

DCP 127 “Gas First Smart Meter Installation” Costs and Benefits Analysis

1. Introduction

DCP 127 has been raised by British Gas to put in place a framework to allow permission to be provided to the gas supplier’s agent to de-energise, connect the gas smart meter communications hub and re-energise the incoming electricity supply.

For the purposes of this paper “Gas First” is interpreted as covering those scenarios where a gas supplier wants to install a gas smart meter and the customer is contracting for their electricity supply from a different energy supplier in either

- in advance of the fitting of an electricity smart meter at a given premises or
- where there is an existing electricity smart meter with an incompatible communications hub.

This paper provides details on the costs and benefits of using the Distribution, Connection and Use of System Agreement (DCUSA) as a vehicle for providing such permission.

There are a number of alternative approaches that a gas supplier could use to facilitate “Gas First” installations and these are also explored within this paper.

Summary of solutions to facilitate gas first smart meter installations.

1. Amend DCUSA to provide consent to gas suppliers agents to de-energise, connect the gas smart meter communications hub and re-energise the incoming electricity supply.
2. Put in place bi-lateral arrangements with each registered electricity supplier to provide consent for gas supplier’s metering agent to act as agent of the appointed electricity meter operator.
3. Gas supplier to arrange a co-incidental visit with the appointed electricity meter operator and request that the electricity meter operator carries out de-energisation, connection of gas smart meter communications hub and re-energisation of the incoming electricity supply.
4. Gas smart meter communications hub to be powered by means other than the incoming electricity supply. (Note this is not considered in the following cost/benefit analysis as battery powered communications will not support smart meter functionality)

2. Costs Benefit Summary

	DCUSA Changes	Bi-lateral Agreements	Joint Electricity Meter Operator Visit
Cost	£10,000 per gas supplier	£5,000 per agreement	£80 per visit
Cost per gas supplier	£10,000	£230,000 ⁽¹⁾	
Cost based on installing gas first at 250k ⁽²⁾ meter points			£20m
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Benefits per Customer per annum	£28.36	£28.36	£28.36
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Breakeven ⁽³⁾ no of customers – single gas supplier	353	8,110	n/a
Breakeven no of customers – industry wide	11,636	255,994	n/a
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Advantages	Single industry wide agreement	Voluntary agreement	No formal legal agreements required
	Voluntary agreement		
	Most cost efficient		
Disadvantages		No obligation to sign agreement Different (non standard arrangements negotiated) Multiple agreements to manage with potential differing terms	Electricity supplier agent may not provide service to gas supplier Additional cost of site visit

⁽¹⁾ Assuming that each gas supplier group (of which there are 33) will need to enter into agreements with 46 groups of electricity suppliers

⁽²⁾ 250k is an illustrative figure to demonstrate the cost that could be incurred from use of option 3

⁽³⁾ Breakeven means the number of customers required to have smart gas meters installed at least 1 year early at £28.36 benefit per year, to recoup the cost of the solution

Full details of the costs and benefits are described in the next sections.

3. Generic benefits of being able to offer single fuel customers gas only smart metering

In April 2012 DECC updated their impact assessments for Smart meter roll-out in both the domestic and non-domestic sectors.

The impact assessments stated that “Lack of sufficiently accurate, timely information on energy use may prevent customers from taking informed decisions to reduce consumption and thereby bills and CO2 emissions. The lack of accurate, timely information increases suppliers' accounts management and switching costs. Better information on patterns of use across networks will aid in network planning and development, including future smart grids. Smart metering is a key enabling technology for managing energy systems more efficiently in the future, and providing new information and services to consumers which reduce costs and carbon emissions.”

There are approximately 4.6 million single fuel gas customers in the market who could be potentially delayed in receiving the benefits of a smart meter if the gas supplier had to wait for the installation of the electricity smart meter.

All suppliers are mandated to roll-out smart meters by 2019. If a gas only smart metering solution is not put in place gas only suppliers could find themselves dependant upon the roll-out plans of competitor electricity suppliers, which for those gas suppliers with significant numbers of gas only customers could mean they are unable to meet the 2019 target. This could also impact on the gas suppliers planning efficiencies by loss of customer density.

The DECC impact assessment contains estimates of benefits to consumers of rolling out smart meters by 2019. Around two thirds of the average domestic consumers energy bill is made up of gas costs therefore engaging gas only customers early could bring forward the benefits of smart metering earlier than would be possible should the gas supplier become dependent on installation of a smart electricity meter.

For the purposes of this paper the financial benefits of a Gas First installation have been taken from the DECC Impact Assessment published in April 2012 “ Smart meter roll-out for the domestic sector”. These are as follows:

Customer Benefits

- *Energy demand reduction 2% (£16 per annum for average gas customer)*

Supplier Benefits

- *Avoided site visits £6.10 per meter per year*
- *Reduction in call centre costs £2.20 per meter per year*
- *Better debt management £2.20*
- *Switching savings £0.80 per meter (pre DCC)*
- *Theft savings £0.36*
- *Remote disconnection £0.50*

Network benefits

- *Gas losses £0.20*

The total savings per customer per year are **£28.36**

If all **4.6m** single fuel customers have a gas smart meter installed first, these benefits would total **£130.46m** (£28.36 x 4.6m) for each year that the gas smart meter is installed earlier than would otherwise be the case.

4. Costs of Solutions

1. *Amend DCUSA to provide consent to gas suppliers agent to de-energise, connect the gas smart meter communications hub and re-energise the incoming electricity supply.*

This solution will require any gas supplier who wishes to de-energise and re-energise an incoming electricity supply to install, remove or maintain a gas smart meter communications hub to accede to the DCUSA.

The accession process would involve the gas supplier incurring the following costs:

- Completion of DCUSA accession application form
- There are no costs involved in applying to accede the DCUSA
- Voluntary attendance at relevant working groups and voting on relevant changes (the intention is to add gas suppliers as a party category and to include this category on the change proposal template. By doing this gas suppliers will easily be able to review any change proposal and check whether they are likely to be impacted as a party)
- The intention is not to require gas suppliers to become shareholders of DCUSA

Indicative costs are estimated at **£10,000** per gas supplier group (see below) as a one off cost to cover legal review of the contract and negligible ongoing costs. The rationale behind these figures is that recent signatories to the DCUSA have indicated that it took 2 -3 days work to review the DCUSA including legal costs. Ongoing costs would be minimal as any cost associated with attendance at DCUSA workgroups can be claimed back under the terms of the DCUSA and gas suppliers would only attend workgroup meetings if they perceived a benefit to their organisation.

2. *Put in place bi-lateral arrangements with each registered electricity supplier to provide consent for gas supplier's agent to act as agent of the appointed electricity meter operator.*

Gas suppliers could put bi-lateral arrangements in place with each electricity supplier to obtain consent for the gas suppliers meter operator to act as agent for the electricity suppliers meter operator. There are currently 56 companies licensed as domestic and non-domestic electricity suppliers who fall within 46 company groups. There are 44 companies licensed as domestic and non-domestic gas suppliers who fall within 33 company groups according to Ofgem's latest report. If every gas supplier elected to put a bi-lateral arrangement in place with each electricity supplier 2464 (56*44) agreements would need to be signed. However, the legal costs can be reduced where one lawyer can advise all suppliers in a company group (46*33).

There are disadvantages that must be considered with the bi-lateral agreement option:

- There is no obligation on an electricity supplier to agree to a bi-lateral arrangement with a gas supplier. If any one electricity supplier refuses to sign a bi-lateral arrangement then the gas supplier will need to have processes in place to check who the electricity supplier is before arranging a visit to carry out a gas only installation.
- Each bi-lateral arrangement may by its' nature have to be individually negotiated between the gas and electricity supplier. Therefore additional costs would be incurred in both negotiating and the ongoing management of the bi-lateral arrangements.

Indicative costs of putting a bi-lateral arrangement in place are estimated as a one off cost of **£5,000** per agreement to cover legal review and negotiation. The workgroup felt that the costs of maintaining these agreements going forward would be minimal.

The benefits would be reduced where one or more Suppliers don't enter into the bi-lateral agreements. The following table shows the reduction in benefits where a lack of agreed contracts means customers are not able to take advantage of gas first, assuming an even spread of customers over suppliers.

% of customers with a gas first install	No. of contracts (46 x 33)	Cost of contracts (£m)	No. of customers covered (m)	No. of customers not covered (m)	Benefit available p/a (£m)
100	1,518	7.59	4.6	0	130.46
75	1,138	5.69	3.45	1.15	97.84
50	759	3.80	2.3	2.3	65.23
25	379	1.90	1.15	3.45	32.61

3. *Gas supplier to arrange co-incidental visit with appointed electricity meter operator and request that electricity meter operator carries out de-energisation, connection of gas smart meter communications hub and re-energisation the incoming electricity supply.*

This option would incur additional costs of both booking the additional visit and also the cost of the travel and time on site by the electricity meter operator. This additional visit may be more difficult to organise once all electricity suppliers are engaging in full smart meter roll-out as resources may be working a full capacity. Depending on the flexibility of the electricity suppliers agent delays may occur in the ability to install gas first at a time that meets the gas supplier's requirements,

On each occasion the gas supplier needs to de-energise and re-energise the electricity supply the gas supplier will incur costs of **£80**, made up of:

- Appointment booking via electricity supplier – Indicative cost £10 per appointment
- Chargeable job for de-energisation, installation/maintenance/removal and re-energisation – Indicative cost £70 per visit (Based on 2hr banded appointment)

Again with this option gas suppliers will be reliant upon co-operation from competitor electricity suppliers. Additionally gas suppliers will not easily have visibility of who the electricity supplier or meter operator is in order to book a site visit.

4. *Gas smart meter communications hub to be powered by other means other than incoming electricity supply.*

The gas supplier could consider alternative means to power the gas communications hub other than the incoming electricity supply.

One alternative would be to power the device via the customers internal electricity supply. This would not be ideal as any supply taken after the electricity meter is susceptible to disconnection by a prepayment meter and wilful or accidental disconnection by the customer.

Another alternative would be to power the gas communications hub via a battery. Major meter manufacturers have advised that batteries cannot provide the energy density required to support SMETS type gas metering functionality over the intended life of a smart meter. Battery power would be incapable of providing anything more than simple automated meter reading functionality with perhaps a single outbound daily read for a maximum of 10 years.

Manufacturers state that major consumers of energy for a hub in a SMETS environment are:

- Running security code – especially if hardware based.

- Frequent communications over HAN system for reading and control
- Regular WAN communication with the Head End System
- Updates of firmware and tariff configuration
- Communications for prepayment applications
- Use of the HAN for consumer applications
- Provision of 'last gasp' communications functionality
- Further unknown requirements as may be imposed by a DCC system.

Essentially none of these would be practicable without a mains power supply.