Department of Energy & Climate Change

Smart Meters, Great Britain, Quarterly report to end March 2014

STATISTICAL RELEASE: EXPERIMENTAL NATIONAL STATISTICS

12 June 2014

Any enquiries or comments in relation to this publication (including suggestions for developing the publication) should be sent to DECC's Smart Meter Statistics Team at the following email address: EnergyEfficiency.Stats@decc.gsi.gov.uk

This document is also available from our website at www.gov.uk/decc

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Executive summary

Introduction

This quarterly release presents statistics on the roll-out of smart meters in Great Britain. It includes information on the number of smart meters installed by the larger energy suppliers[1] (i.e. British Gas, EDF Energy, E.ON, Npower, Scottish Power, SSE and Utility Warehouse) in properties in the last quarter, and the total in operation as of 31 March 2014.

The Smart Metering Implementation Programme is currently in Foundation Stage, which began in March 2011. The Government is working with the energy industry, consumer groups and other stakeholders to put commercial and regulatory frameworks in place to support smart metering, trial and test systems, learn lessons from early installations and enhance the consumer experience. Most householders will then have smart meters installed by their energy company between quarter four 2015 and 2020. Further information can be found on the GOV.UK website.

The larger energy suppliers are currently installing smart, smart-type and traditional meters in domestic properties and smart, advanced and traditional meters in smaller non-domestic sites (an explanation of the differences between these meters is included on page 3 of this document).

Key points

- 98,600 smart meters (61,200 electricity meters and 37,500 gas meters[2]) were installed in domestic properties in quarter one 2014 (Chart 1 and Table 1). This compared to 95,300 smart meters installed in quarter four 2013. A total of 394,500 smart meters have been installed to date.

- 344,700 smart meters are now operating in 'smart mode' in domestic properties across Great Britain (Table 2). This represents 0.7 per cent of all domestic meters operated by the larger suppliers.

- 2,200 smart meters (2,200 electricity meters) and 17,400 advanced meters (17,300 electricity meters[2]) were installed in smaller non-domestic sites in quarter one 2014 (Chart 2 and Table 1). This compared to 2,600 smart meters, and 28,500 advanced meters, installed in quarter four 2013.

- 492,200 smart and advanced meters are now operating in smaller non-domestic sites across Great Britain (Table 2). This represents 18.9 per cent of all smaller non-domestic site meters operated by the larger suppliers.

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[1] For the purposes of smart meter reporting, 'larger energy suppliers' are classified as those with a customer base of more than 250,000 gas or electricity meters.

[2] Individual numbers are rounded independently and this can result in totals which are different from the sum of their constituent items.

Chart 1 – Number of smart meters installed by the larger energy suppliers in domestic properties, by fuel type and quarter

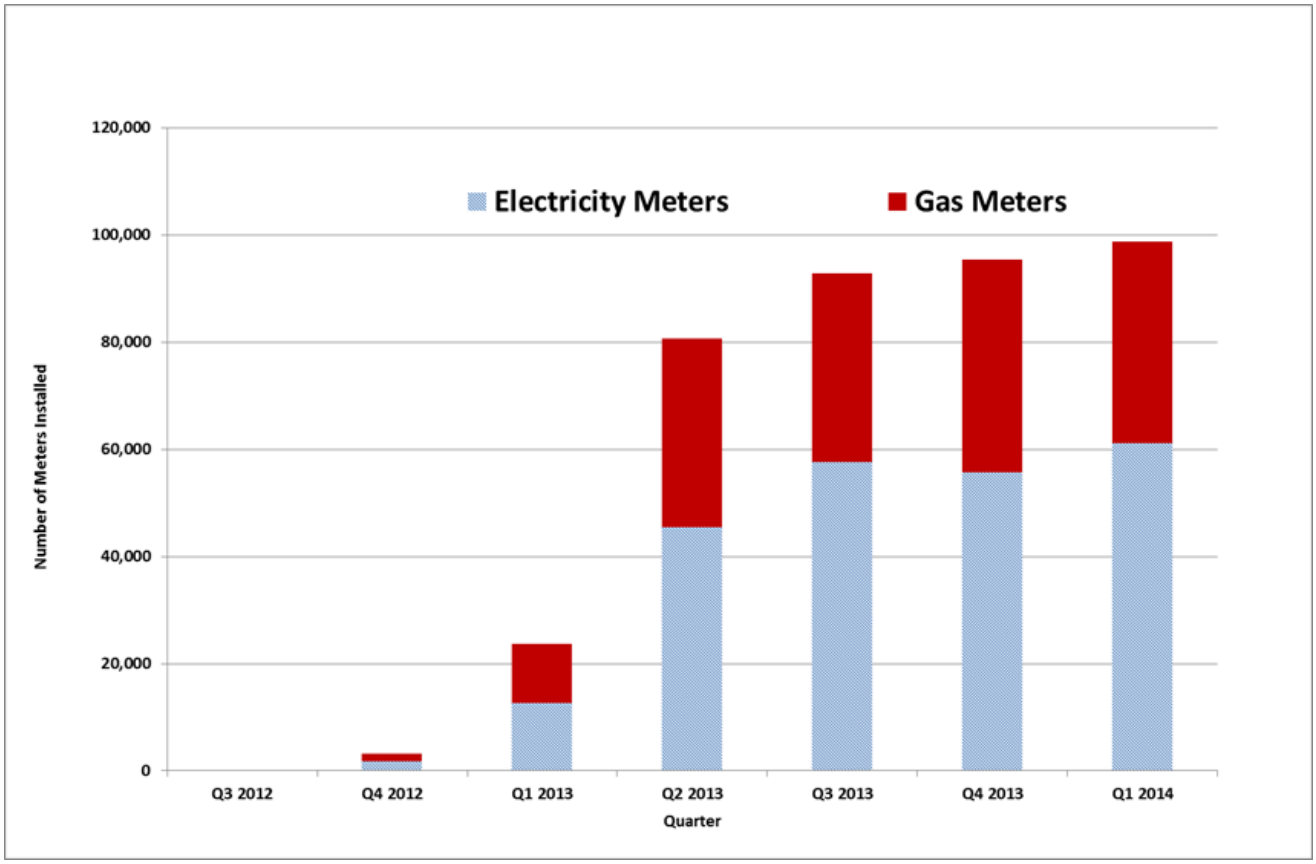
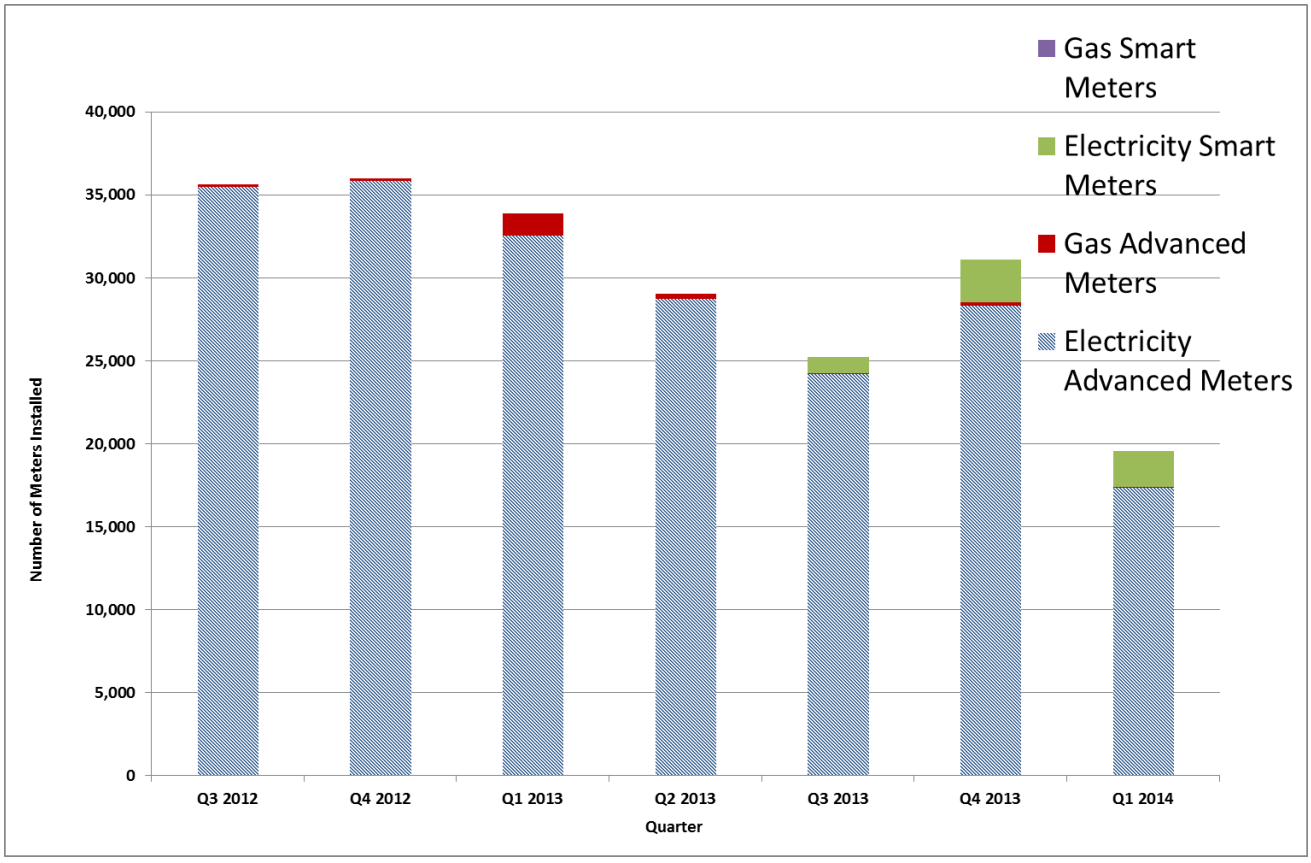


Chart 2 – Number of smart and advanced meters installed by the larger energy suppliers in smaller non-domestic sites, by fuel type and quarter



Types of gas and electricity meters

Smart meters

Smart meters are the next generation of gas and electricity meters and they can offer a range of intelligent functions. Consumers will have near real time information on their energy consumption to help them control and manage their energy use, save money and reduce emissions. Smart meters will also provide consumers with more accurate information and bring an end to estimated billing.

A smart meter is compliant with the Smart Meter Equipment Technical Specification (SMETS) and has functionality such as being able to transmit meter readings to suppliers and receive data remotely. Energy suppliers are required to install SMETS compliant smart meters in domestic and smaller non-domestic sites by the end of 2020 (with the exception of some advanced metering being installed in smaller non-domestic sites - see below). Each energy supplier reports the number of smart meters it has installed and is operating in smart mode[3] to DECC and includes both meters that are SMETS compliant, and those they expect to upgrade to become SMETS compliant. Suppliers have indicated that most, if not all, of the smart meters currently installed will need to receive updates, which are expected to be delivered remotely, before they are fully SMETS compliant.

Advanced meters

In smaller non-domestic sites, advanced meters may be installed as an alternative to SMETS-complaint smart meters until April 2016. They may also be installed between April 2016 and December 2020 where a contract to install such meters was in place in April 2016. These meters will not have to be replaced with SMETS meters before 2020.

As a minimum, an advanced meter must be able to store half-hourly electricity and hourly gas data, to which the customer can have timely access, and the supplier have remote access. However, meters described as “advanced” in this report may have many of the additional functions found in a smart meter that meets the Government’s technical specification.

Smart-type meters

Some suppliers have chosen to make an early start by rolling out smart-type meters to domestic properties before smart meters were available. Smart-type meters offer some of the functionalities included in SMETS. Suppliers have learned lessons from installing and operating smart-type meters, which will benefit the smart meter roll-out and their customers have had early access to some of the benefits of smart metering. Nevertheless, smart-type meters installed in domestic properties will need to be replaced with SMETS compliant smart meters by the end of 2020 in accordance with suppliers’ roll-out obligations. All data relating to smart-type meters are referred to as such, in this report (tables 2 -2b); ‘smart-type’ meters are not counted as ‘smart meters’.

[3] Smart Mode relates to a smart meter which is (fully functional and) providing information on energy use (and other information) to the customer (via the Home Area Network to the In-Home Display (IHD)) and to the energy supplier (via the Wide Area Network).

Traditional meters

Traditional meters are currently found in most homes and smaller non-domestic sites and do not have any smart capability. Traditional meters will be replaced by smart meters (and in some cases advanced meters in smaller non-domestic sites) during the smart meter roll-out.

Types of Properties

Domestic properties

The customer is supplied with electricity or gas wholly or mainly for domestic purposes.

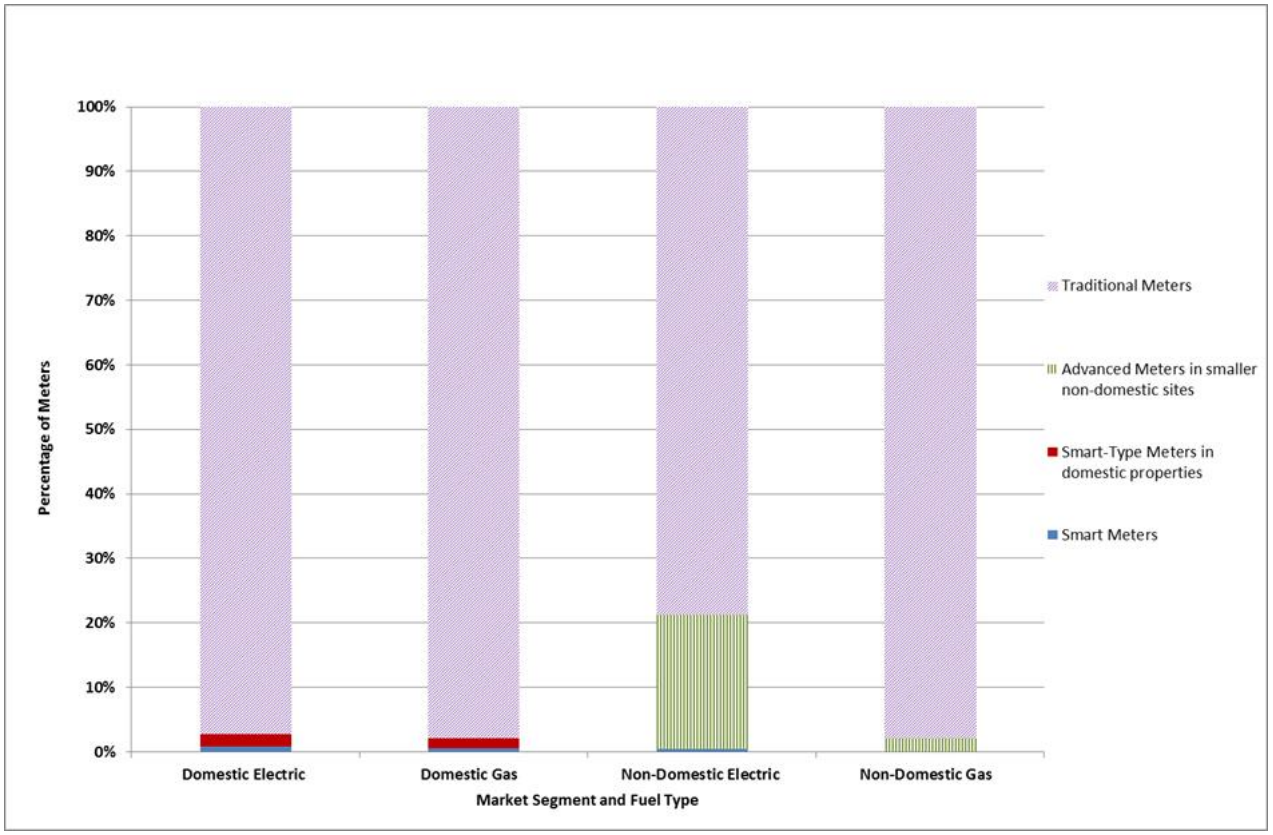
Smaller non-domestic sites

A business or public sector customer whose site uses low to medium amounts of electricity (defined as a non-domestic site falling within Balancing and Settlement Code Profile Classes 1, 2, 3 or 4) or gas (defined as a non-domestic site using less than 732MWh of gas per annum). The sites therefore range from individual micro- and small businesses to the smaller sites of large private and public sector organisations.

Results

As of 31st March 2014, there were a total of 21.9 million gas meters (21.4 million domestic and 0.5 million non-domestic) and 28.1 million electricity meters (25.9 million domestic and 2.3 million non-domestic[4]) operated by the larger energy suppliers in Great Britain. Chart 3 shows the proportion of meter types present in domestic and non-domestic properties, by fuel type, as at the end of March 2014. At present, traditional meters make up the vast majority of meters currently in operation. From now until the end of the programme in 2020, we will continue to monitor meter installations, and meters operated, and expect the proportion of traditional meters in operation to decrease, and the proportion of smart and advanced meters to increase.

Chart 3 – Proportion of domestic and non-domestic meters in operation by fuel type and meter type, at end of March 2014



[4] Individual numbers are rounded independently and this can result in totals which are different from the sum of their constituent items.

Table 1, below, presents the number of smart meter installations delivered within each quarter by domestic and non-domestic properties and meter type.

DECC first collected smart meter installation data for the period July to September 2012 (quarter three 2012). However, a number of smart and advanced meters were installed in both domestic and non-domestic properties prior to quarter three 2012 but not collected on a formal basis. We have now provided an estimate of the number of meters installed prior to quarter three 2012 by comparing the total number of meters operated as of the 30th September 2012 minus the number of meters installed in quarter three 2012. Estimates of the number of meters installed prior to quarter three 2012 are now included in Tables 1 – 1b.

In quarter one 2014, there were 98,600 smart meters installed in domestic properties (an increase from 95,300 installed in quarter four 2013). In the same period, there were 2,200 smart meters installed in non-domestic sites (a decrease from 2,600 in quarter four 2013) and 17,400 advanced meters (a decrease from 28,500 in quarter four 2013).

The roll-out and installation of smart meters across Great Britain, for both domestic properties and non-domestic sites, is supplier led and suppliers are free to plan their own installation strategy, with the obligation to replace traditional meters with smart or advanced meters by the end of 2020. During the foundation stage (the period until quarter four 2015, see Annex A for further detail) some suppliers are choosing to install smart meters to learn from the installation process, and give their customers early access to the benefits of smart meters, other suppliers are planning to begin installations at a later date. As such we expect to see fluctuations in the number of smart and advanced meters installed each quarter, as different suppliers install smart meters according to their own strategy. Suppliers have also indicated that less daylight hours during quarters four (Oct - Dec) and one (Jan - Mar) limits their ability to install meters, which is expected to have an effect on the number of smart and advanced meters installed during these quarters.

Table 1: Number of gas and electricity smart meter installations by the larger energy suppliers by meter type and quarter

	Domestic Properties	Non-Domestic Properties	
Quarter	Smart Meters	Smart Meters	Advanced meters
Prior to Q3 2012e	188	-	325,366
Q3 2012	68	-	35,641
Q4 2012	3,241	-	35,978
Q1 2013	23,641	-	33,850
Q2 2013	80,586	-	29,012
Q3 2013	92,822	946	24,249
Q4 2013	95,333	2,590	28,484
Q1 2014	98,644	2,175	17,356
Total	394,523	5,711	529,936

..Data not available, e Estimated, – nil

Table 1a: Number of electricity smart meter installations by the larger energy suppliers by meter type and quarter

	Domestic Properties	Non-Domestic Properties	
Quarter	Smart Meters	Smart Meters	Advanced meters
Prior to Q3 2012e	96	-	319,514
Q3 2012	36	-	35,455
Q4 2012	1,671	-	35,834
Q1 2013	12,678	-	32,529
Q2 2013	45,456	-	28,722
Q3 2013	57,632	946	24,189
Q4 2013	55,603	2,590	28,300
Q1 2014	61,164	2,175	17,332
Total	234,336	5,711	521,875

..Data not available, e Estimated, – nil

Table 1b: Number of gas smart meter installations by the larger energy suppliers by meter type and quarter

	Domestic Properties	Non-Domestic Properties	
Quarter	Smart Meters	Smart Meters	Advanced meters
Prior to Q3 2012e	92	-	9,852
Q3 2012	32	-	186
Q4 2012	1,570	-	144
Q1 2013	10,963	-	1,321
Q2 2013	35,130	-	290
Q3 2013	35,190	-	60
Q4 2013	39,730	-	184
Q1 2014	37,480	-	24
Total	160,187	-	12,061

..Data not available, e Estimated, – nil

Table 2, below, shows the total number of meters, by type, being operated by the larger energy suppliers as of the end of each quarter. The numbers of smart meters in operation are those meters which the suppliers are currently operating in smart mode. The number of meters operated in smart mode (Table 2) is different from the total number of smart meters installed (Table 1). This occurs for a number of reasons; such as technical issues preventing the meter from operating in smart mode (e.g. the meter is not able to communicate externally with the supplier via the wide area network) or because currently, when customers switch suppliers, the new supplier may choose to operate the smart meter in traditional mode.

At the end of March 2014 there were 344,700 domestic smart meters operating in smart mode (an increase from 265,200 at the end of quarter four 2013). This compares with the total number of smart meters installed of 394,500 and reflects some smart meters being operated in traditional mode.

There were 790,800 domestic smart-type meters operating at end of quarter one 2014 (a decrease from 798,100 at end of quarter four 2013). We believe that suppliers will increasingly focus on smart meters, therefore, this total is not expected to increase substantially in future quarters. Suppliers may choose to install further smart-type meters in order to develop their systems and processes and allow customers early access to smart benefits. However, we expect that over time, suppliers will cease smart-type installations and begin to replace these with smart meters in order to meet their roll-out obligations. Until such time, the number of smart-type meters in operation is likely to fluctuate with differing supplier plans.

There were 492,200 non-domestic smart and advanced meters in operation (a decrease from 529,200 in quarter four 2013). Fluctuations seen in the number of non-domestic smart and advanced meters in operation across quarters two, three and four, was primarily the result of suppliers providing more accurate information on their non-domestic meter portfolio (suppliers continue to refine their reporting methods and backend systems). Consumer churn can result in some smart meters being operated in traditional mode following customers switching supplier and potentially has a higher impact on meter numbers operated in the non-domestic market, as a single customer may have multiple sites and multiple meters.

The number of traditional meters in operation fluctuates between quarters both in domestic and smaller non-domestic properties. The decrease seen this quarter occurs for a variety of reasons, which may include for example, meter installations in new buildings, building demolitions and customers switching to and from smaller suppliers whose data is not captured at the time of reporting. However, overtime we expect the number of traditional meters to decrease throughout the roll-out of smart meters as they are replaced with smart meters

Table 2: Number of gas and electricity meters operated by the larger energy suppliers by meter type at end of quarter

Quarter	Domestic Properties			Non-Domestic Properties	
	Smart Meters (operating in Smart Mode)	Smart-Type Meters	Traditional Meters	Smart and Advanced Meters	Traditional Meters
Q3 2012	256	622,919	46,927,381	365,007	2,324,686[e]
Q4 2012	3,200	684,025	47,041,924	454,233	2,397,238
Q1 2013	24,040	726,509	46,613,562	511,069	2,369,005
Q2 2013	89,375	744,450	46,231,380	520,039	2,298,121
Q3 2013	176,817	804,420	46,227,893	508,534	2,307,641
Q4 2013	265,155	798,129	46,710,466	529,178	2,307,098
Q1 2014	344,702	790,841	46,171,705	492,177	2,262,409

e Estimated

Table 2a: Number of electricity meters operated by the larger energy suppliers by meter type at end of quarter

Quarter	Domestic Properties			Non-Domestic Properties	
	Smart Meters (operating in Smart Mode)	Smart-Type Meters	Traditional Meters	Smart and Advanced Meters	Traditional Meters
Q3 2012	132	376,423	25,786,824	354,969	1,771,055[e]
Q4 2012	1,739	407,975	25,766,990	444,943	1,864,295
Q1 2013	12,049	427,631	25,495,489	500,960	1,832,983
Q2 2013	50,038	443,913	25,307,746	509,436	1,790,147
Q3 2013	104,704	484,975	25,272,273	497,756	1,819,499
Q4 2013	163,427	485,873	25,508,995	518,643	1,824,847
Q1 2014	211,730	485,346	25,182,256	481,647	1,782,186

e Estimated

Table 2b: Number of gas meters operated by the larger energy suppliers by meter type at end of quarter

Quarter	Domestic Properties			Non-Domestic Properties	
	Smart Meters (operating in Smart Mode)	Smart-Type Meters	Traditional Meters	Smart and Advanced Meters	Traditional Meters
Q3 2012	124	246,496	21,140,557	10,038	553,631[e]
Q4 2012	1,461	276,050	21,274,934	9,290	559,271
Q1 2013	11,991	293,878	21,118,073	10,109	536,022
Q2 2013	39,337	300,537	20,923,634	10,603	507,974
Q3 2013	72,113	319,445	20,955,620	10,778	488,142
Q4 2013	101,728	312,256	21,201,471	10,535	482,251
Q1 2014	132,972	305,495	20,989,449	10,530	480,223

e Estimated

Annex A – Background to Smart Meter Roll-out

The Government's vision is for every home in Great Britain to have smart electricity and gas meters and for smaller non-domestic sites to have smart or advanced metering suited to their needs. Smart metering is a major national programme: one of the largest and most complex investment programmes undertaken by the energy industry. The programme aims to roll-out over 50 million smart electricity and gas meters to all domestic properties and smart or advanced meters to smaller non-domestic sites in Great Britain by the end of 2020, impacting approximately 30 million premises.

The roll-out of smart meters will play an important role in Britain's transition to a low-carbon economy and help meet some of the long-term challenges in ensuring an affordable, secure and sustainable energy supply.

The Smart Metering Implementation Programme is being delivered in two phases. During the Foundation Stage, which began in March 2011, the Government is working with the energy industry, consumer groups and other stakeholders to put commercial and regulatory frameworks in place to support smart metering, trial and test systems, learn lessons from early installations and enhance the consumer experience. Most householders will then have smart meters installed by their energy company between autumn 2015 and 2020.

Energy suppliers are responsible for planning and delivering the installation of smart meters for their customers and are free to plan the roll-out in a way that suits their business and the needs of their customers, subject to the requirement to complete the roll-out by the end of 2020. Suppliers' proposed approaches to the roll-out vary and take into account factors such as the location of their customer base and installation workforce and when their customers would need their traditional meters replaced on a routine basis. The approach adopted by suppliers may change as they progress through the roll-out.

Suppliers are using the Foundation Stage to undertake testing and trialling of installations to help ensure their customers have a positive experience of smart metering. Therefore, some customers will receive smart meters during the Foundation Stage, as the energy suppliers start up their programmes. However, the majority of customers will receive their meters between 2015 and 2020.

Annex B - Data and Processing

The Smart Metering Implementation Programme request (on a quarterly basis) data relating to the number of smart and traditional meters from the larger energy suppliers. This will enable the Programme to monitor the roll-out of smart meters over time. More detail is provided on the methodology and quality assurance in the **methods note** but in brief:

Suppliers are responsible for aggregating their own data to enable them to provide information on the number and type of meters installed and operating each quarter. Each supplier extracts data from their internal IT systems, aggregates and quality checks it, before submitting to DECC who in turn quality assure the data and resolve any issues arising with suppliers. Each supplier provides this information one month after the end of each quarter to ensure that statistics produced are timely and relevant. The data is aggregated to industry level ensuring that commercial sensitivity is respected.

The data only covers the meters installed and operated by the larger energy suppliers and has not been adjusted to take account of smaller supplier installations. The larger energy suppliers are estimated to supply approximately 99%[5] of domestic properties and approximately 90% of smaller non-domestic sites and therefore, represent a large sub-set of meters found in other Departmental consumption statistics[6].

Experimental Statistics

These estimates are released as Experimental National Statistics which means they are official statistics undergoing an evaluation process prior to being assessed as National Statistics. They are published in order to involve users and stakeholders in their development, and as a means to build in quality assurance during development.

More information on the methodology is included in the **methods note**.

As with any new data collection, there are likely to be some data quality issues to resolve as the process beds in. Therefore data in the quarterly reports should be treated as provisional and subject to revision.

Any revisions will be marked in the data tables and for any significant revisions we will provide an explanation of the main reasons.

[5] The Retail Market Review, Ofgem, October 2012: https://www.ofgem.gov.uk/ofgem-publications/39457/retail-market-review-updated-domestic-proposals.pdf

[6] Regional and local authority electricity consumption statistics 2012 data, March 2013 update: https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics-2005-to-2011

Further information and feedback

Any enquiries or comments in relation to this statistical release (including suggestions for developing the publication) should be sent to DECC's Smart Meter Statistics Team at the following email address:

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The statistician responsible for this publication is Bex Newell.

Further information on energy statistics is available at

https://www.gov.uk/government/organisations/department-of-energy-climate-change/about/statistics

Next release

The next quarterly publication is planned for publication on 18 September 2014 at 9.30am.

The content and format of the quarterly smart meters statistical report is currently being reviewed, of which the format and context maybe subject to change in future versions. If you have any comments or suggestion for the development of this report, please provide feedback using the contact details above.

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