas could form distinct geographic markets.¹¹ However, there was little consistency in the submissions we received from market participants as to which areas might actually do so.

How the market works

2.4. Suppliers typically appoint third parties to provide metering products and services at the premises they supply gas to. However some have their own in-house provider and use this as well or instead. Some (particularly larger) end users contract directly with meter providers for their metering arrangements. In this report we generally refer specifically only to suppliers' contracts with providers although many of the same issues are likely to apply when end users contract with providers directly.

2.5. Suppliers may deal with a range of providers, reflecting not only the metering arrangements they've made in the past but also those made by other suppliers in respect of end customers who have since transferred ('churned') to them for their gas supply. We have found, however, that many suppliers prefer to contract with only a limited number of providers in order to simplify their metering arrangements and minimise administration costs. Suppliers may appoint preferred providers (and in some cases just one) for all sites and for both meter and AMR services. We understand that in choosing provider(s) they will have regard to the quality of service provision while seeking to minimise the charges payable.

2.6. Thus prospective meter providers would ideally be large enough to handle a supplier's entire portfolio and would operate in all regions and offer all products. The need to operate nationally may limit the number of providers that the market could sustain, although this may not be a binding constraint given that, for example, one provider with an estimated market share of approximately 1% was seen by a significant gas supplier as offering national coverage. The efficient number of

¹¹ This accords with the approach Ofgem adopted in its Decision following its Investigation into National Grid (Ofgem case ref. CA98/STG/06): https://www.ofgem.gov.uk/sites/default/files/docs/2008/03/national-grid-competition-act-decision-2708_0.pdf (paras 3.40 to 3.51).

Ofgem found that the conditions of demand and supply did not vary across regions within Great Britain. It excluded Northern Ireland on the basis that metering is a monopoly activity by the relevant network business in Northern Ireland. It did not widen the market to other countries as installation of a meter requires a physical presence.

The OFT also adopted Great Britain as the geographic frame of reference in its decision on the completed acquisition by Macquarie Bank (London branch) of Utility Metering Services Limited (case ref. ME/5260/11) in 2012 (paragraphs 49-52). It noted that Macquarie had argued that given that MAP can be separated from MAM in terms of product market definition there was scope, from a supply-side perspective, for MAP to be provided by suppliers from outside Great Britain. The OFT found no substantial barriers for firms outside Great Britain supplying MAP but noted that currently the majority of MAP providers had a presence in Great Britain.

providers might be more likely to be constrained by the number of non-domestic gas suppliers but there are a significant number of these (47 active ones as of December 2015).

2.7. Firms involved in metering may seek to provide meters (ie as owners of them) in order to earn rental payments. As the MAP they are also well placed to provide other metering products and services. The roles of MAP and MAM are often performed by the same company. The MAP/MAM is often also the ASP as suppliers generally prefer the same company to provide both meter and AMR services. Indeed some suppliers are installing embedded (ie combined) AMR meters, although these don't exist for rotary and turbine (ie bigger and more complex) meters.

2.8. In levying rental charges meter providers seek to recover the costs incurred up front in purchasing and installing meter assets (and the costs of borrowing to finance these). For smaller meters, the cost of installing a meter is likely to outweigh the cost of purchasing it, although we understand this is not the case for larger meters. For example, we understand the purchase price of a new domestic-size ('U6') meter (the most common size of non-domestic gas meter) is around £20, while the cost of installing it is typically around £50.

2.9. The metering charges also need to cover the costs of maintaining meters and replacing faulty ones. However, the maintenance required is usually minimal. So, for example, one provider estimated maintenance costs at just 8% of its total costs per U6 meter in 2014-15. We understand that low maintenance costs reflect low fault rates. Gas meters may continue to function for 20 years or more.¹²

2.10. Meter providers will also want metering charges to provide a return on their investment and to reflect the risk that they will be de-appointed by the suppliers for the meter points their meters are installed at (notwithstanding that they could sell or lease their meter assets to the incoming provider). De-appointment entails the loss of all future rental revenue (unless the meter assets are leased to the new MAM).

2.11. Given the risk that de-appointment poses to their investment and to their ability to secure third party funding for it, providers typically also manage this by including termination charges (also referred to as early or premature replacement charges) in their contracts with suppliers. We gather that in practice, even where suppliers have signed contracts with them, smaller providers may not feel able to enforce termination charges for risk of antagonising their customers. We also understand that termination charges do not apply when end customers switch away from the supplier that agreed the termination charges.

¹² Thus, for example, analysis of a sample of *domestic* gas meter points on the Xoserve database finds that just over one third of meters in place at January 2015 were installed more than 20 years ago. This should be taken as only a rough guide to the technical life of non-domestic gas meters, which can be subject to different locations (such as installation locations).

2.12. Typical rental charges for a U6 meter were approximately £15 pa in 2014-15 while those for the largest, high pressure meters were several thousand pounds pa¹³. Charges for ASP (incorporating rental on AMR devices) are variable.

Market size

2.13. We estimate market size in 2014-15 at £117 million per year (MAM and MAP £110 million and ASP £7 million), although this figure may not be accurate and is likely to rise as the number of AMR devices fitted increases. In calculating market shares below we employ an estimate of the total number of non-domestic gas meters of nearly 1.4 million. We estimate that metering costs currently account for approximately 2.4% of the average non-domestic gas bill¹⁴.

National Grid – how it is regulated

2.14. NG was the monopoly provider when the market was opened to competition in 2004. While NG's domestic gas meter tariffs are subject to price controls, its non-domestic meter tariffs are not. However, its provision of non-domestic gas metering products and services is subject to various licence conditions:-

- NG must not discriminate unduly between customers (except in so far as differences in prices charged to different customers reflect cost differences) and must not adversely affect competition in the supply of gas.¹⁵
- In addition, it is required¹⁶ to provide suppliers with its terms, including its charges for metering services and an explanation of how they are calculated, and must set these out in a form approved by the Authority. NG has to send an up-to-date copy of these statements to the Authority and any supplier who requests a copy.

2.15. The non-discrimination licence condition was designed to counter the adverse consequences of any market power that NG had as a result of its monopoly position when the market was opened to competition. It was required to produce statements of its charges so as to be transparent and to facilitate monitoring of compliance with the non-discrimination licence condition.

¹³ NB NG restructured its non-domestic gas metering charges in 2014 so as to differentiate according to pressure and complexity of the meter installation, in addition to the size and type of the meter, following a survey of its metering assets.

¹⁴ Market size figures cited yield an estimate of the average metering charges per meter point of £84. Consolidated Segmental Statements published by Ofgem in 2014 for Centrica, RRWE npower, EDF, E.ON, SSE and Scottish Power yield a combined average non-domestic gas bill of £3,484 (<https://www.ofgem.gov.uk/publications-and-updates/energy-companies-consolidated-segmental-statements-css>).

¹⁵ Standard Special Condition (SSC) D19

¹⁶ SSC D18

Market shares and recent changes in the market

2.16. There was little change in NG's market share for some time following the opening of the market to competition. A requirement was introduced (for large premises in 2009 and other supply points in 2012) for suppliers to install AMR devices (or smart meters) by certain deadlines or enter into contracts to do so.¹⁷ This appears to have led to two providers in particular, Energy Assets Group Plc (EA) and Smart Metering Systems Plc (SMS), entering into agreements with a number of suppliers to replace a significant number of the meters at their supply points while installing AMR devices.

2.17. The cost of installing a new meter is reduced when providers are visiting premises to install an AMR device because the cost of attending the site is a significant proportion of the total cost of installing a new meter. This means that a provider who installs AMR devices while replacing meters is in a position to offer discounts, whether on the upfront cost of AMR installation, ongoing ASP or the combination of ASP and meter charges, because it is securing ongoing meter rental payments too. These rental streams (for the AMR devices as well as for the meter) are typically protected by charges for terminating the contract.

2.18. The AMR rollout has thus been accompanied by investment in new meters and has also facilitated development of additional services related to the provision of AMR data and energy management / saving products.

¹⁷ In April 2009 the UK Government, in connection with its wider smart metering policy, introduced new supply licence conditions (SLC 12.20-12.25) to mandate gas suppliers to roll out AMR or 'advanced' meters to all their larger non-domestic premises (ie where the metering point has an annual consumption exceeding 732MWh) by April 2014.

In April 2012 supply licence conditions were introduced that mandated gas suppliers to roll out smart meters to smaller non-domestic premises (Annual consumption less than 732MWh) by the end of 2020 unless an exemption applied, in which case the use of an advanced meter was permitted. These exemptions were:-

- The advanced meter was installed before April 2014 (subsequently extended to April 2016) (Supply licence condition (SLC) 33.4).
 - The advanced meter was installed before the end of 2019 (subsequently extended to the end of 2020) under a contract that was entered into before April 2014 (subsequently extended to April 2016) (SLC 33.11)
 - The existing meter is designed to operate with a maximum flow rate of greater than 11m³/hour, for which no 'smart' variant exists (and developing such a variant would be costly). Any replacements of such meters after April 2014 were required to be advanced (SLC 12.26-27) and all such meters have to be advanced by the end of 2020 (SLC 12.30).
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2.19. The market shares of EA and SMS have grown significantly in the past few years, as shown in the following table. We have data only on the MAMs for each meter point but market shares calculated for MAMs are taken as indicative of MAP market shares given that these two products and services are often provided together.¹⁸ However, please note that the MAM market share figures are not precise as the available industry data do not afford reliable estimates. The figures should be read as indicative of approximate magnitudes of market shares and of changes in these over time (given that the figures for the two points in time were calculated on the same basis). (Note that market shares are shown in the table as ranges due to the potential commercial sensitivity of the precise figures, notwithstanding their inaccuracy.¹⁹)

2.20. We use the data available in the register of supply points that Xoserve holds on behalf of gas transporters (GTs) (the 'Register') to calculate market shares. A particular problem with this is that a MAM is not recorded for a significant number of meter points and, where it is, it may not always be the correct one.

2.21. The estimate of NG's market share in the table may be an over-estimate because legacy data may not have been updated by the shipper for some meter points. In these cases NG might be shown on the Register as the MAM where it wasn't any longer. This would imply that the other MAMs' market shares in the above table are under-estimated. Thus one MAM told us that the Register showed it as the MAM for only 40% of the meters for which it was the MAM and a third party (potentially NG) was shown for 32% of them.

2.22. This MAM also said that no MAM was recorded for 27% of its meters and 1% of its meter points were not found on the Register. We found that no MAM was recorded for 6% of the non-domestic size meters on the Register in January 2015 and excluded these from our market share calculations.

Estimated market shares		
MAM	Oct. 2012 (%)	Jan. 2015 (%)
National Grid	[80-90]	[70-80]
Energy Assets	[5-10]	[10-20]
SMS	[0-5]	[5-10]
Utility Metering Services	[0-5]	[0-5]
Meterfit	[0-5]	[0-5]
Others (in total)	[0-5]	[0-5]

Source of data: Xoserve Ltd., drawing on the register of supply points it holds on behalf of gas transporters (GTs) (the 'Register').

Notes:

¹⁸ An example of an exception to this is Utility Metering Services, which is the MAP for some meters where it is not the MAM.

¹⁹ We have adopted the ranges used by the European Commission in non-confidential versions of merger decisions:
http://ec.europa.eu/competition/mergers/legislation/guidance_on_preparation_of_public_versions_mergers_26052015.pdf (annex 1)

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- (1) Data excludes independent gas transporter (IGT) networks, which predominantly relate to domestic premises.
- (2) Market shares are estimated according to numbers of meter points rather than revenue accruing to them.
- (3) Data held in the Register is reflective of information provided to Xoserve by shippers and is not always complete. Thus our analysis excluded meter points where no MAM was shown in the industry data provided to us by Xoserve.
- (4) Information recorded in the Register may also not always be accurate. Thus, for example, inaccuracies in relevant indicators as to whether a meter point is non-domestic (or I&C) or domestic mean the market shares in the above table at each point in time have been calculated as weighted averages of:-
 - a) Market shares for domestic-size (ie U6) meters, which are estimated for just those meter points where the supplier is one that only has non-domestic customers. These market shares were factored up according to the estimate provided by NG of the total number of U6 meters at I&C premises (900,000).
 - b) Market shares for meters other than domestic-size meters: diaphragm meters above size U6; rotary meters; turbine meters and others. Such meters are assumed all to be installed at non-domestic meter points, notwithstanding that a few (especially larger) domestic residences are likely to have meters bigger than U6. The Register included 481,160 of these meters (as at Jan. 2015).

The estimated market shares in the above table are not expected to be highly accurate for several reasons:-

- the relatively high weighting of the market shares for U6 meters (together with our inability to verify the figure of 900,000 for the number of U6 meters at non-domestic premises²⁰); together with
- estimation of market shares for U6 meters according to the pattern of provision at just those meter points supplied by dedicated non-domestic suppliers (non-domestic meter points with domestic-size meters may actually be relatively likely to be supplied by companies that also supply domestic customers); and
- incompleteness and inaccuracies in the data held in the Register (not least the identity of the MAM at each meter point).

2.23. Even though the figures in the above table are likely to be inaccurate, it can be seen that the market remains highly concentrated. The value of the Herfindahl-Hirschman Index (HHI)²¹ for this market calculated according to the market shares in the above table in January 2015 is 5,524²². If NG's market share is lowered to 65%, say, and that change in market share is distributed among the other providers in

²⁰ Note that our combined total of non-domestic meters of 1.38 million accords broadly with an estimate published by DECC for the number of I&C sites in GB of c.1.5 million (*Smart Metering Implementation Programme – Smart Metering for Non-Domestic Customers*, DECC, January 2013, Annex Table 2).

²¹ Calculated as the sum of the squares of the market shares of the firms in the industry (in this case expressed as percentages). Thus a market with one monopoly producer would have an HHI of 10,000.

²² A useful way of interpreting the HHI is that when you divide 10,000 by the HHI you get the equivalent number of equally sized firms in the market. So the HHI here of 5,524 equates to less than two equally sized firms (ie a duopoly). EU Merger Regulation states that a post-merger HHI of above 2,500 would require further scrutiny if the increase in HHI as a result of the merger was in excess of 150. Similarly, in the USA a merger resulting in HHI above 2,500 with an increase in HHI of more than 200 points is presumed to be likely to enhance market power.

proportion to their market shares in the above table, the HHI becomes 4,531. This still suggests a highly concentrated market.

2.24. Concentration appears to be particularly high for larger and more complex meters. NG's market share of turbine meters, for example, is estimated at [80-90%] in January 2015 (cf. [70-80%] overall) although this is subject to the same qualification as the figures in the above table^{23,24}. This had reduced from [90-100%] since October 2012, which suggests that other MAMs had taken over these meter points and hence that these meters might not in fact form a separate market. However, it is also possible that correction of previous errors in the MAM shown on the Register might account for the change.

2.25. It is not possible to estimate the likely effect of the AMR (and smart meter) rollout programmes on market shares but they will continue to change as these programmes progress. Nevertheless, on current trends, we appear to be heading towards a situation where there are three significant players.

2.26. NG has installed relatively few AMRs so its market share in relation to these lags behind EA and SMS. There are fewer ASPs than meter providers, although the number has increased in the last five years as metering companies have started to offer these services too.

Market entry and exit, acquisitions

2.27. While we have been told that some companies started operating in this industry around five years ago, in this time, we are also aware of a number of companies that have exited the market since then. In some cases, this has occurred through acquisition by other providers²⁵.

²³ Thus, for example, one supplier said that its preferred provider is not always capable of handling high pressure installations and these are referred to NG. Another supplier said that it tended to remain with NG for these but said there were limitations on the availability of contractors and engineers technically capable of working on larger / more complex meters.

²⁴ NB This does not mean that NG's share of smaller (non-turbine) meters is significantly below the figure in the above table as the low number of turbine meters means excluding them has little effect on the overall figure.

²⁵ Acquisitions we are aware of include:-

- Energy Assets Plc acquired SA Gas in March 2015.
- Macquarie Bank Ltd (a MAP) purchased Utility Metering Services Ltd (which traded as 'Onstream') and Siemens' shareholding in Capital Meters Ltd (which had been established by Macquarie and Siemens as a joint venture).
- In ASP G4S bought the AMR assets owned by Utility Metering Services Ltd and Energy Assets Plc bought Gazprom Global Energy Solutions Ltd and TruRead.

3. Competition analysis

Chapter Summary

Our analysis suggests that competition is not as effective as it could be. In particular, when gas suppliers switch meter provider costs are incurred (in replacing the existing meter assets and due to termination charges) that weaken competitive constraints on providers. These switching costs form a barrier to entry and contribute to the continuing high level of concentration. Other factors that adversely affect competition include the high sunk costs of entry; loss of assets from the meter replacement programmes accompanying the AMR rollout and the economies of scale and scope of the larger providers. The poor quality of information that is available about meter points impedes the purchase or leasing of meter assets in situ as an alternative to replacement upon switching provider. Suppliers may be able to offset these factors to some degree by leveraging their buyer power with competitive tenders for the provision of metering products and services.

Framework for assessing competition

3.1. It is important that there are constraints on providers' 'market power', which can be thought of as the ability profitably to sustain prices above competitive levels or restrict output or quality below competitive levels. A provider with market power might also have the ability and incentive to harm the process of competition, for example by weakening existing competition or raising entry barriers.

3.2. Competitive constraints include:-

- Existing competitors that customers could switch their purchases to.
- Potential competition: the scope for new entry. Where entry barriers are low, it might not be profitable for undertakings in a market to sustain prices above competitive levels because this would attract entry which would then drive prices down.
- Buyer power: where buyers have a strong negotiating position with their providers, which weakens the potential market power of a seller.

What a well-functioning metering market would look like

3.3. For the metering market to function well, it is important that suppliers have a good choice of metering providers.

3.4. In a well-functioning market it should not be onerous for suppliers to switch providers for the meter points they supply gas to and the obstacles to doing so

should be as low as possible. In this way, it should also be feasible for other providers to enter the market and/or expand their market share.

3.5. Suppliers would not necessarily need to switch frequently. What is important is that obstacles to switching are low enough that it would be easy and inexpensive to do so and that meter points are thereby contestable. Competitive pressure would in this way be brought to bear on meter providers to price keenly and provide good service.

3.6. Suppliers would be able to exercise their buyer power by tendering for companies to provide metering products and services at their portfolio of meter points. Organising tenders can intensify competition among providers and, as mentioned in chapter two, appointing just one or two companies for many or all meter points can also yield efficiencies.

3.7. Easy switching and buyer power would also facilitate suppliers procuring each of the various products and services (MAP, MAM and ASP) from different companies if they wished to and where this was cost-effective. For example, they could procure MAM services from companies other than the meter owner (the MAP), AMR services separately from MAM/MAP and even AMR data services separately from AMR equipment. It is possible that separate procurement of AMR services (either separately from or along with AMR equipment) would stimulate the further emergence of ASPs offering niche services that combined the provision of consumption data with other energy management services. Companies might nevertheless still prefer to procure products and services together (whether because this reduces their administration costs or for other reasons, such as what we have been told is the improved reliability of data if ASP is provided by the MAM).

How well the market is working

3.8. Our analysis suggests that competition is not as effective as it could be. In particular, there are a number of barriers to switching that weaken competitive constraints on meter providers. There were identified from the responses to our requests for information and in meetings with suppliers and meter providers.

Barriers to switching

Meters

3.9. Market participants have told us that it is almost always necessary for the existing meter to be replaced in order for a supplier to switch provider for any meter point, which is costly. Replacing more complex and higher pressure meters is likely to be especially costly, as mentioned in chapter two. This represents a significant switching cost.

3.10. The alternative would be for the existing meter providers to sell or lease their meters in situ to incoming meter providers appointed by suppliers. However, they appear generally not to facilitate this.²⁶ Presumably they wish to avoid losing the rental income stream accruing to each meter. Thus they would be expected to agree to sell (or lease) a meter only if the sale price (or lease payments) provided compensation for the loss of future rental streams expected to accrue to that meter (and hence also the costs incurred in purchasing and installing it in the first place).

3.11. The level of rental payments is determined by the effectiveness of competition (see chapter four below). However, the risk of meters being replaced with no compensation would tend to reduce to some extent the price at which existing providers were willing to sell.

3.12. Meter providers might also not wish to sell or lease meters to other providers for strategic reasons, for example to maintain their market share or to prevent rivals growing and perhaps to avoid facilitating greater competition. However, we wish to make clear that this is a theory of harm as such a motivation for this behaviour might be rational, but we do not have evidence of it. Ongoing disputes between meter providers (for example stemming from unauthorised replacement of meters) could also make them averse to dealing with each other.

3.13. Even where the current meter owner was willing to sell (or lease) a meter in situ it could be time-consuming and costly for the supplier's preferred provider to try to arrange to buy it. The non-availability of reliable information for all meter points on the age, condition etc of the meter installation (see below) means it would be necessary to conduct a site visit to find this out, which would make the process costly.

3.14. Termination charges constitute a further cost to suppliers who wish to switch provider. All major players look to levy them in order to protect the investment they have made in purchasing and installing meter assets, as noted in chapter two. This is understandable in an environment where switching meter provider typically involves removing existing meter assets. However, we note that if existing meter providers were to agree to sell or lease meter assets to incoming providers there would be no need to levy termination charges.

3.15. Meter replacement also entails inconvenience to end users, including facilitating site visits to replace meters and, for larger installations in particular, disruption to their gas supply while this takes place. Suppliers may be reluctant to impose this on their customers.

²⁶ Thus, for example, NG has told us that it does not have a policy to sell in-situ meters other than where it finds that unplanned replacement of the meter is necessary. However, it said that it would sell other parts of the meter installation (pipework etc) *after* a meter had been replaced by another provider.

AMR devices

3.16. It is similarly generally necessary for a new AMR device to be installed and to incur termination charges in order for a supplier to switch provider of the AMR device. The fact that AMR devices are not all interoperable²⁷ also means it may be necessary to install a new AMR device in order to switch provider of AMR services (ie data provision). In any case, we understand that many suppliers prefer the ASP to be the MAM as this simplifies their administration and makes for enhanced efficiency and robustness of the data service. Thus meter replacement would often be accompanied by AMR replacement.²⁸

3.17. There are indirect costs associated with replacing an AMR device too:-

- the supplier may lose data;
- it may present a logistics challenge in terms of surveying the meter;
- it is necessary to ensure compatibility with the consumer's energy management systems;
- it requires a Meter Pulse Utilisation (MPU) agreement with the meter provider; and
- some MAMs charge to add an AMR device to a meter so it can make more sense to pay for a new meter.

Meters and AMR devices

3.18. The costs of replacing meters and AMR devices are incurred by the appointed provider(s) rather than the supplier directly but would be recovered from the supplier through rental charges. Termination charges are incurred by suppliers directly.

3.19. The costs of switching outlined above²⁹ are likely to deter switching as they are high in relation to any reductions in the level of metering charges that might be achieved by doing so. In particular, the cost of replacing a meter is many times the annual rental on a meter. For example, we understand the cost of purchasing and

²⁷ Unlike smart meters, AMR devices are not required to be built to standard specifications that facilitate interoperability.

²⁸ Indeed a recent review (the RGMA-MAMCoP Review) of the code of practice for MAMs (MAMCoP) agreed an amendment to this that when a MAM removes a meter it should also remove and replace all the components of the existing meter installation, including the AMR device (see Appendix 1).

²⁹ Note that switching costs are incurred for each meter point for which the supplier wishes to change provider. If a gas supplier wanted to switch to a preferred provider for a number of its customers' meter points, the costs incurred would depend on the total of the switching costs at all those meter points.

installing a U6 meter is approx. £70, whereas the corresponding annual rental charge for this meter is around £15.

3.20. The switching costs thus confer a degree of market power on the existing meter providers. Given that replacement of a meter is likely to be particularly costly for more complex and higher pressure meters, the competitive constraint on the owners of these meters is likely to be less than for other meters. As the incumbent provider, NG appears to retain a higher share of such meters (see chapter two).

3.21. High switching costs restrict competition as they form a barrier to entry and expansion. This is particularly problematic because a meter provider must win customers almost entirely from other providers given that this is a mature market (ie existing non-domestic meter points are already signed up to meter providers and there are very few genuinely new meter points, such as new connections to the gas network).

Concentration

3.22. Switching costs help explain the continued high concentration in gas metering markets more than ten years after being opened up to competition (see chapter two).

3.23. They also mean that once the AMR and smart meter rollout programmes are concluded, further significant changes in market shares will be unlikely and market shares may be expected to stabilise. Indeed suppliers are actually more locked in to providers in the period following replacement of meters as termination charges tend to be highest in the years immediately following installation of a new meter (or AMR device). In addition, where end customers experienced disruption from meter exchange, they may be reluctant to go through that again.

3.24. Absent changes to the costs of switching or other disruptive events akin to the AMR/smart meter rollout programmes it would likely be difficult for other providers to grow in the way that EA and SMS have in recent years.

Sunk costs and loss of assets from meter replacement programmes

3.25. Entry may be deterred by the fact that it incurs costs (purchasing meters and/or AMR devices and installing them) which are not recoverable on exiting the market (unless the provider can sell these assets rather than have them removed). These sunk costs are high relative to a provider's variable costs (notably the costs of maintaining meters).

3.26. Indeed providers not engaged in the meter replacement programmes accompanying AMR installation are at risk of having their meters replaced and thereby potentially losing their assets. This makes investment riskier and finance more difficult to obtain. This comprises a barrier to entry and expansion. It is unusual in markets generally for firms losing market share to lose their very assets

in the process.³⁰ The threat of meter removal may also be used by suppliers to exert pressure on providers in relation to prices, which could yield benefits for consumers.

3.27. We were told it was more difficult for smaller MAMs to protect their assets with termination charges. In fact a number told us that suppliers had not signed contracts with them. Even where they had done so, a number of providers felt unable to apply them as this would run the risk of antagonising their customers. Suppliers could switch away from them, entailing replacement of their meters. The future rental income they would forfeit might be greater than the termination charges they could levy. Termination charges applicable to old meters would be relatively low, reflecting depreciation and/or reduced rental payments foregone.³¹

3.28. Meter replacement means that not only do providers lose their return on investment (ie rental charges, which represent a large element of meters' value) but they also incur costs in collecting, refurbishing and storing meters that have been replaced. They may lose the meters entirely if either they are not informed of their meters' removal and storage location; the meters are lost or damaged; or their face value does not justify retrieving and refurbishing them. The proposed changes to MAMCoP following the recent RGMA-MAMCoP Review (see Appendix 1) help to clarify the process for returning meter equipment to owners.

3.29. Meter replacement may also act as a disincentive for meter installers to own meter assets, which is a route by which entry to MAP has traditionally occurred.

3.30. Some respondents told us that the meter replacement programmes of EA and SMS can also lead to a shortage of engineers for other providers.³² However, the far bigger smart meter rollout may also be having an effect in this regard.

³⁰ Thus:-

- One small gas supplier said smaller MAMs were struggling due to the risk of their meters being taken out.
- A small meter provider told us it had been approached by a MAM looking for a buyer. Uncertainty about the longevity of its meter portfolio meant this provider's valuation of this company's asset base was less than half what it would have been some years before.
- Another small MAM told us that it had been threatened with having its meters removed by a supplier's preferred MAM unless it reduced its prices.

³¹ Termination charges also appear not to be applicable in the case of switching by the end customer, ie where the incoming supplier removes the meter but the termination charges were agreed with the previous supplier.

³² One small provider told us it had decided to exit the market (no longer installing meters and just managing its legacy portfolio or until it is sold to another MAM). This was due to the loss of technical skills to support meter installation but it is not known whether this related to a shortage of engineers attributable to other companies' meter replacement programmes.

Scale advantages

3.31. We were told that gas suppliers prefer to use providers that can carry out both metering and AMR works and are of sufficient size to:-

- meet AMR rollout plans and timescales
- handle a large portion of their meter points as they want to have a relationship with them and manage delivery of the service to their customers
- cover operational risk (eg where they have no alternative but to replace a meter asset) and
- offer high quality service (out of hours, stock levels maintained etc).

In addition they prefer not to deal with a large number of providers (especially with issues around different AMR data formats).

3.32. We also understand that the size of NG and the level of installation activity of companies involved in meter replacement programmes confer significant economies of scale upon them because they:-

- can buy meters in bulk at a cheaper unit price
- have cheaper access to capital
- have lower installation costs as they have more buyer power with their sub-contractors (given some contractors' dependence on their business) and
- have installed or are installing a greater number of meters per geographic area, which makes for lower costs in visiting those sites to maintain and install them, respectively.

3.33. Companies involved in meter replacement programmes also enjoy economies of scope in replacing meters at the same time as installing AMR devices.

3.34. Suppliers' preference for using large providers and the economies of scale and scope in the gas metering market mean that a potential entrant is likely to need to enter the market on a significant scale and with a full range of products and services in order to compete effectively. This is liable to be costly and take time and, particularly in view of the sunk costs and risk of losing assets referred to above, represents a barrier to entry.

3.35. Quite apart from discouraging competition by preventing entry, these factors appear likely also to affect competition between those providers already in the market. There seems to be a sharp distinction between those providers that benefit

from scale advantages (whether because they are large or are growing rapidly and so carrying out lots of installations) and those that don't. Thus the former are at a competitive advantage and competition between the two groups is likely to be distorted, such that it may become less likely that the latter are able to compete effectively.

Bundling of products and services

3.36. We understand that some MAPs may leverage their strength to the MAM market by not allowing other companies to provide a MAM service in respect of their meters. This makes it difficult for would-be MAMs to provide this service without owning meters and for suppliers to appoint a MAM other than the MAP.³³ Bundling might also impede the development of a data-only AMR service separate from provision of the AMR equipment (as outlined above).

National Grid price statements

3.37. The requirement for NG to provide statements of its prices to suppliers as well as to Ofgem was designed to counter the adverse consequences of NG's monopoly position when the market was opened to competition (see chapter two). As NG's market share has reduced, it has become less relevant.

3.38. NG previously published its prices ('the Blue Book') and this may have contributed to establishing its prices as the benchmark to be emulated by other providers. NG providing price statements to suppliers may have an effect of facilitating the continued dissemination of NG's prices to other providers, whether because some suppliers are also meter providers or because other providers will be shown these statements by suppliers during negotiations.

3.39. Some providers told us they set their prices based on NG's and we noted that prices quoted by one or two providers to some suppliers corresponded to NG's more or less exactly.

Information about meter points

3.40. The RGMA Baseline (see Appendix 1) refers to the process by which data is transferred between MAMs and suppliers and (where shippers are separate companies) from suppliers to shippers. Shippers in turn provide updates to the register of supply points (the 'Register') held by Xoserve Ltd on behalf of gas

³³ In its Decision following its Investigation into National Grid in relation to the provision and maintenance of domestic-size gas meters (see chapter two) Ofgem raised the possibility that MAM could develop into a separate market in relation to domestic gas metering: https://www.ofgem.gov.uk/sites/default/files/docs/2008/03/national-grid-competition-act-decision-2708_0.pdf (paragraphs 3.30-3.31).

transporters (GTs)³⁴, which is the repository for information about gas meter points. The transfer of information from shippers to Xoserve is governed by the Uniform Network Code (UNC)³⁵.

3.41. The inconsistency of arrangements for the transfer of information between suppliers and MAMs, for example relating to changes of MAM, was mentioned by some parties as a factor that hindered the effective working of the market.

3.42. The RGMA-MAMCoP Review sought to clarify the process (see Appendix 1). However, it remains the case that the method of communication used for these data flows varies and where email is used there is no defined format: it can take the form of a list of data items in the body of the email or an attached spreadsheet. There also remain concerns that there are inaccuracies in what is required to be sent and that the data flows will not always be sent between parties. In particular, there may be little incentive for suppliers to provide information accurately and promptly. There is also no strict obligation for them to do so as a number of the requirements relating to RGMA data flows are on a reasonable endeavours basis. Thus for some data types information may not get passed on to update the Register.

3.43. The difficulty of obtaining reliable information about meter assets makes it less feasible for a meter provider appointed by a supplier to purchase or lease them in situ. The Register does include information fields for the meters installed at each meter point that would be required by incoming providers wishing to purchase or lease them. These include the make, model, year of manufacture and year of installation of the meter. However, the quality of the records held in the Register as updated by shippers is in some cases not reflective of the actual physical assets. Corresponding information about AMR devices (other than embedded meters) is not included in the Register.

3.44. The current industry data flows also mean that the identities of MAPs (which may differ from the MAM at any meter point) are not recorded on the Register. As mentioned in chapter 2, for a significant number of meter points the identity of the MAM is also either not recorded in the Register or is recorded inaccurately.³⁶

3.45. Recent changes mean that updates to the Register should now include whether there is an AMR device and the identity of the AMR service provider, which may often be the provider of the AMR device. However, shippers are required to

³⁴ The gas distribution networks and National Grid Gas National Transmission System are collectively known as the gas transporters.

³⁵ The UNC is administered by the Joint Office of Gas Transporters. UNC documents can be found at www.gasgovernance.co.uk. Section U of the UNC covers the requirements of the UK Link (Xoserve's communication network) and the UK Link Manual in the UNC sets out the data to be submitted by shippers to Xoserve etc

³⁶ The identity of the MAM is held on the register for the purpose of facilitating the change of supplier process. (UNC Section M3.2.18 sets out the rules regarding shipper provision of MAM data and SPAA Schedule 22 Section 4 sets out the associated Supplier obligations.)

include the identity of the AMR service provider in updates to the Register only where they have this information.³⁷

3.46. We understand that the meter provider may sometimes not be informed of a change of supplier, in which case it would be unable to invoice the new supplier for meter rent and might thereby lose income. Difficulty in identifying the MAP (or the MAM) on the Register may also mean that they are sometimes not paid by suppliers for meters they provide. Any such potential loss of income would be priced into meter rent levels. In addition, we have been told that where the Register shows the wrong MAM there is a risk that a new supplier following customer churn will appoint the MAM shown on the Register. In this case the supplier could be billed twice: by both the true meter provider and the MAM just appointed.

3.47. In attempting to resolve this issue, MAMs are limited in the information they can obtain about records held on the Register³⁸ where they are not shown as the MAM. Where a MAM is recorded against a supply point on the Register, UNC and SPAA rules permit it to access a general set of data items from the Data Enquiry Service operated by Xoserve³⁹. Accordingly, Xoserve told us that a MAM can request from it a report on either the full portfolio of sites where it is recorded as the MAM⁴⁰ or on those meter point reference numbers (MPRNs) in a list it provides to Xoserve for which it is the registered MAM. However, where a MAM is not recorded against a supply point Xoserve is permitted to provide it with just the identity of the supplier and limited information about the meter asset at those supply points.⁴¹

3.48. MAMs are reliant on suppliers to get such errors in the Register corrected on their behalf as they, through the shippers, are the source of data supplied to Xoserve. This could be problematic where a supplier was not paying the MAM because it was not shown on the Register. Smaller MAMs believe that they may be at a particular disadvantage in this regard because they perceive that larger MAMs

³⁷ A modification to the UNC was implemented in April 2015 requiring the shipper to record against a meter point the existence of an AMR device and the AMR service provider (where it has the relevant information). Xoserve is currently operating an industry-agreed interim process to capture and hold this data on the Register, with an enduring solution due to be implemented in October 2016.

³⁸ Data provided to the Register is provided under the terms of the UNC and is defined as protected information, which cannot be shared without specific modifications to the UNC.

³⁹ The costs for accessing the Data Enquiry Service are set out in the Agency Charging Statement, which is available on the Joint Office website at:

<http://www.gasgovernance.co.uk/sites/default/files/AgencyChargingStatement%20Approved%2002%20Nov%2015.pdf>. Costs are currently stated as £3.10 per month per account.

⁴⁰ Xoserve said it charged approximately £300 for each full portfolio report although the cost varied according to a number of factors such as the size of the report and the means by which the report was delivered.

⁴¹ A modification to the UNC similarly permits the sharing of defined data items with the MAP. Where Xoserve is able to validate the MPRN(s), meter serial number and meter model details submitted to it by the MAP with its records, it will share certain data items with it, including the identity of the MAM; meter installation and removal dates; the meter point status; the identity of the supplier and effective date.

(including NG and those with close working arrangements with suppliers) may find it easier to get suppliers to provide the correct updates.

3.49. The identities of previous MAMs are not currently retained on the Register as there is no requirement for Xoserve to hold this information. If information on the Register is used as the basis for the payments made to MAMs, this might mean that past meter charges could remain outstanding.

3.50. A further complication is that when the end customer switches supplier (and the shipper changes as a result), the previous shipper ceases to be entitled to access the Register for that meter point. This could be relevant where the new supplier doesn't acknowledge the MAM.

Buyer power and tendering

3.51. Gas suppliers, and particularly larger ones, are liable to have a degree of buyer power, which could mean they are in a position to strike reasonable deals with meter providers. In particular, they may be able to intensify competition by organising competitive tenders for companies to bid to provide metering products and services. However, their buyer power vis-à-vis metering providers may be expected to be constrained by factors outlined above that affect their ability to switch providers and thereby weaken their negotiating position.

3.52. The need for non-domestic gas suppliers to enter into contracts to install AMR devices (see chapter two) has offered scope for overcoming the switching costs referred to above. This is because the cost of replacing meters is significantly reduced where site visits are taking place anyway in order to install AMR devices.

3.53. The AMR rollout programme provided an opportunity for suppliers to invite providers to tender to do this. Where a contract to install an AMR device has not been entered into, the smart meter rollout programme over the next few years will present another such opportunity. However, not all suppliers have gone through a competitive tender for AMR installation. Some appear to have agreed contracts on the basis of discussions with providers.

3.54. The extent to which such tenders are likely to stimulate effective competition for the market is likely to be constrained by:-

- Suppliers judging the rates quoted against the benchmark of the current level of prices, which are affected by the costs of replacing meters and reduced competitive pressure on providers (see chapter four).
 - In the case of the AMR rollout, the limited pool of companies in a position to tender effectively. Of those, just two providers appear to have a business model based on meter replacement and the economies of scale that position them to compete effectively for these contracts. Indeed, some providers told us they didn't believe meter replacement was
-

appropriate and didn't wish to have to do this. Suppliers reported mixed experiences of the competitiveness of responses from prospective AMR providers⁴².

- The infrequency of such tendering opportunities. The AMR and (for smaller meters) smart meter rollout programmes are one-off occurrences. The next occasion when it will be possible to replace meters without incurring additional expense is when they develop faults. However, these meters may continue to function for 20 years or more.

⁴² One supplier told us, for example, that in holding discussions with prospective AMR providers it had not encountered much competition from providers. However, another supplier told us it was happy with the quantity and quality of responses it received to its tendering document.

4. Outcomes

Chapter Summary

The reduced competitive constraints on providers, together with the costs incurred in replacing meter assets and paying termination charges appear to result in inflated meter charges. These can be expected to feed through to higher bills for end customers. There may also be some indirect effects on competition in the retail gas supply market.

Higher meter rental charges

4.1. The costs incurred in replacing meters, limited competition and raised financing costs (as shorter asset life means riskier investment) are liable to lead to higher meter rental charges. Thus:-

- Analysis of data on costs and prices submitted by one meter provider suggested prices being set to earn comfortable rates of return net of inflation, with further mark-ups of 15-20%⁴³ added on top that do not appear to be related to costs. It's also possible that the lack of competitive pressure means the level of costs is not efficient, in which case the effective mark-up on the competitive level would be higher still.
- This appears to be representative of the industry. Thus, for example:-
 - One provider said the payback period for meter replacement is four to five years (with providers continuing to earn rent payments which increase at RPI after that).
 - The figures provided in chapter two for purchase and installation of a domestic-size (U6) meter (approx. £70) and the annual meter charges (approx. £15) also suggest that charges are relatively high.
 - We were told that independent gas transporters (IGTs) often retain gas meters (both domestic and non-domestic) because of the high returns.

These higher meter rental charges for suppliers can be expected to feed through to end customers in their bills.

⁴³ 20% for domestic-size (U6) meters; 15% for all other meters.

Possible reduced competition in the retail gas supply market

4.2. Competition in the retail gas supply market may be adversely affected because:

- Disruption to end customers due to unnecessary meter replacement programmes may make them resistant to further switching of meter provider. Where meter replacement follows the end customer switching gas supplier (where the new gas supplier has a different preferred provider) it could make the end customer less likely to switch gas supplier in future.
- Given suppliers' preference for procuring metering services from only one or, at most, a few providers, end customers switching gas supplier is liable to lead to the supplier switching provider of meter and/or AMR device. The cost of doing this could thus be said to be a cost of attracting end customers.
- Lack of competition means fewer providers. Some MAMs don't work in outlying areas and a small supplier said it faced difficulties in accessing metering services in outlying areas (which could affect its ability to compete there).
- Potential new entrants might be at a competitive disadvantage by being unable to benefit from tenders for the AMR rollout programme.

5. Conclusions and next steps

Conclusions

5.1. The requirement for suppliers to install AMR devices has led to significant change in the non-domestic gas metering market in recent years. It has enabled newer entrants to compete more effectively with the former incumbent provider and the growth of some providers on the back of this has brought investment to the sector. Nevertheless, more than ten years on from market opening, the market remains highly concentrated.

5.2. In order for the metering market to function well, it is important that gas suppliers have a good choice of metering providers and that there aren't unnecessary obstacles to switching providers. It is more likely in this case to be feasible for providers to enter the market and for existing smaller providers to expand their market share.

5.3. We are concerned that competition in the non-domestic gas metering market does not appear to be working as well as it should be. In particular, our review has found that the costs incurred when suppliers switch meter provider are significant: notably the cost of replacing the existing meter or AMR device, but also termination charges levied by the current providers. It is likely to be particularly costly to replace more complex and higher pressure meters and NG appears to retain a particularly high market share here. These obstacles to switching constitute a barrier to entry and expansion.

5.4. This is likely to result in reduced competitive constraints on providers, particularly for more complex and higher pressure meters. This, together with the costs involved in switching, are likely to lead to higher metering charges. These high charges can be expected to feed through to higher energy bills for non-domestic gas customers. There may also be an adverse effect on competition in the retail gas supply market.

5.5. Suppliers may be able to offset these raised costs to some degree by leveraging their buyer power through competitive tenders for the provision of metering services. The smart meter rollout presents another opportunity to do this although the market is likely to stabilise again when this comes to a conclusion.

Next steps

5.6. We intend to take a number of actions to address the concerns we have identified and, in doing so, improve the functioning of the non-domestic gas metering market. We believe these are proportionate to the issues identified and recognise the dynamic nature of the market. These actions - and the aspects of the market they are designed to address - are outlined below.

Reducing switching costs

5.7. In order to minimise the costs incurred by meter providers appointed by suppliers in taking over meter points, they would need to be able to adopt the existing equipment in situ, buying or leasing it from the previous provider rather than having to replace it. With outgoing providers having thus been compensated for the value of their assets, there would be less justification for them charging suppliers for terminating their contracts. To this end, and as a minimum, it is important that termination charges are set to decline with the age of the meter. Given its high market share, we would expect any termination charges levied by NG, for example, to be on this basis.

5.8. We will explore the scope for encouraging meter providers to sell or rent meters (and associated components of the metering system) in situ to incoming MAPs (and end customers where they wish to do this). We intend to engage actively with them to agree the principles that might guide this so as to embed these principles in the market. We intend to chair a meeting of market participants later in the year at which we expect market participants to come with proposals to make the market work better in this way. For example, SPAA and/or MAMCoP may have a role in ensuring that the processes that would support this are in place (such as responding to requests to purchase or lease particular meters within a set time frame).

5.9. We also call on gas suppliers to promote the sale and rental of meter assets in their dealings with providers as a means of reducing the meter rental charges they pay in order that the savings can be passed on to end consumers. Indeed, suppliers may wish to take note of the description in this report of how the market works so as to inform their procurement of metering services. We would encourage them to take opportunities to tender to appoint meter providers for the meter points they supply gas to in a way that minimises future rental payments, termination charges and disruption to their customers. The rollout of smart meters presents an opportunity to tender for their installation.

5.10. We understand that switching works more smoothly in the electricity metering market so we will be looking to see whether there are lessons to be learned there.

Improving data quality

5.11. Data that are currently available to market participants about the meter providers and the meter and AMR assets installed at each meter point are limited and often not accurate or complete. This is not compatible with a well-functioning market. In particular, it reduces the scope for incoming providers to adopt meter assets in situ, which requires accurate information about the identity of the existing provider(s) and the assets (model, age etc) to be readily available for each meter point. The lack of reliable data may also mean that some MAMs do not get fully recompensed for the meter assets they provide and, in addition, hinders effective monitoring of the market by us.

5.12. We want to see market participants work together to develop a plan by Autumn 2016 to bring the available data up to a suitable standard. This plan will need to have elements covering: (1) the ongoing transfer of information between market participants and onward to the Register, (2) the data fields that are held on the Register and (3) improvements to the accuracy of records held on the Register. We outline below what is called for and current initiatives in relation to each of these.

(1) The ongoing transfer of information between market participants and onward to the Register

5.13. There is not an effective incentive or requirement for suppliers to ensure the data they provide to shippers under the RGMA Baseline is accurate and submitted on a timely basis. With shippers subsequently required by the UNC to pass data they hold on to the Register, this means the information that is held on the Register about meter assets and MAMs may not be accurate or complete.

5.14. The RGMA-MAMCoP Review has sought to clarify the RGMA Baseline processes. The changes to the RGMA Baseline recommended by the RGMA-MAMCoP Review will be progressed as part of a further RGMA review in 2016. Once these changes have been made, we look to SPAA to prioritise moving to a single transfer mechanism and monitoring and enforcing the use of accurate and timely submission of the RGMA data flows, including those sent from suppliers to shippers.⁴⁴

5.15. Moreover, some important information is not included in data flows provided to the Register about each site, notably the identity of the MAP, the identity of the provider of the AMR device (although it may be the same as the AMR service provider, the identity of which shippers are required to provide where they have this information) and details of any AMR device.

5.16. Changes to the data items contained within RGMA data flows would be progressed as SPAA Change Proposals. Thus we understand from Xoserve that it has promoted a change to SPAA Schedule 35, which would mandate the supplier to provide AMR service provider details to the shipper. Other suggested changes to RGMA data flows could either be added to the scope of an RGMA review that is being initiated this year⁴⁵ or a SPAA Party could raise a specific change to take these forward as an individual Change Proposal. It was acknowledged during the RGMA-MAMCoP Review that adding data items to the data flows could be costly as they would require change to companies' IT systems. However, we believe it is important that the identity of the MAP, the identity of the provider of the AMR device and details of the AMR device are added to data flows in order that they can be provided to the Register.

⁴⁴ We understand that auditing of data flows may be difficult unless they are all sent on the same network, as occurs in electricity, where we gather they are conveyed via the Data Transfer Network (DTN).

⁴⁵ We understand this is due to commence in April 2016.

5.17. Adding the identity of the providers of meters and AMR devices and details of AMR devices to the ongoing provision of data to update the Register would require a UNC modification. Ofgem limited power to modify industry codes, such as the UNC, directly, so we call on the industry to do this.

5.18. Xoserve has initiated remitting information to shippers about sites where the MAM field in its records is blank and telling SPAA the number of blanks of each shipper. Xoserve could also report on the timeliness with which data flows are passed on to it by shippers. We note that at a meeting of the Metering Schedule Review group⁴⁶ on 27 January 2016 Xoserve took an action to determine whether it could support the industry to that effect and feed back on associated costs and specifications.

5.19. More broadly, Ofgem has made a decision to modify the UNC to establish a Performance Assurance Framework (PAF)⁴⁷. This is in order to improve the accuracy of gas settlements but it is expected to have wider benefits too. For example, improving the standard of data quality would improve the efficiency of the change of supplier process. Information about the meter at each supply point including the MAM is expected to be within the scope of the PAF. We intend to explore how this could help to resolve the data issues that affect the metering market.

(2) The data fields that are held on the Register

5.20. A particular issue is that the Register does not record the identities of meter and AMR device providers and details of AMR devices⁴⁸. Xoserve has indicated that functionality to capture and maintain data on these would require enhancement to the design of the UK LINK replacement system. This could only be incorporated into a future system release some time after this is implemented (the target date for this is October 2016).

5.21. The identities of previous MAMs are also not currently retained on the Register. However, functionality to hold the history of MAM identities is being included in the replacement UK LINK system. Note that this will only record MAMs in place from when this goes live in October 2016 and will not apply to MAPs or AMR service providers.

(3) Improvements to the accuracy of data held on the Register

5.22. MAMs face difficulties in obtaining information about meter points where they are not currently recorded as the MAM on the Register and in correcting errors in

⁴⁶ Minutes of meetings available at www.spaa.co.uk

⁴⁷ <http://www.gasgovernance.co.uk/sites/default/files/UNC506V%20D.pdf>. In particular, UNC506V/UNC506AV would establish a Performance Assurance Committee as a sub-committee of the Uniform Network Code Committee.

⁴⁸ Xoserve has added fields to the Register to record the existence of an AMR device and the identity of the AMR service provider (which may also be the provider of the AMR device).

records. Where a MAM is not recorded against a supply point Xoserve is permitted to provide it with just the identity of the supplier and limited information about the meter asset. Xoserve has told us that where reports requested from it identify mismatches or other queries, it has offered follow-up investigation to help resolve questions of meter ownership. We regard this as a key issue.

5.23. Xoserve also told us about an initiative it has launched to improve the quality of the data records on the Register. Supported by the GTs, Xoserve seeks to ensure that where gas is likely to be taken from a supply point it is correctly registered to a shipper. During 2015 it undertook a portfolio comparison exercise in relation to the population of supply points that were unregistered⁴⁹ or shipperless⁵⁰. It provided details of these sites to each MAM; where a match was found the MAM was requested to provide some meter assets details and the name of the supplier. Where responses indicated the existence of a meter steps were initiated to get these confirmed by the relevant shippers, which would ensure the Register was updated with shipper, meter asset and MAM data. We understand ten MAMs responded but that some larger MAMs did not participate. A second exercise is being prepared to continue this work and we encourage MAMs to participate.

5.24. In November 2015 Ofgem launched a Significant Code Review⁵¹ as part of our programme of work⁵² to deliver fast, reliable switching for all domestic and non-domestic gas and electricity consumers. As part of this programme we propose to establish a Central Registration Service (CRS)⁵³. It is envisaged that the CRS will be the master record for the industry data needed to support the switching process. This may include the identity of metering agents (such as MAPs), along with the supplier linked to each supply point.^{54,55} It is yet to be determined whether the CRS will be in addition to the Register held by Xoserve, or replace it. The findings of this market review in relation to the data items about meter assets and access to that information that market participants (including meter providers) require will help to inform that programme of work.

⁴⁹ It is yet to be registered to a shipper

⁵⁰ It is registered with a shipper but now subject to an isolation and withdrawal event

⁵¹ <https://www.ofgem.gov.uk/publications-and-updates/switching-significant-code-review-launch-statement-and-request-expressions-interest-participate-programme-workgroups>

⁵² <https://www.ofgem.gov.uk/publications-and-updates/moving-reliable-next-day-switching-consultation-target-operating-model-and-delivery-approach>

⁵³ It is envisaged that the CRS will be governed under the Smart Energy Code (SEC).

⁵⁴ *Target Operating Model and Delivery Approach* document (https://www.ofgem.gov.uk/sites/default/files/docs/2015/02/tom-and-delivery-final_0.pdf) paragraph 6.09

⁵⁵ The Programme will examine what data items should be held centrally. A guiding principle will be that, where appropriate and where it better supports fast, reliable and efficient switching, the gaining supplier should not be dependent upon the losing supplier (or their agents) to obtain the information they need to make the switch and supply their new customer (*Target Operating Model and Delivery Approach* document, paragraph 6.11). In designing the new arrangements there will also be a need to identify and acknowledge the range of supporting contractual and working arrangements that are expected to be necessary to facilitate reliable next-day switching, for example in relation to the appointment of metering agents (*op cit*, paragraph 7.32).

Reviewing the current regulatory framework

5.25. Our review has raised questions about whether the current regulation remains appropriate in this area generally. In particular, the current regulatory arrangements relating to NG were put in place at the time the market was opened to competition over ten years ago. Since then, NG's market share has fallen significantly.

5.26. We will consider whether the regulation applying to NG remains appropriate, which will include considering whether it would be sufficient instead to rely solely on the Competition Act 1998.

Enhancing our monitoring

5.27. The market is currently undergoing a lot of change. We plan to build on the work we have undertaken in this review and the competition analysis we have developed to enhance our monitoring of the market. We anticipate that improved data provision by Xoserve will assist this.

5.28. In due course, we will review progress in terms of the actions outlined here and their effect on the state of competition in the market. If progress is not evident we will consider whether it might be appropriate to take other actions. There are a range of tools at our disposal. These include consulting on a market investigation reference to the CMA and changing licence conditions so as to require existing meter assets to be made available in situ through sale or rental to other providers. We have ruled these out at this stage as we believe there are other, more proportionate measures with the potential to remedy the factors that adversely affect competition. Nevertheless we will re-consider using them if we do not see an improvement in how well the market works.

Appendices

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Appendix 1 – Regulatory framework: MAMCoP and RGMA

1.1. Ofgem previously performed the role of approving MAMs but made licence modifications which transferred this role to become a function of the Supply Point Administration Agreement (SPAA – see below) from August 2012⁵⁶. Among other things, an approved MAM should meet the requirements set out in the Code of Practice for MAMs (known as MAMCoP – see below).

1.2. There is a degree of overlap with the scheme operated by Ofgem for approving meter installers and many approved MAMs are also Ofgem Approved Meter Installers (OAMIs). Ofgem is currently working with the SPAA Executive Committee (see below) to transfer the governance of the OAMI scheme to SPAA, which will help realise the potential synergies with MAMCoP.

MAMCoP

1.3. The Meter Asset Managers Code of Practice (MAMCoP), which was developed by a group of gas industry representatives, sets out the duties of a MAM. It covers all technical requirements for activities to be undertaken by a MAM and provides a route-map to compliance with the various regulatory requirements and industry standards. ASPCoP is the corresponding code of practice for AMR service providers.

1.4. SPAA has the function of approving MAMs, which involves meeting the requirements set out in MAMCoP, among other things. SPAA contracts with a third party⁵⁷ to review providers' compliance with MAMCoP competencies and procedures. Where instances of non-compliance are found, parties are required to remedy them in fixed timescales. Ultimately a provider could be found not to comply with MAMCoP, which would prevent it operating in the market, given that suppliers are required to use an approved MAM.

SPAA

1.5. The Supply Point Administration Agreement (SPAA) was created alongside the RGMA Baseline (see below). It provides a governance arrangement that standardises processes (relating in particular to how information is exchanged between market participants) which are not ordinarily covered by existing contracts or agreements but which are nonetheless important for transfer of consumers between suppliers. It

⁵⁶

https://www.ofgem.gov.uk/sites/default/files/docs/2012/06/120628_mamcop_letter_final_0.pdf

⁵⁷ The organisation that carries out audits under MAMCoP and assesses compliance of new MAMs so they can be accredited (the MAMCoP Registration Agent) is Lloyd's Register.

is a multi-party agreement which all domestic gas suppliers and transporters are required by their licences to accede to.⁵⁸

1.6. SPAA Ltd was created as the corporate vehicle responsible for ensuring the implementation and ongoing management of the SPAA. It is a joint-venture company established and maintained by all SPAA parties. The company's role is to administer the SPAA and undertake any development activities required under the scope of the Agreement. SPAA Ltd delivers this through an outsourced commercial service contract with ElectraLink Limited.

RGMA

1.7. Between 2000 and 2003 Ofgem and the industry completed the Review of Gas Metering Arrangements (RGMA). Among other outputs the review produced the RGMA Baseline document, which described processes that market participants (predominantly suppliers and MAMs) should follow and corresponding data flows they should send to and receive from each other. The processes covered by the baseline include: meter asset installation; meter asset removal; meter asset exchange; meter reposition; change of Gas Act Owner; change of MAM; and change of MAM with change of supplier.

1.8. The method of communication used for these data flows can vary⁵⁹. Where email is used there is no defined format: it could take the form of a list of data items in the body of the email or an attached spreadsheet.

1.9. SPAA includes requirements relating to suppliers' compliance with the RGMA although these are not strict⁶⁰ and MAMCoP includes a statement that MAMs should comply with the RGMA Baseline. However, there is no audit of compliance with it.

RGMA-MAMCoP Review

1.10. At its January 2015 meeting, the SPAA Executive Committee agreed to convene a Working Group to review the MAMCoP and RGMA documents to ensure that there is a clear and unambiguous set of requirements that are consistent across both documents. This review was initiated to address concerns raised by the Data Quality Working Group⁶¹ regarding the process for communication of metering details

⁵⁸ I&C gas suppliers are also required to accede to certain sections of the SPAA in order to discharge their licence obligations relating to the detection and prevention of energy theft via the Theft Risk Assessment Service.

⁵⁹ Data can be transferred using Electralink's Data Transfer Network (DTN), the UK Link Network Information Exchange (IX) or email. We understand that email is still used to transfer information by a number of smaller parties.

⁶⁰ These are contained within SPAA Schedule 22 ('SPAA Metering Schedule'). They include timescales for issuing various RGMA flows. Most of the requirements are on a 'reasonable endeavours' basis.

⁶¹ A cross-code group requested by Ofgem. The gas group included SPAA and UNC

and also by the MAMCoP Registration Agent regarding the clarity of the meter removal and returns process.

1.11. The Review had two parts: a review of the RGMA provisions linked to data flows between MAMs and suppliers and a review of MAMCoP provisions relating to meter replacement, return and transfer. It was precluded from getting involved in the underlying commercial arrangements (notably whether appointment and de-appointment occur by commercial agreement or by replacement of the meter).

1.12. The Review was carried out between April and October 2015. The following change proposals for amendments to MAMCoP were agreed:-

1. Clarification of the data items that should be sent from the old MAM to the new MAM where meter installations (or components) are transferred between MAMs (including MPRN; meter type; manufacturer; year of manufacture)⁶².
2. A requirement for MAMs to provide contact details and preferred methods of communication to facilitate contact for the receipt of flows of data items defined in the RGMA baseline and the return of meter equipment.
3. Change proposals in relation to the processes to be followed when MAMs remove meters and/or meter installation components⁶³ include:-
 - A requirement for incoming MAMs to remove and replace all the components of the existing meter installation (including AMR devices) unless alternative commercial arrangements have been made previously by the incoming MAM and the owner of the meter (the MAP).
 - Clarification of the process for returning meter equipment to owners including: the incoming MAM informing the meter owner of its removal within 30 days and of a storage address and contact details to facilitate collection of it. Where the owner's identity is not known and cannot readily be ascertained the incoming MAM is to make reasonable endeavours to identify the owner including e-mailing all MAMs.

1.13. The Review also highlighted potential changes to the RGMA data flows referred to above (new definitions, processes and items to be included). These were to reflect the proposed amendment to MAMCoP in respect of MAM-to-MAM flows referred to

representatives.

⁶² Clause 21 of MAMCoP

⁶³ Clause 19 of MAMCoP

above and also with a view to clarifying the process in terms of data flows following MAMs being de-appointed and appointed by suppliers (whether accompanying a change of supplier or not). During the Review it was acknowledged that it was difficult for MAMs to comply with the RGMA Baseline given the inaccuracies that exist in it. There will remain a concern even if these changes are made to the RGMA Baseline⁶⁴ that the required data flows will not always be sent between parties.

⁶⁴ Proposed changes to the RGMA Baseline took the form of recommendations for further consideration as part of a full review of the RGMA Baseline.

Appendix 2 - Glossary

A

AMR

Automatic meter reading. AMR devices translate the meter's pulse into a digital signal and are typically attached to conventional 'dumb' (ie non-smart) meters, although 'embedded' meters incorporate an integral AMR device.

ASP

Automatic meter reading (AMR) or 'advanced' meter service provision: provision of data recording and communications equipment and services, including management of data provision to gas suppliers.

ASPCoP

Code of Practice for AMR service providers.

G

GT

Gas transporter.

H

HHI

Herfindahl-Hirschman Index.

I

I&C

Industrial and commercial.

M

MAM

Meter asset management: installation and management (including maintenance) of meters. Also a company that does this (or a meter provider generally).

MAMCoP

Code of practice for meter asset managers.

MAP

Meter asset provision: ownership and associated financing of meters. Also a company that does this.

MPRN

Meter point reference number: a unique identifier for a meter point.

MPU

Meter pulse utilisation agreement.

O

OAMI

Ofgem approved meter installer.

R

RGMA

Review of Gas Metering Arrangements. Produced the RGMA Baseline document, which described processes that market participants (predominantly suppliers and MAMs) should follow and corresponding data flows they should send to and receive from each other.

S

SLC

Standard licence condition (common to a particular type of licence, eg gas suppliers' licence).

SPAA

The Supply Point Administration Agreement: provides a governance arrangement that standardises processes (relating in particular to how information is exchanged between market participants). SPAA Ltd. is the company responsible for ensuring the implementation and ongoing management of the SPAA.

SSC

Standard special condition (a licence condition covering gas networks).

U

UNC

Uniform Network Code.
