



Department for
Business, Energy
& Industrial Strategy

SMART METERING IMPLEMENTATION PROGRAMME

Government response to the consultation on the enrolment of Secure SMETS1 meters in the Data and Communications Company's national communications network



Department for
Business, Energy
& Industrial Strategy

OGL

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General information

Purpose

Following consideration of responses provided to the consultation issued on 4 March 2019 and updated information from the Data Communications Company (DCC), this government response provides its conclusions that require the DCC to provide an interoperable smart meter service for the Secure SMETS1 meter set.

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Reference: Government Response to the consultation on the enrolment of Secure SMETS1 meters in the Data and Communications Company's national communications network (DCC).

Territorial extent: This consultation applies to the gas and electricity markets in Great Britain. Responsibility for energy markets in Northern Ireland lies with the Northern Ireland Executive's Department for the Economy.

Introduction

Smart Metering Implementation Programme

1. The development of a world-leading smart energy system delivering secure, cheap and clean energy is an important part of the government's Industrial Strategy.¹ As our Clean Growth Strategy highlights, smart technologies and services will play a vital role in decarbonising the energy sector.² Smart meters are an essential upgrade to our energy infrastructure, enabling a smarter energy system and enabling energy consumers to be better informed and engaged.
2. The government is committed to ensuring that smart meters will be offered to every home and small business in Great Britain by the end of 2020. The smart meter rollout will deliver a much needed digital transformation of our energy system. The rollout is not only an investment in our future; it will also support, for example, the delivery of tangible and immediate energy-saving benefits for households and small businesses across Great Britain. And it is an important foundation for the government and Ofgem's Smart Systems and Flexibility Plan which was published in 2017.³ This Plan sets out a number of actions to deliver a smarter, more flexible energy system that supports innovation in new smart products and services and progress against these actions was published in 2018.
3. Energy suppliers are responsible, under standard conditions of electricity and gas supply licences ('supply licence conditions'),⁴ for taking all reasonable steps to roll out smart meters to all domestic and smaller business premises in Great Britain by the end of 2020. The government's role includes providing the right framework against which energy suppliers can plan, and ensuring benefits are delivered to consumers.
4. The most recent Cost-Benefit Analysis of the Smart Meter roll-out was published in November 2016. This estimated the costs and benefits associated with the national roll-out of smart meters and identified a net benefit from the Programme of £5.7 billion for the period to 2030.⁵ An updated Cost-Benefit Analysis will be published in Summer 2019.
5. The Smart Metering Implementation Programme will drive a number of key benefits including:
 - Contributing to the UK having a secure and resilient energy system.
 - Providing near real-time information on energy cost and usage encouraging consumers to reduce demand and enable faster switching between suppliers. This in turn will lead to a more dynamic and competitive retail energy market.
 - Providing the foundation for a range of innovative energy services, which will enhance consumer choice and control.

¹ See: www.gov.uk/government/topical-events/the-uks-industrial-strategy

² See: www.gov.uk/government/publications/clean-growth-strategy

³ See: www.gov.uk/government/publications/upgrading-our-energy-system-smart-systems-and-flexibility-plan

⁴ See: www.ofgem.gov.uk/licences-codes-and-standards/licences/licence-conditions

⁵ See: www.gov.uk/government/publications/smart-meter-roll-out-gb-cost-benefit-analysis

SMETS1 policy

6. The roll-out of smart meters in Great Britain is being delivered in two stages – the Foundation Stage, which began in 2011, transitioning into the Main Installation Stage, which commenced in November 2016. This was the point when the national data and communications provider, the Data Communications Company (DCC), became operational.
7. A standard for the minimum common functionality of smart meters deployed during the Foundation Stage, known as SMETS1, was defined in 2012. This addressed the variability in the smart-type meters which some energy suppliers were already installing and helped ensure consumers received a consistent, minimum service offer. In allowing for SMETS1 meters to count towards energy suppliers' 2020 roll out targets, government sought to foster early consumer benefits of smart metering and provide industry with valuable experience to support the subsequent deployment of smart meters at scale.
8. A number of energy suppliers have been installing first-generation (SMETS1) smart meters for their customers, using their own data and communications systems to provide smart services. Like second-generation (SMETS2) meters, SMETS1 meters provide the benefits of accurate bills and near real-time energy consumption information. However, these SMETS1 meters currently operate via data and communications systems put in place by individual energy suppliers, as opposed to a single national data and communications infrastructure which is accessible to all suppliers. Consequently, consumers may lose smart services on switching to another energy supplier, depending on which energy supplier they are switching to and from.
9. Our overall aim is to ensure interoperability for SMETS1 meters so that smart functionality is retained when a customer switches energy supplier.
10. Enrolment of SMETS1 meters with the DCC would deliver this objective and provide a number of benefits to consumers and the energy market, in particular:
 - Retention of smart services for consumers when they switch energy supplier.
 - Reduction of stranding risk for existing SMETS1 assets.⁶
 - A number of additional security controls core to the DCC service would be extended to these meters.
 - Efficiencies from rationalisation of smart metering interfaces and processes within energy supplier businesses.
11. In April 2018, the government consulted on options for ensuring DCC SMETS1 enrolment capability is used in a timely manner, with a view to ensuring consumers with

⁶ Namely the risk of suppliers replacing their SMETS1 meters with SMETS2 meters before the SMETS1 meters reach their end of life.

SMETS1 meters can retain smart services whenever they switch energy supplier. The government issued its conclusions in October 2018,⁷ which were as follows:

- Energy suppliers would be required to take all reasonable steps to enrol their 'eligible SMETS1 meters' in the DCC, within 12 months of the point at which they can be enrolled.⁸
 - Where an energy supplier acquires an eligible SMETS1 meter following change of energy supplier and the meter is not enrolled, the new energy supplier would be required to take all reasonable steps to enrol the meter within 12 months of acquiring the meter.
 - Energy suppliers would be required to take all reasonable steps to replace any SMETS1 meter which is not enrolled in the DCC with a SMETS2 meter by the end of 2020.
 - Once a SMETS1 meter has been enrolled in the DCC it may not be withdrawn and operated outside the DCC.
12. In line with procedure under section 89 of the Energy Act 2008, the final draft legal text was laid in Parliament in October 2018 and took effect in January 2019. These changes built on pre-existing obligations on energy suppliers, in particular the Operational Licence Condition that requires energy suppliers to take all reasonable steps to operate SMETS1 meters in smart mode once enrolled.
13. The government has also made amendments to the Smart Energy Code so that SMETS1 meters installed after a certain point - the SMETS1 end-date - will not count towards an energy supplier's obligation to take all reasonable steps to roll out smart meters to its customers by the end of 2020. In October 2018, the government confirmed the SMETS1 end-date as 5 December 2018 for meters operating in credit mode and 15 March 2019 for meters operating in prepayment mode.

Background to the Enrolment & Adoption Programme

14. In March 2015 the government directed the DCC to assess the feasibility of options for enrolling SMETS1 meters in its system. This process concluded in May 2017 when the DCC submitted the final version of its Initial Enrolment Project Feasibility Report (IEPFR) to BEIS, setting out a series of design options for the enrolment of SMETS1 meters into the DCC infrastructure.
15. In June 2017, the government wrote to the DCC to provide guidance on narrowing and advancing its enrolment design options. The letter also stated that BEIS would ultimately decide on whether to proceed to enrolment and, if so, in respect of which

⁷ Government Response to the Consultation on maximising interoperability for first generation SMETS1 smart meters published in October 2018: www.gov.uk/government/consultations/maximising-interoperability-for-first-generation-smets1-smart-meters

⁸ 'Eligible for enrolment' is determined with reference to the point in time at which device models are added to the Eligible Product Combination (EPC) list (or are capable of being added but for the application of an existing firmware upgrade (s)). The EPC list of device model combinations in relation to which DCC has proven through testing its ability to process service requests. A SMETS1 device model combination is typically an electricity meter, gas meter, communications hub and in-home display.

meter marques (henceforth referred to as a 'SMETS1 meter set'), informed by the DCC's design work and a cost-benefit analysis.⁹

16. In October 2018, the government confirmed it would implement its April 2018 consultation proposal that would require DCC to provide SMETS1 services to four out of six SMETS1 meter sets, representing around two thirds of the SMETS1 meter population, in order to ensure interoperability for consumers. The four meter groups consisted of Aclara, Honeywell Elster, Landis+Gyr and Itron. In the government Response, we stated our intention to consult on the remaining SMETS1 meter sets once sufficient information is available from further engagement between existing and prospective service providers and the DCC.¹⁰
17. Following provision of sufficient evidence from the DCC, its service providers and suppliers, in March 2019 the government published a consultation¹¹ on whether DCC should provide a SMETS1 service in respect of SMETS1 Secure meters, representing the vast majority of the remaining third of the SMETS1 meter population.
18. We have not had sufficient information from DCC and its service providers to consult on the case for enrolling the smallest meter set, EDMI, which represent less than 1% of the remaining meters to be enrolled.¹² Once sufficient cost, technical and security information is received, the government intends to consult on whether DCC should be required to offer SMETS1 services for the EDMI meter set as soon as possible thereafter.
19. The previous Smart Metering Implementation Programme Impact Assessments and the latest programme-wide Cost-Benefit Analysis published in November 2016 made an allowance for enrolment, such that the costs and benefits for enrolment which are modelled separately for the analysis summarised in this document are not new and provision is made within the programme-wide Cost-Benefit Analysis. In particular, a significant amount of the costs associated with enrolment are equivalent to SMETS1 data and communication costs currently borne by energy suppliers. We have undertaken a specific analysis on the costs and benefits of enrolment of the Secure SMETS1 meter set to inform this consultation response, based on the latest available information.

⁹ Meter marques or meter cohorts or meter sets are devices that comprise of a number of smart metering systems that are connected to a particular head end system.

¹⁰ www.gov.uk/government/consultations/enrolment-of-smets1-meter-cohorts-with-the-data-communications-company

¹¹ Consultation on the enrolment of Secure Meters in the DCC www.gov.uk/government/consultations/enrolment-of-secure-smets1-meters-in-the-data-communications-company-dcc

¹² Source: DCC data provided in DCC's cost model.

Summary of issue under consideration

20. In March 2019, the government consulted on a minded-to position requiring the DCC to provide an interoperable smart meter service for the Secure SMETS1 meter set. The minded-to position in the consultation was made following the application of three criteria:
 - Whether a net societal benefit exists.
 - Whether there is an acceptable level of security for the end to end smart metering system.¹³
 - Whether the delivery of the potential solutions in respect of the meter set is technically feasible.
21. The consultation estimated a positive net benefit of £346m for the proposal. The NPV does not include qualitative benefits but these benefits contribute towards the case for enrolment. Some cost figures and other details were not disclosed in the consultation for reasons of commercial confidentiality.
22. Following consideration of information provided by DCC, the consultation indicated that if DCC's security architecture is implemented as proposed then an acceptable level of security can be achieved and would enable SMETS1 meters to be enrolled with the DCC without a material increase in risk to the end to end smart metering system. The consultation also set out that consideration of the development of solution designs together with the ability of service providers to implement those designs had resulted in sufficient confidence that the proposed technical solution design for the provision of a SMETS1 service for Secure is feasible.
23. For these reasons, the government proposed a minded-to position requiring DCC to provide a SMETS1 service for Secure meters. The consultation indicated that all relevant considerations would be taken into account before making a final decision. This would include responses to the consultation as well as any updated cost, technical feasibility and security information provided by the DCC. Views were invited on whether DCC should offer a SMETS1 service for Secure meters and whether there were any additional factors that should be considered, including but not limited to, costs and benefits that may inform the government decision. The consultation closed on 2 April 2019.
24. A total of 21 written responses were received from the following organisations:

¹³ The end to end smart metering system refers to DCC's total system, enrolled smart metering systems and/or user systems.

Sector	Respondent
Distribution Network Operators	Northern Powergrid
	Western Power Distribution
Energy Suppliers	Centrica plc
	E Gas and Electricity
	EDF Energy
	ENGIE
	E.ON
	First Utility Limited
	OVO Energy Ltd
	Npower
	Robin Hood Energy Limited
	Scottish Power Energy Retail Limited
	SSE
Utilita Energy Limited	
Meter Operators/Meter Asset Providers	Foresight Metering Limited
	Northern Powergrid Metering Limited
	Smart Meter Assets
	National Grid Smart
Trade Body	Energy UK
Other	ELEXON Limited
	BUUK Infrastructure

Summary of responses to the consultation

Question 1: Do you agree that the DCC should offer SMETS1 Services for Secure meters?

25. There were twenty-one respondents to the consultation. All but one respondent agreed with the proposal (with one other respondent providing no response to this question). Key points raised by one or more respondents included:
- Secure SMETS1 meters must be enrolled with the DCC given their market share so that the widest possible customer base can benefit from SMETS1 interoperability.
 - Protecting vulnerable customers is of paramount importance and the best way to do this is for DCC to offer a SMETS1 service in respect of Secure meters.
 - Given the analysis presented in the consultation, it is prudent to enrol Secure SMETS1 meters as it would ensure interoperability, minimise consumer detriment and minimise risks to consumer confidence in the roll-out.
 - DCC should offer SMETS1 services to the Secure meter set, as this is consistent with the decision taken in October 2018 to enrol other SMETS1 meter types.
 - To do otherwise and replace SMETS1 meters with SMETS2 meters would result in significant costs and have a detrimental effect on customers who currently have a Secure SMETS1 meter installed, particularly as Secure meters make up approximately 32% of the SMETS1 meter population. It would also result in reputational damage to the smart metering programme.
 - Not enrolling Secure SMETS1 meters would also result in a loss of confidence in the smart meter asset funding market and lead to a higher cost of capital for the remaining programme.
 - One respondent disagreed with the proposal and raised the following concerns: that the sequencing of decisions has effectively predetermined the outcome of the consultation; paucity of detail in the CBA precludes meaningful comment; there are additional costs which haven't been included in the analysis; that the consultation fails to take into account negative consumer impacts; and that the government has failed to have regard to its Public Sector Equality Duty and other statutory considerations.

Question 2: Are there any other non-core costs additional to those included in the cost-benefit analysis in this document that arise from the enrolment of SMETS1 Secure meter set which you believe should be considered? Please provide quantitative and qualitative evidence to support your views.

26. Of the twenty responses to this question, fifteen respondents considered that specific costs needed to be clarified or proposed additional costs for consideration. Five respondents indicated that they had no additional costs to the range of costs identified in the consultation. Key points raised by one or more respondents included:
- A few respondents, who supported the case to enrol, commented that the information provided in the consultation was insufficient to enable validation of the business case and some respondents requested clarifications on the inclusion of costs or approach taken in the CBA in the government Response. There were concerns that the approach

using five suppliers to informally estimate costs for consultation purposes may not be reflective of the whole industry.

Modelling assumptions

- Some respondents questioned whether the assumption of a 2% migration failure rate is realistic and takes into account: communication performance; firmware upgrades; and the manner in which they fail. Another approach to the use of failure rates was proposed because of the potential use such rates to benchmark failure.

Additional costs proposed

- Some respondents also stated that meter capabilities that may be excluded from the scope of DCC's core service and included under elective services may result in additional costs to suppliers that should be considered in the CBA.
- Economy 7 prepayment services would need to be introduced prior to customers being migrated to avoid having to offer consumers a different tariff.
- The cost of potentially replacing all payment cards for pre-payment customers need to be considered.
- There are customer communication costs for enrolled dormant meters that may need to be accounted for in the CBA.
- Some respondents requested clarification on whether potential new firmware costs had been included in the CBA for this meter set.
- A number of respondents suggested a range of further issues that may arise during integration, migration and testing including potential change request (costs relating to revisions to key documents and publication of associated change requests) may need to be factored into the CBA. There was also a proposal to review costs once full specifications and security considerations were understood.

Counterfactual

- A number of respondents provided costs relating to the cost of replacing SMETS1 with SMETS2 meters and expressed concerns this would lead to stranded assets resulting in increased costs to industry and consumers which would be exacerbated by the cost of actually removing existing SMETS1 meters. There would also be material reputational damage to the programme from not enrolling such a large meter set to the DCC. One stakeholder provided estimates in relation to SMETS1 smart meters operated by it via Secure's smart metering system operator service. A few stakeholders expressed concerns about the necessity of the existing replacement obligation and the impact that migration delays would have in meeting the obligation.

Question 3: Are there any benefits additional to those included in the cost-benefit analysis in this document that arise from enrolment of the SMETS1 Secure meter set which you believe should be considered? Please provide quantitative and qualitative evidence to support your views.

27. Of the twenty responses to this question, six respondents provided additional benefits or requested clarification and fourteen respondents indicated that they had no further benefits to those identified in the consultation. Key points raised by one or more respondents included:

- Offering a SMETS1 service for Secure meters via DCC will increase competition by removing barriers to switching and encourage customers to move supplier. Although SMETS2 meters are interoperable, customers are unlikely to take up the offer of a replacement meter due to the inconvenience.
- Enrolment will create a single point of responsibility for the end-to-end architecture and security for SMETS1 meters, and any changes to these. It was noted that while the current arrangements for managing SMETS1 meters do mean that some risks are dispersed across the multiple service providers, those arrangements also make it more difficult to identify and address common issues. Enrolment will enable these issues, and especially those related to security, to be managed more effectively.
- Similarly, enrolment into DCC services creates a single point of responsibility for communication with devices, as well as management of incidents associated with those devices. DCC also provide a single point of operational co-ordination across all Users for SMETS2 meters through various forums that it hosts, which could be extended to cover SMETS1 meters as well.
- Secure SMETS1 meters are deployed in sufficient volume to provide economies of scale to the costs of managing all SMETS1 meters. The Secure meter set forms a material share of the market of smart meters deployed to date and were they not enrolled, and subsequently removed, risks not only additional industry costs, but also reputational damage to the Programme and a material reduction in the number of customers who will benefit from an interoperable smart meter.
- Benefits arising from the smart metering customer experience would prevent consumer complaints (and associated costs to manage them). Other costs avoided would include additional costs for Meter Operator Providers (MOP) to replace SMETS1 meters with SMETS2 meters by end 2020.

Question 4: Are there any other factors that we should consider in arriving at our conclusion? Please provide quantitative and qualitative evidence to support your views.

28. Of the nineteen respondents to this question, seventeen provided factors for consideration whereas two provided no further comment. Key points raised by one or more respondents included:
- There is a lack of contingency in DCC's LC13 plan which presents a significant risk and any cost-benefit analysis should ensure that it takes into account any emerging slippage against key L13 delivery dates.
 - Replacing SMETS1 meters with SMETS2 could result in some unsuccessful installs eg at a conservative estimate approximately 1% of installs. There is the possibility that this percentage of customers could potentially lose communications, which results in the loss of features or worse, could potentially go off supply. This is not an outcome that should be risked for pre-payment meters because of the higher proportion of vulnerable customers.

Other information considered

29. To inform the government's decision, DCC provided updated costs, technical feasibility and security information. In its cost model, DCC provided updated costs for delivering

the SMETS1 service for Secure meters following achievement of contract signature with Secure in March 2019.¹⁴ The cost model included optimism bias estimates to account for residual uncertainties around DCC's costs including testing, migration, design and build. The DCC also updated the security architecture document and provided an updated view on risks based upon the enrolment of Secure SMETS1 meters. This was reviewed by the SEC Panel Security Sub Committee who have provided ongoing security guidance to the DCC throughout the design process. Assurance for the technical feasibility of a DCC SMETS1 Service in respect of Secure meters was also provided by the DCC.

¹⁴ www.smartdcc.co.uk/news-and-insights/news/update-on-smets1-enrolment-and-adoption/

Government response

30. Following consideration of the consultation responses and updated DCC information, the government remains of the view that DCC should be required to provide a SMETS1 service for Secure meters. This conclusion takes into account, in particular, a positive net societal benefit, security and technical considerations and includes strategic considerations such as the wider public policy benefits of having interoperable smart meters.

Cost-benefit analysis

31. With most respondents to the consultation agreeing that DCC should offer SMETS1 services to Secure meters and providing factors for consideration in the cost benefit analysis, we remain of the view that sufficient information was provided to enable stakeholders to consider whether the right costs and benefit categories have been included in the cost-benefit analysis and that this provided a sound basis for stakeholders to provide factors to inform the government response. We recognise that estimates provided are high level across categories. However, specific DCC costs for Secure remain commercially sensitive as they reflect costs for a single commercial entity. This in turn has impacted on the extent of disclosure of some other information in the cost-benefit analysis.
32. We are confident that decoupling the Secure consultation from the consultation for the previous four meter set was the right approach. There was insufficient information to assess the viability of enrolling Secure SMETS1 meters at the time of the previous consultation and it was considered necessary to press ahead to provide certainty to industry on those four meter sets and avoid any loss of benefits which would be detrimental to those consumers. Once the decisions were separated, the core costs of developing an enrolment solution would be incurred regardless of whether Secure SMETS1 meters are enrolled. These core costs were fully considered within the decision for the first four meter sets and are not included here again because the HM Treasury Green Book guidance states that only costs and benefits affected by decisions still to be made should be included.
33. A few respondents raised concerns about the method of using feedback from only five suppliers to estimate the potential additional costs for enrolling Secure SMETS1 meters. As part of preparation for both consultations, a small number of suppliers were approached, based on a representation of the market and for the purpose of formulating proposals to test with industry. That information was also used in the preparation for this consultation. The consultation itself provided the opportunity for all stakeholders to provide their own estimates of potential additional costs and to feed in any other factors they considered relevant.

Modelling assumptions

34. We have considered issues raised about the assumption for the migration failure rate. The migration failure rate of 2% is a prudent assumption based on analysis of WAN coverage data, and reflects the number of devices that may fail pre-migration communication checks (where WAN communications for that installation need to have

been successful in the past 7 days) and would require replacement to meet licence obligations. We do not have robust data to inform the likely number of device failures during the migration process but our expectation is that any number will be very low because of the design of the migration process. The migration failure rate is not a benchmark or an expectation of issues arising, but a prudent modelling assumption used to stress test the business case that is in line with the HMT Green Book appraisal modelling.

35. We have not used alternative rates because the rate is based on actual data relating to the conversion rate of capable to compliant meters, where any capable meter without a stable communication link would not be compliant and therefore enrolled.

Additional costs

36. Having considered the consultation responses, we believe that the cost-benefit analysis should include a provision for any elective services that we consider to be required non-core functionality. We consider the provision of functionality to support auxiliary load control services to fall into this category, as it is recognised that this functionality is required to support customers whose installations already rely on the auxiliary load control functionality. If requested in good time, we believe that auxiliary load control services should be provided by DCC as a required elective communication service as part of any Secure capability release, provided it does not lead to a delay to enrolment (in which case we would require the service to be provided at the next available opportunity as part of a subsequent DCC release).¹⁵ Consequently we have now included a provision for auxiliary load control costs in the cost-benefit analysis.
37. In terms of migration issues relating to payment cards, we understand that DCC consider it unlikely that payment cards will need to be replaced however we have factored possible replacement of payment cards into the cost contingency within the cost-benefit analysis as a prudent measure.
38. Following consideration of consultation responses that proposed that energy suppliers would incur a one-off cost from sending a message to customers whose smart meter has gone dumb to inform them that it will be enrolled and therefore become smart again, we believe there will be an additional cost for dormant meter enrolment in the supplier costs category. An uplift (or allowance for communications to dormant meters) has therefore been added to the cost-benefit analysis to account for an expectation that the supplier will communicate establishment of smart services to the customers, along with obtaining data consent choices.
39. New firmware costs to support operation with the Dual Control Organisation (DCO) function are accounted for in the cost-benefit analysis. The assurance we have received that Secure devices comply with SMETS1 specifications has meant that any other additional firmware upgrade costs has not been included as an additional cost in the cost-benefit analysis.
40. A number of respondents raised a range of other issues relating to integration, migration, testing and device issues, which have been accounted for in the cost-benefit

¹⁵ BEIS letter to Energy Suppliers regarding “requests for additional SMETS1 communication services” dated 21 December 2018.

analysis by a provision for uncertainties relating to design and device issues within the optimism bias provided by DCC and applied to costs.

Counterfactual

41. The counterfactual reflects regulation relating to the end 2020 replacement obligation extant at the time of consultation. The intention underlying the enrolment mandate is to ensure that energy suppliers enrol eligible SMETS1 meters, rather than replace them with SMETS2 meters.
42. In response to concerns about the risk of delay to migration of Secure SMETS1 meters, we acknowledge that if the operating capability going live was significantly delayed then we would need to reconsider the interaction between the 12-month enrolment window and the end 2020 replacement obligation. In any event, this issue does not change our decision on the positive case for enrolling Secure SMETS1 meters.
43. We consider the majority of the qualitative impacts raised and the estimates provided by some respondents, which includes the additional costs of Secure's smart metering system operator system (SMSO) costs provided by a supplier, to be robust and have accounted for these costs in the updated cost-benefit analysis.

Analysis update

44. Taking into account the above considerations and updated information from DCC, the results from the updated cost-benefit analysis in the Annex provides a positive net benefit estimated at £331m, which continues to support a decision requiring DCC to offer SMETS1 services in respect of Secure meters. Whilst the net benefit is slightly lower than the NPV presented at consultation at £346m, it remains resilient to any foreseeable delivery milestone changes and any credible changes in interoperability in the counterfactual. The NPV is a prudent estimate as it accounts for uncertainties such as residual design uncertainty. Qualitative benefits such as security enhancements are not included in the NPV but contribute towards the case for enrolling Secure meters.
45. For comparison purposes, if the same counterfactual used to calculate the NPV for the previous four meter set (where the end 2020 replacement obligation was not included in the counterfactual due to it not being in force at the time) were to be used here, the net benefit remains positive at £91m.
46. The Programme will keep the costs and benefits of Smart Metering, including enrolment, under review. An updated Programme-wide CBA is planned for publication later in 2019.

Consumer impacts

47. We have considered how our proposals would affect pre-payment (PPM) customers in particular. We note that if a pre-payment customer wants to switch supplier before their SMETS1 meter is enrolled in the DCC and the gaining supplier cannot operate the meter in smart mode, the meter would normally be replaced with a new meter. While the customer would not go off supply upon switching this process would cause them the inconvenience of a meter exchange. However once the SMETS1 meter has been enrolled in the DCC's national communications network, it will not need to be replaced where a PPM customer wishes to change supplier. In this way, the proposals are to the benefit of prepayment customers.

48. We consider that DCC's provision of core communication services in its solution provides the necessary capabilities required for PPM suppliers in line with the SMETS1 specification and ensures that consumers receive a complete service. Where an energy supplier wishes to take an elective service, we would expect the supplier to request the additional service from DCC in good time to avoid any disruption to the service the consumer might receive.¹⁶ The Smart Energy Code includes provisions relating to the determination of timings regarding the offer of the service and costs for elective services. We note that DCC is currently exploring what would be required to ensure that the existing Secure SMETS1 service for updating tariffs relating to passive Auxiliary Load Control remains available following enrolment. With OFGEM having a broader regulatory role ensuring there are appropriate controls over DCC costs and that there is an incentive regime in place to ensure a quality service, we are confident that consumer interests are protected.
49. In terms of the impact with respect to migration on pre-payment customers, DCC in its Transition and Migration Approach Document (TMAD), does not consider any impact with respect to disconnection to materialise as the Responsible Supplier can choose to put a pre-payment meter in Credit Mode (or in a non-disablement window) while migration takes place and then revert back to pre-payment mode post migration. In addition, the supplier has the right to flag as priority any customer that should be prioritised over others being migrated on the day. We consider that prevention of this risk is an operational decision taken by each individual Responsible Supplier.¹⁷
50. Where any meters have intermittent WAN, it is unlikely that in all cases the meter cannot be enrolled and would need to be replaced. The Transition and Migration Approach Document (SEC appendix AL - TMAD) sets out the process to be followed for triggering migration, which includes the requirement to 'confirm that there has been one or more wide area network communications with the Communications Hub in each of the Requested Installations within the last 7 days' (section 5.12c). Provided WAN has been available at least once in the last 7 days, the meter should be subject to migration.¹⁸ The TMAD requires DCC to develop a Migration Error Handling and Retry Strategy to establish the process for dealing with any failure to communicate with the meter (e.g. for how long to keep trying; what happens subsequently). Where SMETS1 meters do not have any WAN connectivity, it is unlikely they will be eligible to be enrolled.
51. In terms of the customer experience, energy suppliers are working with Ofgem and consumer groups through the BEIS led Consumer Reference Group to develop a good practice guide for customer communication. As part of this work a number of suppliers have informed us that they expect to issue communications to consumers on SMETS1

¹⁶ The assessment for requests for electives services are based on the following criteria: DCC's assessment of the delivery and security impacts of making the service available; the extent to which the service request is currently in use (or likely to be in use before the meters are enrolled); whether equivalent functionality is already proposed for inclusion as a SMETS1 core communication service (to the extent that requests for any such functionality have not already been withdrawn following engagement with the DCC); and whether there is any adverse impact on consumers or the smart metering benefits case if the service were not made available immediately following (or shortly after) enrolment.

¹⁷ DCC's Transition and Migration Approach Document Section 2.4

www.smartdcc.co.uk/media/3006/smets1_tmada_v03_conclusions_document.docx

enrolment and we agree that all suppliers should develop appropriate customer communication plans.

Security

52. The DCC has updated its SMETS1 Security Architecture document and provided an updated view on risks based upon the enrolment of Secure meters. This has been reviewed by the SEC Panel Security Sub Committee which has provided ongoing security guidance to the DCC throughout the design process. Based up on these reviews and the information provided, we support the DCC's position that if the security architecture for Secure meters is implemented as proposed then an acceptable level of security can be achieved. Independent assurance of the design, implementation and build aspects of DCCs security approach for Secure will be provided by a Competent Independent Organisation (CIO).
53. Our assessment also recognises the additional security benefits arising from enrolling Secure SMETS1 meters in to the DCC, which include:
 - Alignment with the security and assurance requirements of the SEC.
 - Inclusion within the end-to-end risk assessment and security architecture which the SSC is responsible for maintaining, thereby ensuring a holistic view of risks and controls across all enrolled set.
 - In addition to the security controls that Secure meters already have in place, enrolment would also enable Secure meters to capitalise on the centralised alerting and monitoring systems provided by the DCC to provide timely insight into identifying and mitigating potential issues or threats.

Technical feasibility

54. Following provision of updated information from the DCC, the government remains confident in the technical feasibility of the proposed enrolment solution based on DCC's progress towards development of its solution designs and assurance provided in the terms of the contract for enduring services that Secure and DCC have entered.
55. The SEC Subsidiary Documents that set out the over-arching technical solution design of the DCC SMETS1 solution have been baselined through the Programme transitional governance arrangements. We remain assured that DCC has incorporated this design baseline as requirements for its enduring service and we continue to have sufficient confidence that DCC has included the appropriate functional and non-functional solution provision into its considerations with Secure. Although amendments to the baseline design documents may arise from the development and testing phase, we have received no evidence to believe that these amendments will be significant given the solution is well established and forms the basis of the enduring service, which is the subject of ongoing discussions between Secure and DCC. For these reasons, the government considers that it has sufficient confidence in the technical feasibility of the proposed technical solution design for the provision of a SMETS1 service for Secure.

Conclusion

56. For the reasons outlined above, the government has concluded that it will require DCC to provide SMETS1 service for Secure meters. These considerations take into account, in particular, a positive net societal benefit, security and technical factors and includes strategic considerations such as the wider public policy benefits of having interoperable smart meters for consumers with Secure SMETS1 meters. This follows support from almost all but one of the consultation respondents for this position.

Next steps

57. Once all relevant testing is satisfactorily concluded, we would expect to approve Secure SMETS1 device model combinations to the Eligible Product Combinations list to trigger the 12 month enrolment obligation on energy suppliers to take all reasonable steps to enrol smart metering systems comprising that device model combination. The “go live” confirmation is intended to ensure the 12 month enrolment obligation only takes effect from the point when the DCC’s service is ready. Energy suppliers will need to schedule the enrolment of their ‘active’ meters within 12 months and operate the ‘dormant’ meters (those which have changed supplier and stopped providing smart services) in smart mode in line with licence obligations once enrolled by DCC.

Annex: Updated cost-benefit analysis

58. This annex provides an explanation of the costs and benefits of enrolling Secure SMETS1 meters with the DCC. The analysis assesses the costs and benefits of enrolment relative to a Do Nothing option and is based on there being over five million Secure SMETS1 meters with under two million of these meters being prepayment meters.
59. In the Do Nothing option, SMETS1 meters are not enrolled in the DCC and some customers who switch energy supplier either lose their smart services or have their meter replaced. By the end of 2020, we assume that any unenrolled SMETS1 meters will have been replaced with a new SMETS2 meter to comply with the end 2020 replacement obligation. This is a change from the analysis completed for the other four meter sets, in the previous consultation, which assumed meters would only be replaced from 2021 if they stop operating as smart on subsequent change of supplier. The change was made to reflect the policy framework extant in regulations at the time of the analysis.
60. In the enrolment option, SMETS1 meters are enrolled in the DCC. In this option, SMETS1 meters become interoperable within 12 months of the point that the capability for enrolment goes live. Most meters that have lost smart services on churn will regain smart services and become interoperable once these meters are enrolled. All meters that churn after enrolment are assumed to stay smart.
61. The enrolment of SMETS1 meters with the DCC will provide a number of benefits to consumers and the energy industry. Notably, it enables consumers to retain smart services on change of supplier and supports their engagement with the energy market. It also leverages operational cost savings through a centralised service. A significant amount of the benefit for enrolment will occur from the avoided cost of meter replacements and the reduced hassle to consumers as well as benefiting from regaining smart services earlier compared to the Do Nothing option.
62. As with the other four meter set, enrolment will lead to additional costs to the DCC to design, build, test and operate the enrolment solution, and to energy suppliers and other organisations to implement changes to support the solution. The methodology used to derive each cost and benefit area is provided in this annex. Where it has not been possible to quantify specific costs of enrolment, a provision has been made through the inclusion of optimism bias. This also captures residual uncertainty around costs. No equivalent provision has been made for benefits that have not been quantified but these have been described qualitatively and taken into account in assessing the case for enrolment of Secure SMETS1 meters.
63. The costs to develop the core functionality to support enrolment were included as part of the decision for the first four meter sets, so they are not included in the assessment for Secure. This approach is in line with HM Treasury Green Book guidance, which recommends focussing on the additional costs and benefits of each decision when appraising projects.¹⁹

¹⁹ HM Treasury Green Book www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government

64. All figures presented in this annex are present values that have been discounted to 2016 using the HM Treasury Green Book social discount rate and are expressed in 2011 prices, unless otherwise stated. This is consistent with methodology for the overall programme-wide Cost-Benefit Analysis. Certain details are unable to be disclosed in this analysis as they are commercially sensitive.

DCC costs

65. DCC will incur costs to design, build, test and operate a SMETS1 enrolment service for Secure meters.
66. Some costs form part of the core functionality required to deliver a SMETS1 service and would be expected to be incurred irrespective of the number and type of meters that are enrolled. These costs were included in the previous assessment for the first four meter sets and have not been re-applied. These include:
- Most of the DCC internal costs to deliver the SMETS1 Enrolment & Adoption programme.
 - Some external service provider costs, such as the costs of alterations to the Data Service Provider system and most costs of the Dual Control Organisation (DCO).
67. Other costs will only be incurred when a specific meter set is enrolled. This includes, in the case of Secure SMETS1 meters, the cost to design, build, test and operate the specific solution, taking into account the changes required by the existing Smart Meter System Operator (SMSO) to support a DCC SMETS1 service and the provision of an ongoing communications service.
68. To inform the government response, DCC provided a further update of their cost model with estimates for each of the cost categories above.
69. In line with HM Treasury Green Book guidance, only costs that are additional are included in this analysis. Some of the costs incurred by the DCC will not be additional to the costs incurred in the Do Nothing option. These include:
- The cost of security enhancements in the form of system hardening that energy suppliers and SMSOs would be expected to incur as part of ongoing security reviews.
 - Ongoing data and communication costs, which are currently paid to SMSOs by energy suppliers.
70. The analysis reflects that there would be fewer SMETS1 meters over time in the Do Nothing option due to some being replaced when a customer switches supplier and any unenrolled SMETS1 meters being replaced with SMETS2 by the end of 2020 in line with the licence obligation on energy suppliers to do so. When a SMETS1 meter is replaced with a SMETS2 meter it is expected that the ongoing SMSO costs for that meter would no longer be incurred.
71. To account for the remaining uncertainty, the DCC has included optimism bias on top of its estimated costs. This has been calculated separately for each cost category by combining information on the upper bound for optimism bias recommended in the HM Treasury Green Book supplementary guidance on optimism bias with information on the

mitigation actions taken by DCC that would reduce the risk of cost escalation. BEIS has reviewed the estimates of optimism bias provided by DCC and has included them within this analysis.

Energy Supplier Costs

72. Energy suppliers that have installed Secure SMETS1 meters will incur additional costs to support SMETS1 enrolment. This includes:
- IT system changes, including to metering, billing and Customer Relationship Management (CRM) systems, to support the operation of SMETS1 meters via the DCC as opposed to via an SMSO.
 - Testing and migration costs as part of the programme of work to enrol SMETS1 meters in the DCC to validate that the meters suppliers enrol will function as required.
 - System decommissioning costs to close down legacy SMETS1 services.
 - The cost of firmware upgrades.
 - The cost of replacing any meters that are assumed cannot be enrolled.
 - A one-off cost needed to contact customers with dormant meters to notify them that their smart services are being restored.
73. The costs of IT systems changes, testing and migration, and system close down to enrol SMETS1 Secure meters in the consultation document were estimated using information collected by BEIS through an informal information request to a number of suppliers (and accounting for response to the previous consultation). Responses were received from five energy suppliers providing a range of cost estimates, reflecting the different approaches adopted by individual suppliers and the uncertainty around the activity and costs required to enrol meters in the DCC. The average cost across the five responses was used for each cost category. The government response to the previous consultation on the first four meter sets allocated a portion of these costs to cover the suppliers that would be enrolling those meter sets. In this analysis for Secure, the cost was scaled to cover suppliers enrolling Secure SMETS1 meters.
74. In addition, all energy suppliers that wish to operate gained SMETS1 meters via the DCC will need to implement changes to their systems, resulting in additional costs, incurred irrespective of the number and type of meters that are enrolled. The costs of these IT and business changes to operate gained SMETS1 meters via the DCC were also estimated at the consultation stage for the previous four meter sets using the responses to the informal information request described above. The average cost across the five responses was used for each cost category and the costs were scaled up to cover all suppliers in the retail energy market. These costs were fully accounted for in the first four meter sets so are not included in this assessment. They include:
- IT changes to support enduring operation of SMETS1 meters via the DCC. This includes changes to a DCC adaptor service provider to process SMETS1 content in DCC User Interface Specification (DUIS) and Message Mapping Catalogue (MMC) and other changes to the Change of Supplier (CoS) process to identify gained SMETS1 meters and process them appropriately.

- Business changes to ensure customer service operations can support the various meter types their customers have.
75. The cost of firmware upgrades mentioned above has been estimated by utilising the number of firmware upgrades needed to pre-configure Secure SMETS1 devices for enrolment and the cost to roll out the firmware images to relevant devices. The cost per distribution of firmware upgrades has been taken from information provided by suppliers based on current SMSO/Supplier contracts.
76. This cost-benefit analysis uses prudent modelling assumptions in line with the HM Treasury Green Book. For instance, a prudent assumption of 2% has been made for devices that may fail upon migration and would require replacement to meet licence obligations. This does not reflect any certain expectation that this issue will arise. The 2% value is based on an analysis of communication performance. It has been informed by the conversion rate of capable to compliant meters, since any capable meter without a stable communications link would not be made compliant. The percentage has been adjusted as some suppliers have not completed their capable-to-compliant upgrade such that using current proportions would overstate the likely number of migration failures. In addition, as at the consultation stage, we assume 1% of SMETS1 meters dilapidate each year in both the Do Nothing and enrolment options.
77. Responses to the consultation on the first four meter sets identified several other cost categories, although respondents to that consultation and to the Secure consultation did not provide sufficient evidence that would enable these costs to be quantified. To account for these additional costs and given the uncertainty that remains around the migration and testing costs, an optimism bias uplift of 10% has been applied to all energy supplier costs.
78. In addition, in response to the Secure consultation, several uncertain costs were identified and these costs have been added to the cost contingency. These include the potential cost of providing auxiliary load elective services and the potential cost of reconfiguration of devices. The DCC consider it unlikely that payment cards will need to be replaced. However we have factored possible replacement of payment cards into the cost contingency within the cost-benefit analysis as a prudent measure.
79. Secure SMETS1 meters have some non-core Unique Transaction Reference Number (UTRN) functionalities providing services when there is no WAN. We would not expect enrolment to take place in this situation. In the situation where there is intermittent WAN coverage, consumers will be able to top up and maintain supply (via the manual input of the UTRN) via the DCC service. For other services that the non-core UTRN functionality currently provides in cases with intermittent WAN which are not essential to the maintenance of supply, such as change of tariff, the service would be queued until there was a WAN signal. We have, therefore, not included additional costs to suppliers for the provision of UTRN services.
80. The cost to energy suppliers of specifically enrolling Secure meters is estimated to be £36m. A breakdown of these costs is shown in Table 1 below.

Table 1: Breakdown of supplier costs

Supplier cost breakdown	Total Cost
IT Changes to support SMETS1 operation via DCC as opposed to via SMSO	£11m
Testing and Migration costs as part of programme of work to enrol SMETS1 meters into the DCC	£11m
Service Close Down	£3m
Firmware upgrades	£2m
Other costs to energy suppliers associated with SMETS1 enrolment and adoption which are not identified above	£2m
Optimism bias and cost contingency	£7m
Total supplier cost	£36m

Network operator and third-party costs

81. In the previous consultation on the first four meter sets, it was identified that other parties that connect to the DCC will have to make changes to their systems to handle SMETS1 interaction via the DCC. In particular, network operators will need to identify differences between SMETS1 and SMETS2 devices in order to correctly interpret data returned from devices. As these costs, which are not expected to vary by meter type or number of meters enrolled, were accounted for in the previous consultation on the first four meter sets they are not applied again here.
82. A provision for the potential costs to third parties that may need to incur additional costs to distinguish between SMETS1 and SMETS2 devices has been made. These were also accounted for in the previous consultation on the first four meter sets and are not applied again here.
83. The initial outlay for MAPs and the income they would have expected over the lifetime of the SMETS1 asset is not explicitly accounted for in this analysis because the outlay has already occurred. So, in both the enrolment and counterfactual scenarios, this cost is paid regardless. This analysis only looks at any costs that are additional. So in this case we have only accounted for the additional cost from bringing forward the replacement of a SMETS1 meter in the counterfactual (i.e. the early replacement costs).

Benefits

84. Due to the end 2020 replacement obligation, we assume that by the end of 2020 any unenrolled SMETS1 meters will be replaced with a new SMETS2 meter. For modelling purposes, we have assumed that meter replacements would occur at the end of 2020. In practice it is likely that replacement would occur over the course of the year and the costs in the counterfactual would be higher than we have estimated. DCC enrolment would avoid the loss of benefits where a SMETS1 meter loses smart services on change of supplier, and the additional costs of meter replacements.
85. In the absence of DCC enrolment, some SMETS1 customers who switch energy supplier will temporarily lose smart services. The number of SMETS1 customers who lose smart services in the Do Nothing option has been estimated by combining assumptions on the number of customers who switch energy supplier each year and the interoperability of those meters. Based on the latest Ofgem State of the Market report, customers are assumed to switch supplier at a rate of 18% per annum, and around a third of customers are assumed not to switch supplier over the course of the SMETS1 meter's lifetime. The Ofgem Consumer Engagement Survey 2018 shows that smart meter customers are currently switching more than non-smart meter customers. However, this may not be the case over the whole appraisal period, so this analysis uses the overall market switching rate for its central estimate.
86. The proportion of meters for which smart services are retained when a customer switches supplier is based on the current level of interoperability of Secure meters from data reported to BEIS by energy suppliers. We have considered scenarios for higher interoperability in the counterfactual.
87. In the counterfactual, for consumers who lose smart services on switching before the end 2020 replacement obligation applies, we have assumed that a small proportion have had their meter replaced. The rate of replacement is based on data reported to BEIS by energy suppliers.
88. The avoided cost of replacing SMETS1 meters and value of retaining smart services have been monetised using values taken from the BEIS Smart Meter Rollout 2016 Cost-Benefit Analysis. The costs of financing meter equipment and installations have been annuitised over the lifetime of the meter and uplifted for optimism bias. The underlying assumptions for each of these are described in Section 1 of the technical annex (Part II) of the 2016 programme-wide Cost-Benefit Analysis. The analysis draws on a range of evidence, including cost estimates provided by industry, academic studies, international comparisons and research commissioned by the Programme into the benefits of smart metering.
89. Benefits are assumed only to be realised once enrolment capability has been provided and the SMETS1 meters have been migrated to the DCC system. In DCC's SMETS1 delivery plan published on 13 February 2019, DCC plans to deliver the relevant capacity for the end of September 2019. Energy suppliers are assumed to enrol meters at a constant rate and complete their migration 12 months after end September 2019. If there is a delay to this migration date, the NPV would be reduced by roughly £3m per month of delay.
90. The analysis includes an estimate of the avoided time and reduced hassle costs to consumers that enrolment provides, by avoiding the need for a SMETS1 meter to be

replaced before the end of its lifetime. This has been calculated using relatively conservative assumptions on the time it takes for a consumer to arrange and be in for an installation and has been valued using the values of time in the Department for Transport's guidance on time valuation. This is the same method as was used in the analysis for the first four meter sets.

91. There is a reduction in benefit from enrolment caused by the fact that only SMETS2 meters gain from certain network benefits. In the enrolment scenario fewer meters are assumed to be replaced by a SMETS2 meter as they are assumed to be enrolled and, therefore, do not need to be replaced. The network benefit per meter is consistent with the 2016 Smart Metering Cost-Benefit Analysis.
92. There are some benefits from avoided UTRN costs. Each UTRN attracts a specific charge but only in relation to meters that are running in prepayment mode. Once meters are enrolled, these charges are no longer incurred so this is avoided in the enrolment option.
93. The impact of the enrolment option on prepayment customers has also been considered and we believe it should have no significant adverse impact, whilst securing the benefits accruing to all customers of enrolled smart meters. Under the SEC, there are formal mechanisms by which a supplier can request that DCC provide any additional non-core services that they wish to receive on a bilateral basis.

Results

94. Following consideration of consultation responses and updated information from the DCC, the updated cost-benefit analysis described in this Annex continues to support a decision requiring DCC to offer enrolment services to Secure meters. Enrolment of these SMETS1 meters in the DCC is now estimated to provide an overall net benefit to Great Britain of £331m.
95. Relative to the consultation stage analysis, the Net Present Value (NPV) has fallen from £346m to £331m. A breakdown for the reasons of the change in costs is shown in Table 2 below.

Table 2: Summary of changes in the NPV since the consultation stage analysis

Cost area	Rationale for change	Change in NPV (+ve shows increase in net benefit)	Resulting NPV
Starting NPV			£346m
Changes to meter numbers and SMSO charges	More recent data returns show higher numbers of Secure meters. We also received updated SMSO charges from one supplier	+£8m	£354m
Charge to send communications to dormant meters	Consultation responses identified this as an additional cost to notify customers of smart services being restored	-£1m	£353m
Additional cost contingency for supplier costs	Additional cost contingency to cover potential supplier costs identified by consultation responses (card replacement, auxiliary load services, and device reconfiguration)	-£3m	£350m
Updated DCC costs	Updated costs forecast received from DCC	-£19m	£331m
End NPV			£331m

96. As per Green Book guidance, only costs and benefits affected by decisions still to be made should be included. Therefore, the core DCC and supplier costs, that were included for the four meter set in the previous consultation are not included here again as they are incurred regardless of whether Secure meters are enrolled. Even if a portion of these core costs were included, the NPV would remain positive.
97. The change in the counterfactual is partly responsible for the increase in NPV relative to the previous consultation for the first four meter sets. For comparability with the consultation for the first four meter sets, if we were to retain the previous counterfactual presented in that consultation (where the end 2020 replacement obligation does not apply) the net present value would remain positive at £91m (decreased from £103m at the consultation stage).
98. Enrolment is expected to provide a number of additional benefits which we do not have sufficient evidence to be able to quantify. This includes the following benefits identified in consultation responses, as described in the “Summary of responses to the consultation” section above:

- a. Facilitating competition through removing barriers to switching and encouraging customers to move supplier.
 - b. Creating a single point of responsibility for the end-to-end architecture and security for SMETS1 meters, and any changes to these. This will enable issues (especially those related to security) to be managed more effectively.
 - c. Creating a single point of responsibility for communication with devices and management of incidents associated with those devices.
 - d. Providing economies of scale for the costs of managing all SMETS1 meters, because the Secure meter set forms a material share of the market of all smart meters deployed to-date.
 - e. Avoiding reputational damage to the Programme and consumers continuing to lose smart services on churn.
 - f. Preventing customer complaints (and associated costs to manage them) resulting from customers not being able to benefit from the smart metering customer experience.
 - g. Avoiding additional costs for Meter Operator Providers (MOPs) when they are needed to meet 2020 installation requirements.
 - h. Providing third-party access to data to enable innovation.
 - i. Additional security benefits.
99. These benefits further support the decision to enrol the Secure meter set. We will continue working with DNO's, MAPs and other interested parties to maximise use of all relevant functionality in delivering benefits.

Sensitivity analysis

100. We have run sensitivity analysis with different scenarios around delivery timescales and levels of interoperability of Secure meters in the counterfactual for both the previous counterfactual and the current counterfactual.
101. A delay in enrolment capability being provided or in the completion of migration would result in lower benefits and higher costs than if current milestones are met. This is caused by benefits being lost from meters losing smart services over a longer period of time, fewer avoided SMSO and UTRN costs and potentially more meters being replaced by SMETS2 meters. Our analysis showed an NPV reduction of around £3m per month of delay in the provision of a SMETS1 service to Secure meters.
102. Higher levels of interoperability have a low impact on the NPV. For instance, increasing interoperability in the counterfactual by 10% reduces the NPV by £2m.
103. In the absence of a DCC enrolment solution being available, it is possible suppliers would implement alternative interoperability solutions. We now consider this scenario unlikely to occur in light of responses to the 'Maximising interoperability for SMETS1

meters' consultation²⁰. It has therefore not been modelled as part of this cost-benefit analysis. In particular, a number of energy suppliers confirmed in their responses to the previous consultation on the first four meter sets that they consider there are already sufficient commercial incentives on suppliers to enrol SMETS1 meters in the DCC and they would utilise the DCC enrolment solution provided it is cost-effective. In addition, an industry-led interoperability solution has not been the subject of the same level of scrutiny as the costs of DCC enrolment and it is possible costs would be much higher than previously estimated in the consultation stage CBA for the other four meter set.

Environmental impact

104. The cost-benefit analysis presented in this annex takes account of the carbon and air quality impacts of device energy consumption and consumer energy savings.

²⁰ www.gov.uk/government/consultations/maximising-interoperability-for-first-generation-smets1-smart-meters

This consultation is available from: www.gov.uk/government/consultations/enrolment-of-secure-smets1-meters-in-the-data-communications-company-dcc

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