

**Figure 1 Additional smart meter data to collect to inform BEIS’s impact assessment and why**

Area of cost or benefit	Information available in the BEIS annual return	Additional data that should be collected	Why
Meter rental	<p>There is information in the BEIS annual return that is related to meter rental charges. However, this must be combined with an assumed meter life to determine a calculated rental.</p> <p>Item 3.12(a) Cost of a SMETS1 smart meter (the unit price of the gas and electricity smart meter asset).</p> <p>3.12(b) Cost of a SMETS2 smart meter (the unit price of the gas and electricity smart meter asset).</p> <p>3.12(c) Cost of a SMETS1 communications hub (if not included in the above figures).</p> <p>3.12(e) Cost of a traditional meter (the unit price of the gas and electricity traditional meter asset)</p> <p>3.13(a) Cost of a domestic installation visit (the average cost of an installation visit) - Single and Dual</p> <p>3.13(c) Number of smart meter installations</p> <p>3.13(d) Cost of an aborted smart meter installation visit (the average cost).</p>	<ul style="list-style-type: none"> <li>■ The assumptions could be improved without adjusting the methodology by collecting</li> <li>■ Average asset life for used to determine meter rentals for a SMETS1 electricity smart meter</li> <li>■ Average asset life for used to determine meter rentals for a SMETS1 gas smart meter</li> </ul> <p>To check that the methodology is giving reasonable results the following should also be collected although it will be more difficult to use these directly in the modelling given the methodology.</p> <ul style="list-style-type: none"> <li>■ Average smart electricity meter rental</li> <li>■ Average smart gas meter rental</li> <li>■ Average traditional electricity credit meter rental</li> <li>■ Average traditional gas credit meter rental</li> <li>■ Average traditional electricity PP meter rental</li> <li>■ Average traditional gas PP meter rental</li> </ul>	<p>The BEIS annual return collects information on the upfront costs of a number of smart meter items that are charged to suppliers as part of their meter rentals. However, to turn this into an annual cost it is necessary to make an assumption about how long the cost of the meter is recovered over.</p> <p>BEIS and Ofgem currently assume SMETS1 meters have a 15-year lifetime. This assumption needs confirming as a shorter or longer lifetime would imply a higher or lower rental charge respectively.</p>

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	<p>3.13(e) Cost of a traditional meter installation visit (the average cost of an installation visit).</p>		
	<p>3.13(f) Number of traditional meter installations</p>		
<p>Operations and maintenance costs for metering equipment</p>	<p>There is no information in the BEIS annual return on this cost item</p>	<ul style="list-style-type: none"> <li>■ O&amp;M costs per year per smart electricity meter</li> <li>■ O&amp;M costs per year per smart gas meter</li> <li>■ O&amp;M costs per year per traditional PP electricity meter</li> <li>■ O&amp;M costs per year per traditional credit electricity meter</li> <li>■ O&amp;M costs per year per traditional PP gas meter</li> <li>■ O&amp;M costs per year per traditional credit gas meter</li> </ul>	<p>Smart meters will incur different O&amp;M costs from traditional meters and may face O&amp;M costs that represent a different proportion of the asset costs compared to traditional meters.</p> <p>BEIS is assuming that annual O&amp;M costs for smart meters are equal to 2.5% of the meter purchase cost but this does not appear to be informed by recent industry data.</p>

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Supplier IT costs	There is no information in the BEIS annual return on this cost item	<ul style="list-style-type: none"> <li>■ The annual additional IT costs of suppliers required to deliver the smart meter programme.</li> </ul>	<p>In order to deliver the smart meter roll out programme and deliver many of the potential benefits of smart meters energy suppliers need invest in their IT systems.</p> <p>The impact assessment makes a number of assumptions about IT costs, but these have not been updated based on recent supplier data.</p> <p>In response to the consultation three large suppliers stated that the IT amortisation period used in the model (15 years) was too long. In each case suppliers cited accounting standards, specifically IAS par 38, as the rationale for the reduced amortisation period.</p> <p>Ofgem said that not all suppliers identified the IT amortisation period as a concern and that evidence suggested that the economic life was longer than the accounting life for these assets. Ofgem highlighted that they may review this cost as part of the 2019 smart metering costs review</p>
Legal and organisational costs	There is no information in the BEIS annual return on this cost item	<ul style="list-style-type: none"> <li>■ Suppliers annual legal and organisational costs of delivering the smart roll out programme.</li> </ul>	<p>The smart meter roll out programme is a significant delivery task for suppliers requiring suppliers to incur material organisational costs to deliver the programme.</p> <p>The impact assessment makes a number of assumptions about organisational costs, but these have not been updated based on recent supplier data.</p>
Pavement reading inefficiency for traditional credit meters	Item 3.1 Average cost of cyclic meter reading activity per customer.	<ul style="list-style-type: none"> <li>■ The historic average cost of meter reading for traditional credit meters per year per meter from 2013 (before material smart meter roll out)</li> </ul>	<p>As the smart meter roll out progresses the density of remaining traditional credit meters will reduce and therefore the cost of obtaining a read from these will increase. Collecting data and estimating the trend in meter reading costs over time compared to smart meter roll out over time can provide evidence on which to base the assumption about pavement reading inefficiency. Such a comparison would have to strip out the impacts of inflation.</p>

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Supplier marketing costs	There is no information in the BEIS annual return on this cost item	The average marketing costs incurred by suppliers per smart meter installed.	<p>The smart meter policy framework is one in which customers have to actively “opt in” to agree to take a smart meter. Customer engagement is therefore a crucial part of the process to get a customer to agree to take a smart meter and then to ensure that they can maximise the benefits from its use. These costs include direct advertising and marketing spend as well as the costs of outbound call centres, inbound call centres, letters and direct mails, text messages, email, digital and face to face channels.</p> <p>Not all of this is captured in the installation cost reported in the ASR and therefore the remainder should also be recorded.</p> <p>Three large suppliers told Ofgem that they incurred additional marketing costs beyond those captured by the 2017 baseline or those covered by SEGB. Ofgem said they consider the current approach sufficiently robust but the NAO have highlighted that the impact assessment does not adequately capture engagement and direct marketing costs.</p>

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Inbound enquires	<p>3.6(a) Average cost of inbound contact handling per traditional meter customer per annum (billing enquiries, billing disputes, billing complaints only).</p> <p>3.6(b) Average cost of inbound contact handling per smart meter customer per annum (billing enquiries, billing disputes, billing complaints only)</p> <p>3.6(c) Total number of inbound contacts from smart meter customers</p> <p>3.6(d) Total number of inbound contacts from traditional meter customers</p>	<p>If possible then it would be best to collect the following</p> <ul style="list-style-type: none"> <li>■ The additional cost of inbound calls immediately following smart meter installation per meter for <ul style="list-style-type: none"> <li>□ Credit Elec</li> <li>□ Credit gas</li> <li>□ PP Elec</li> <li>□ PP Gas</li> </ul> </li> <li>■ The annual savings on inbound enquires attributable to the use of a smart meter <ul style="list-style-type: none"> <li>□ Credit Elec</li> <li>□ Credit gas</li> <li>□ PP Elec</li> <li>□ PP Gas</li> </ul> </li> </ul> <p>If it is too difficult for suppliers to transform data on call contact rate into financial costs, then just contact data can be collected so show.</p> <ul style="list-style-type: none"> <li>■ The % increase in call contact rate immediately following smart meter installation</li> <li>■ The % decrease in customers long term call contact rate attributable to the use of a smart meter</li> </ul> <p>Given that the delivery of smart meters has been targeted at customers based on a range of characteristics (consumption levels, debt levels etc.), the sample of smart meter customers is likely to have a different call contact propensity for reasons of sample selection rather than smart meter impact. Therefore, suppliers should control for differences in relevant characteristics when reporting savings.</p>	<p>The current data doesn't allow for the estimation of the additional call costs due to higher call rates following install.</p> <p>Three large suppliers highlighted the increase in calls around installations. Ofgem does not believe there is enough evidence suppliers or that the costs can be mitigated.</p> <p>In the most recent impact assessment BEIS still used assumptions for inbound enquires benefits that date from 2011 and do not seem to be informed by the ASR data.</p> <p>Further, even though the ASR template collects data on inbound enquires costs for traditional meter PPM customers and smart meter PPM customers separately, it may not provide sufficient information to assess the impact of smart meters on inbound contact. Smart meters have not been randomly installed in the customer population. Instead they have been targeted at customers and customers have accepted smart meters in a way that means that the characteristics of the group of customers with smart meters is likely to differ from the characteristics of the group of customers that have yet to receive a smart meter.</p> <p>Therefore, the causal impact of smart meters must be estimated rather than just the difference in the observed cost to serve the two groups.</p>

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Net impact of avoided site visits	<p data-bbox="315 245 719 331">Item 3.1 Average cost of cyclic meter reading activity per customer.</p> <p data-bbox="315 379 719 437">Item 3.2(a) Average cost of a non-cyclic meter read</p> <p data-bbox="315 485 719 603">Item 3.2(b) Average cost of non-cyclical safety inspection (aka 'a special safety inspection' in the CBA).</p> <p data-bbox="315 651 719 799">Item 3.3 Average cost of a site visit to change or adjust a meter for the purpose of a tariff change (excluding changes by payment mode such as pre-payment).</p>	<ul style="list-style-type: none"> <li data-bbox="748 245 1323 331">■ Average cost of a safety visit per smart meter per year (aka 'a regular safety inspection' in the CBA).</li> </ul>	<p data-bbox="1368 245 2051 427">Three large suppliers indicated that Ofgem's model overestimates the benefits from avoided meter reads. Ofgem have cited the lack of evidence to support this. The additional data described here would add to the evidence base on costs of site visits. Ofgem noted that this is an area they may review in 2019.</p> <p data-bbox="1368 475 2051 657">The BEIS template requests data on the total costs of site visits to change/adjust a meter and the number of such visits under a "Workings" section. It is important for suppliers to provide this breakdown as it would not be possible to infer annual costs if only the average figure is reported.</p> <p data-bbox="1368 705 2051 912">Additionally, whilst smart meters will remove the need to visit consumers' properties to read meters, suppliers will instead need to visit meters to perform dedicated safety inspections, which are currently conducted as part of the regular meter reading process. This represents a new cost that needs to be netted off against the savings from avoiding other site visits</p>

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Debt management	<p>Item 3.7 Average cost per traditional meter customer incurred in recovering debt.</p> <p>Item 3.8 Average cost of debt write off per traditional meter customer</p>	<ul style="list-style-type: none"> <li>■ Average annual savings in debt management costs for smart electricity customers</li> <li>■ Average annual savings in debt management costs for smart gas customers</li> </ul> <p>These can be estimated by comparing the debt management costs of traditional meter customers to smart meter customers whilst controlling for differences in the characteristics of the two customer groups.</p>	<p>Smart meters should reduce debt management costs by providing accurate and timely information to customers and allowing them to more easily be switched to prepayment plans. However, smart meters will not eliminate these costs and the BEIS annual return only collects estimates of debt management costs for traditional meter customers which are not split by fuel. This means that to calculate the debt management benefits of smart meters it is necessary to combine the ASR data with assumptions of how much of these costs is saved when smart meters are installed.</p> <p>BEIS is currently assuming a value for the savings of £2.20 (2011 prices) per smart meter per year. This has not been updated since 2011.</p> <p>Two suppliers disagreed with Ofgem’s estimates of benefits. Ofgem note that no evidence has been provided to support an assertion of lower debt management benefits.</p>

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Reduction in prepayment cost to serve	<p>Item 3.9(a) Average cost to serve per PP meter (traditional) – Gas</p> <p>Item 3.9(a) Average cost to serve per PP meter (traditional) – Elec</p> <p>Item 3.9(b) Average cost to serve per smart meter operated in prepayment mode – Gas</p> <p>Item 3.9(b) Average cost to serve per smart meter operated in prepayment mode – Elec</p> <p>Item 3.10 Average cost of a PP meter exchange</p>	<ul style="list-style-type: none"> <li>■ Average cost of an electricity PP meter exchange</li> <li>■ Average cost of a gas PP meter exchange</li> <li>■ Number of electricity PP meter exchanges per year</li> <li>■ Number of gas PP meter exchanges per year</li> <li>■ The savings in cost to serve for smart PPM electricity customers attributable to the installation of a smart meter</li> <li>■ The savings in cost to serve for smart PPM gas customers attributable to the installation of a smart meter</li> </ul>	<p>Smart meters can be remotely configured to operate in either credit or prepayment mode using the same infrastructure. This means that the cost to serve for PP meter customers can be reduced on both an ongoing basis and by avoiding the need for meter replacements.</p> <p>The most recent ASR template does not explicitly collect volume data on the number of PP meter exchanges or differentiate between the cost of a gas and electricity meter exchange. However, it is possible that some suppliers may report this information under "Workings" but it would be useful if this information was explicitly requested. Without an understanding of how often traditional credit meters are exchanged for PP meters it is not possible to calculate the cost savings from the use of a smart meter. It is also important to note that data for 2018 and afterwards may not be very informative for this because, during this period, suppliers began replacing credit meters with smart meters instead of PP meters.</p> <p>Further, even though the ASR template collects data on the costs to serve traditional meter PPM customers and smart meter PPM customers separately, it may not provide sufficient information to assess the impact of smart meters on cost to serve. Smart meters have not been randomly installed in the customer population. Instead they have been targeted at customers and customers have accepted smart meters in a way that means that the characteristics of the group of customers with smart meters is likely to differ from the characteristics of the group of customers that have yet to receive a smart meter.</p> <p>Therefore, the causal impact of smart meters must be estimated rather than just the difference in the observed cost to serve the two groups.</p>

**Figure 2 Additional smart meter data to collect to inform Ofgem’s SMNCC review and why**

Area of cost or benefit	Information available in the BEIS annual return	Additional data that should be collected	Why
Premature replacement charge (PRC)	There is no information in the BEIS annual return on this cost item given BEIS is interested in a social cost benefit analysis	<p>Data from suppliers providing historic and forecast:</p> <ul style="list-style-type: none"> <li>■ Average electricity credit meter PRC</li> <li>■ Average electricity PP meter PRC</li> <li>■ Average gas credit meter PRC</li> <li>■ Average gas PP meter PRC</li> </ul> <p>Data from suppliers providing data on the age profile of their meter stock.</p>	<p>Ofgem currently estimates average PRC costs for the industry based on assuming an initial average meter age of 10 years old (for credit meters). Ofgem could update its assumption of the distribution of meter ages based on actual data to improve its modelling.</p> <p>To check whether the PRC costs that Ofgem’s assumptions are implying are reasonable it should seek to compare the outputs to the actual PRC costs of suppliers.</p>