Department for
Business, Energy
& Industrial Strategy

Smart Meter Policy Framework Post 2020:

Government response to a consultation on minimum annual targets and reporting thresholds for energy suppliers

Impact Assessment

June 2021

Contents

Summary: Interventions and Options

Title: Post-2020 smart meter rollout **IA No:** **BEIS016(C)-19-SMIP** **RPC Reference No:** **RPC-BEIS-5035(2)** **Lead department or agency:** Department for Business, Energy and Industrial Strategy **Other departments or agencies:** None	Impact Assessment (IA) **Date: 03/06/2021** **Stage: Final** **Source of intervention: Domestic** **Type of measure: Secondary legislation** **Contact:** smartmetering@beis.gov.uk
Summary: Intervention and Options	**RPC Opinion:** GREEN

Cost of Preferred (or more likely) Option (in 2019 prices, 2020 PV Base Year)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status**
£1,193m	£309.5m	£48.8m	Qualifying provision

What is the problem under consideration? Why is government action or intervention necessary?

This intervention is designed to drive the consistent, long-term investment needed to achieve high levels of smart meter coverage by setting annual targets and providing regulatory certainty. Under the current smart meter regulatory framework, energy suppliers have an obligation to take "all reasonable steps" (ARS) to install smart meters in all premises by the end of June 2021. This was expected to deliver 45.6% coverage (equating to c.26 million smart meter installations) building a strong foundation for an enduring smart energy system which is key for the cost-effective delivery of Net Zero. However, Government recognises that without regulatory certainty the rollout will risk losing momentum beyond June 2021 with consequential impacts on the ambition for a smart energy system and the delivery of wider infrastructure and environmental benefits. The policy measure will see ARS extended until the end of December 2021, allowing suppliers to appropriately plan for the new tolerance level regulatory framework after the uncertainty created by the COVID pandemic and the nationwide restrictions imposed as a result. This new framework will start on 1 January 2022 and will: provide industry with clarity and certainty on the smart meter policy landscape post ARS; drive further investment; and ensure the programme maintains its ambition and reaches the remaining GB population. It will also ensure delivery of the programme's objectives (as outlined in the box below) in line with Government commitments on the efficient delivery of Net Zero. Following this extension and prior to the start of the framework, smart coverage is expected to reach 49.2%) by 31 December 2021.

What are the policy objectives of the action or intervention and the intended effects?

We have identified four key design principles for the policy framework:

- To encourage consumers to benefit from the rollout of smart meters, including how to use the data from their smart meters.
- To deliver a market-wide rollout of smart meters as soon as possible, that ensures value for money and maintains installation quality so that consumers can derive maximum benefit and have a good experience.
- To normalise smart meters so they are the default meter used in Great Britain.
- To provide certainty to the whole sector to invest and plan, ahead of and beyond June 2021.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

The following options have been considered:

1) Do Nothing: This is the counterfactual scenario without additional regulation. In this case, energy suppliers would only be required to take all reasonable steps to install smart meters for new metering points and for meter replacements, which would deliver substantially lower smart meter coverage.
2) Option 1 (preferred option): This establishes annual targets during a period of four years (from 1 January 2022 to 31 December 2025) for each energy supplier, based on a straight-line delivery trajectory towards the overall ambition of market-wide rollout with 'tolerance values' thereby accounting for challenges which might limit energy suppliers' ability to deliver the required smart meter coverage. At this stage, only the targets and tolerance values for the first two years of the framework (i.e., starting 1 January 2022 and 1 January 2023) will be implemented with a review planned in 2023 followed by a consultation to set the tolerances for the final two years of the Framework. From July 2021 to end of December 2021 the ARS framework will remain in place.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: During 2023

Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded: -1.3**	**Non-traded: -3.2**	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: ..... Date: 03/06/2021

Summary: Analysis and Evidence

Policy Option 1

Description: Main policy scenario – linear targets towards market-wide smart meter coverage by 30 June 2023

FULL ECONOMIC ASSESSMENT

Price Base Year 2020	**PV Base Year** 2021	**Time Period Years** 14	**Net Benefit (Present Value (PV)) (£m)**		
			Low: 1,008	**High: 1,464**	**Best Estimate:1,306**

COSTS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Cost** (Present Value)
Low	Optional	99	**1,153**
High	Optional	139	**1,621**
Best Estimate		124	**1,448**

Description and scale of key monetised costs by 'main affected groups'

The majority of these costs are incurred by energy suppliers for (a) the purchase of metering assets (smart meters, in-home displays, and communications hubs); and (b) the installation of these meters. Combined these areas make up around 80% of the total cost. Other costs include operational and maintenance costs, supplier IT costs, pavement reading inefficiencies and disposal costs, which are all incurred by suppliers. These costs are likely to be passed through to consumers through impacts on energy bills.

Other key non-monetised costs by 'main affected groups'

While we have monetised the time cost to consumers resulting from the typical duration of an installation visit (around two hours to complete), consumers will also incur a non-monetised opportunity cost relating to the time that they may stay at home prior to and following this installation visit.[1]

BENEFITS (£m)	**Total Transition** (Constant Price) Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Benefit** (Present Value)
Low	0	196	**2,161**
High	0	280	**3,085**
Best Estimate	0	250	**2,754**

Description and scale of key monetised benefits by 'main affected groups'

Consumers will benefit directly through energy savings that smart meters enable them to realise. This makes up around a third of the total benefits. Most of the remaining benefits are to energy suppliers, including avoided site visits (e.g., for meter reading), reduced customer service enquiries, and lower costs to serve prepayment customers. We expect these savings to be passed on to consumers through lower bills. There are also environmental benefits from reduced energy usage and benefits to electricity network operators through improved fault detection and better-informed investment decisions.

Other key non-monetised benefits by 'main affected groups'

Smart meters are an important upgrade to our national energy infrastructure that will enable the creation of a more flexible and more resilient energy system benefitting both consumers and suppliers. They will enable suppliers to offer innovative new tariffs, including smart tariffs which charge consumers different prices for electricity at different times of the day. Additionally, they will facilitate consumers in shifting their electricity use away from peak times which will be critical to the future of our energy system, reducing the need for costly network reinforcement and investment in additional peak generation.

Key assumptions/sensitivities/risks	**Discount rate (%)**	3.5

This Impact Assessment is based on the latest Cost-Benefit Analysis model for the smart meter rollout, which was published in September 2019. The recency and comprehensive nature of that assessment gives confidence that it remains suitable for the purposes of this impact assessment. COVID-19 presents another risk on the level of installations that can be achieved. We have accounted for this where practicable in our calculations – more detail can be found below.

BUSINESS ASSESSMENT (Option 1) –

Direct impact on business (Equivalent Annual) £m:			**Score for Business Impact Target (qualifying provisions only) £m:**
Costs: 120.4 (1 d.p.)	**Benefits: 67.0 (1 d.p.)**	**Net: 53.5 (1 d.p.)**	BIT Score of 244.1

[1] Given that this does not inherently displace other activity (and the extent to which this would varies by consumer) this cannot be reasonably monetised.

Evidence Base

Background

Problem under consideration

1. Smart meters are replacing traditional gas and electricity meters across Great Britain as part of a vital national infrastructure upgrade that will digitise our energy system. Smart meters will make our energy system more efficient and flexible, enabling us to use more renewable energy more cost effectively and reduce our reliance on fossil fuels. This will cut costs for consumers and help us achieve net zero carbon emissions by 2050.

2. Smart meters offer a range of intelligent functions and provide consumers with more accurate information, bringing an end to estimated billing. The half-hourly consumption and price data recorded by smart meters enables innovative tariffs that reward consumers for reducing their energy use, as well as using energy away from peak times or when there is excess clean electricity available.

3. Energy suppliers are currently under a legal obligation to take "all reasonable steps" to install smart meters in all domestic and smaller non-domestic consumers' premises by the end of June 2021. The programme has been an important contributor to the national economy supporting around 15,000 jobs across Great Britain with over 99% of the funding coming from the private sector and annual investment running at c.£1bn. This obligation has delivered huge investment across the energy sector to design and deliver a national interoperable metering infrastructure. Millions of people across Great Britain are already benefitting from smart meters, and many more are expected to do so before the end of June 2021. This framework is seeking to continue this beyond June 2021.

Rationale for intervention

4. As described above, smart meters deliver significant benefits to consumers and the energy system. The market-wide rollout of smart meters will also be necessary to help maximise the benefits of half hourly settlement, which Ofgem is considering in respect of domestic and smaller non-domestic consumer segments[2] (larger non-domestic consumers are already subject to half-hourly settlement) and to create a flexible energy system, thus enabling the effective delivery of net zero by 2050. The Committee on Climate Change report[3] suggested that without a flexible energy system the cost of achieving net zero will increase by £16bn per annum so rolling out smart meters as soon as possible is an important requirement. Government intervened in ensuring the roll out for Smart Meters due to a range of barriers to take up – these are set out in the 2019 Smart Meter Roll Out: cost-benefit analysis[4].

5. The existing obligation to take "all reasonable steps" to install smart meters in all premises is due to expire on 30 June 2021. After this date, the New and Replacement Obligation (NRO) [5] means that energy suppliers will be required to only install smart meters at new metering points and for meter replacements (subject to all reasonable steps). If smart meters were only installed for new and replacement situations, this would lead to a substantial slowdown in the current smart meter installation rate. Any installations beyond this minimum would be optional, meaning that we could not be confident that the momentum of the rollout would be maintained beyond the end of June 2021. This would delay the point at which a market-wide smart meter rollout is reached, putting at risk the delivery of the benefits of a smarter energy system to energy consumers, industry and society as a whole.

[2] https://www.ofgem.gov.uk/electricity/retail-market/market-review-and-reform/smarter-markets-programme/electricity-settlement-reform
[3] Net Zero Technical Report May 2019
[4] https://www.gov.uk/government/publications/smart-meter-roll-out-cost-benefit-analysis-2019
[5] https://smartenergycodecompany.co.uk/latest-news/government-response-to-january-2019-consultation-on-the-new-and-replacement-obligation-nro-activation-date/

6. Given the importance of providing industry with early clarity and certainty on the policy landscape post 2020 (in order to enable energy suppliers to adequately plan for the delivery that will be required), the Energy Minister confirmed at the BEIS Select Committee in January 2019 that Government would provide clarity during 2019 on its plans for future smart meter rollout obligations. In September 2019, we consulted on proposals which indicated our expectation that energy suppliers should continue rolling out smart meters on the basis of binding annual targets during 2021 and beyond. In June 2020, the Government confirmed that from 1 July 2021 a new four-year policy framework will be implemented with fixed annual installation targets for energy suppliers that will drive continued investment and support the cost-effective delivery of net zero and our clean economic recovery. In this Government response we also confirmed an extension of the existing all reasonable steps obligation that was due to expire on 31 December 2020 by six months to 30 June 2021. This was to take account of the short-term uncertainty caused by COVID-19 and enable energy suppliers to return to installing smart meters at volume prior to the new Framework taking effect.

7. In November 2020, Government issued a further consultation proposing annual targets for Years 1 and 2 of the new framework. These targets would be set at individual level following a trajectory towards 100% smart penetration subject to annual tolerance levels applying across industry as a percentage of suppliers' customer base. This would create a minimum installation quantity that an energy supplier must achieve in each year of the new framework.

8. In formulating our revised policy framework, we considered the responses provided by stakeholders across the industry and consumer advocacy organisations, and took account of their views to design a framework that balances achievability and ambition in order to stimulate the investment needed to deliver a market-wide roll out of smart meters across Great Britain.

Policy objective

9. Through engagement with energy suppliers, Ofgem, and Citizens Advice, we have identified four key design principles for the policy framework beyond 30 June 2021:

    - To encourage consumers to benefit from the rollout of smart meters, including how to use the data from their smart meters;
    - To deliver a market-wide rollout of smart meters as soon as possible, that ensures value for money and maintains installation quality so that consumers can derive maximum benefit and have a good experience;
    - To normalise smart meters so they are the default meter used in Great Britain; and
    - To give certainty to the whole sector to invest and plan, ahead of and beyond 30 June 2021.

Description of options considered

10. This Impact Assessment considers the costs and benefits likely to arise under the policy framework for the post-June 2021 period[6], compared against a status quo counterfactual scenario. The Government response document published in June 2020[7] confirmed the policy approach, having considered a range of different options.

11. In September 2019, we initially consulted on three policy options for a new policy framework following the conclusion of the original all reasonable steps obligation. These included the do-nothing option (i.e., the New and Replacement Obligation); and two policy options based on targets, including our preferred option as presented in the current IA; a four-year framework with annual targets subject to tolerance levels.

[6] This Impact Assessment provides sufficient detail of this framework to enable understanding of the analysis that has been conducted. For full details of the framework, the rationale behind its development, and the implementation plan, please consult the main Government Response document and annexes.
[7] https://www.gov.uk/government/consultations/smart-meter-policy-framework-post-2020

12. As set out in paragraph 5, we do not believe that the NRO alone will be able to deliver market-wide smart meter penetration within the timescales required to achieve an effective transition to a smart energy system and meet the Government's net zero ambitions. Similarly, whilst the current ARS obligation has helped lay the foundations to build a national smart infrastructure, it is important that the Programme's ambition is such that it maintains momentum towards delivering market-wide rollout. By the start of the new framework, we expect that the maturity of the technology available to be such that the regulatory flexibility provided by ARS will no longer be required. Due to the flexibility of ARS, we consider that the option of extending it indefinitely would not be certain to deliver significant numbers of smart meter installations across all suppliers above those required under the NRO. This would lead to a risk of market-wide smart meter coverage failing to be delivered. For these reasons, this Impact Assessment has not separately assessed the impact of this option.

13. In choosing to calculate annual targets under the preferred option, we have considered and implemented suggestions made in responses to our consultations and other stakeholder engagement. This includes the fundamental basis for our model, and the key drivers for the smart meter rollout (as reflected in our projections) which are consumer acceptance, operational fulfilment, and operational capacity. Based on these drivers, we have then used the most appropriate data available to project smart rollout and calculate tolerance levels (see Annex D for more details on this.) Given the robustness of the data available and evidence provided throughout the policy-making process, this is our preferred and chosen method for calculating annual targets.

Status quo counterfactual scenario

14. In this Impact Assessment, we compare the policy framework against the status quo counterfactual scenario. This is the scenario that we expect to prevail if no additional regulation is implemented. Under the status quo, the only obligation that would apply to energy suppliers' installation of smart meters from 1 July 2021 is the NRO. This requires that energy suppliers must (subject to all reasonable steps) install smart meters in all new metering points and where meters require replacement. The status quo counterfactual scenario thus assumes that only these installations take place post June 2021[8], resulting in a substantially lower level of smart meter coverage.

Policy framework

15. Our policy option is to:

    i. **specify targets for the number of smart meter installations that each energy supplier will be required to make in each year** for the first two years of the new four-year regulatory framework from 1 January 2022 to 31 December 2023. These targets will be based on the linear profile, from each energy supplier's known percentage coverage at the end of December 2021 (or the end of December in each subsequent year), to the end of the framework period at the end of December 2025 (and towards market-wide coverage).

    ii. **set tolerance levels for delivery of these targets** such that energy suppliers would have to meet these installation targets within a tolerance allowance, which would ensure that suitably high coverage levels are achieved while also accounting for challenges which might limit energy suppliers' ability to deliver the required smart meter coverage.

    iii. **extend the "All Reasonable Steps" policy framework** an additional six-months (ending December 2021 rather than June 2021) to allow suppliers to appropriately plan for the new

[8] Whilst the technology had been available for several years prior to Government intervention, very few smart meters had been rolled out to domestic customers prior to the announcement of the existing mandate. Furthermore, in a deregulated and competitive supply market such as Great Britain, there is reduced commercial incentive for energy suppliers to voluntarily install smart meters due to the high risk of losing a major part of their value if consumers switch to a different energy supplier. Any smart meter installations taking place above those required under the NRO would therefore be expected to be in small numbers only and these would be highly uncertain. For simplicity, therefore, we do not attempt to estimate these numbers.

regulatory framework, particularly after the uncertainty created by the COVID pandemic and the nationwide restrictions affecting installations in homes and small businesses.

16. The new regulatory framework is not different from the existing 'All Reasonable Steps' obligation insofar as energy suppliers will be subject to the same rights and obligations, defined under the Smart Energy Code (SEC)[9]. The Smart Metering Programme has put in place measures designed to ensure that consumers' interests are fully protected. These measures include a Smart Meter Installation Code of Practice (SMICOP)[10] covering the necessary steps required before, during and after smart meter installations; and a Data Access and Privacy Framework[11], which sets out the purposes for which energy consumption data can be collected and the choices that consumers have about access to their data. These provisions will continue under our proposed new framework.

17. We consider a straight-line trajectory to market-wide rollout a reasonable approach to setting targets but recognise the potential for future delivery challenges to affect that outcome. In our projections we have made prudent assumptions about the rate meters could be rolled out to reflect any barriers to deployment. We have therefore used these projections to set a reasonable floor for installations that we consider justifiable (whilst also including a calibration mechanism should consumer demand exceed operational capacity). However, we have good reason to believe that the market would exceed this minimum projected rollout (for instance because of increased technical eligibility, improved supplier operational performance and improvements in customer attitudes beyond those assumed in our modelling[12]). Indeed, it may even be in suppliers' interest to aim for full market coverage ahead of the conclusion of the framework. Suppliers (as well as consumers) accrue a sizable benefit from having more smart meters installed and it is conceivable that being further along in the rollout, sooner, would confer a competitive advantage upon a supplier.

18. Following an analysis of the responses to our November 2020 consultation and a further review of our evidence base, some adjustments have been made to the methodology for calculating our projected smart coverage. Some of these are minor, technical adjustments, which are covered in detail within the technical annex (Annex D). However, it is worth noting a more extensive change that has been made.

19. We have made the decision to separate the calculation of the smart meter projections for domestic and non-domestic metering points. In doing this, we have used domestic-specific data to project domestic smart meter rollout (and thus tolerances), and we have used non-domestic specific data to project non-domestic smart meter rollout. This results in different tolerance levels for domestic and non-domestic suppliers and ensures that the most relevant data is used to calculate supplier tolerance levels.

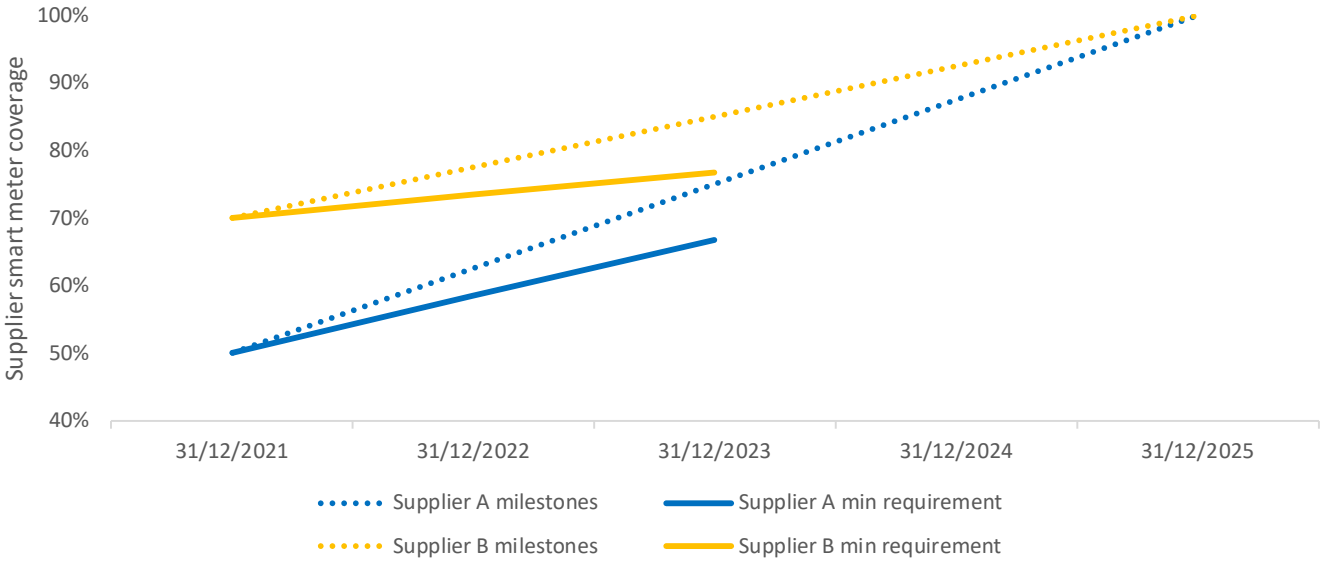
20. The tolerances have been calculated based on the difference between the straight-line trajectory to 100% at the end of December 2025 and the trajectory defined by the central scenario from a calculated starting point on 1 January 2022 (when the new policy framework commences). Under the new framework, the straight line to 100% is redrawn at the end of the first year (assuming the projected value in the central scenario is achieved in the first year) and the difference to the central scenario is used to recalculate the tolerance for the second year. Based on this, the resulting tolerances proposed for domestic suppliers are 3.5% in the first year and 5.1% in the second year[13]. The corresponding figures for non-domestic suppliers are 6.1% in the first year and 8.3% in the second year. This approach is illustrated for two hypothetical energy suppliers in Graph 1 below. Further details on how these tolerances were calculated are included in Annex D of this document.

[9] https://smartenergycodecompany.co.uk/
[10] https://www.smicop.co.uk/
[11] https://www.gov.uk/government/publications/smart-metering-implementation-Programme-review-of-the-data-access-and-privacy-framework
[12] More information on our modelling assumptions can be found in Annex 2 of this document.
[13] In practice, the targets will be reassessed at the start of each year to account for meters gained and lost on churn. Each reassessment will be based on the same principle as illustrated in Graph 1 – namely targets will be set based on the linear coverage profiles required towards market-wide coverage by the end of June 2025 with a specific tolerance allowance, which we have defined for the first two years.

21. The choice of a four-year monitoring framework period was confirmed in the June 2020 government response[14] based on a combination of factors, including (i) the level and timeliness of smart meter coverage needed to support a smart energy system and contribute towards the Government's net zero objective, (ii) an analysis of energy suppliers' existing installation rates and (iii) the impact that a variety of factors might be expected to have on these installation rates going forward.

22. To ensure that targets continue to be proportionate and appropriate to drive a market-wide rollout, the June 2020 Government response confirmed that we will undertake a mid-point review during Y2 of the framework. We expect that the targets and tolerance values for the third and fourth years of the framework period (i.e., starting 1 January 2024 and 1 January 2025 respectively) will be consulted upon during the second year of the framework (2023). This approach enables consideration of the impact of ongoing improvements in operational fulfilment and technical eligibility, whilst also taking into account any new policy incentives introduced to support consumer engagement and the most up to date data available at the time (the potential impact of policy incentives is not directly considered in this forecast).

Graph 1: Illustration of bespoke targets and minimum requirements for each energy supplier – the minimum requirements for the final two years are not shown as they will be decided following the review during the second year of the framework (2023).



23. Because only the targets and tolerance allowances for the first two years of the framework (i.e., starting 1 January 2022 and 1 January 2023) will be implemented into the regulatory requirements on energy suppliers at this stage, this Impact Assessment considers only the impact that these two years of new regulation would be expected to deliver. A new Impact Assessment will be produced on the proposals for the third and fourth years (i.e., starting 1 January 2024 and 1 January 2025) as part of the planned review process and subsequent consultation.

24. The key variables that determine the annual minimum installation requirements for each supplier will be their coverage levels on 31 December 2021 (establishing their specific starting point for the four-year trajectory), the tolerance level allowed for that year and, for subsequent years of the framework, the number of customers the energy supplier has without smart meters at the end of the previous rollout year. We recognise that the smart meter coverage level of individual energy suppliers is influenced by consumers that have had a smart meter installation choosing to switch to a different energy supplier. The methodology proposed in the consultation to calculate annual targets focusses on the installation of smart meters, as opposed to levels of smart coverage in year. In this way, suppliers do not have the option to meet their obligations in year 1 through

[14] https://www.gov.uk/government/consultations/smart-meter-policy-framework-post-2020

consumer churn[15] only. However, in the proposed methodology, smart churn in year 1 does impact upon the calculation of targets for year 2.

25. After considering the evidence on the impact of churn on rollout installation requirements of the framework, as provided by some respondents to the November 2020 consultation, we recognise that churn could be an issue for some suppliers during the first two years of the framework where the individual smart penetration levels are significantly above the market average penetration.

26. As the current methodology for annual target calculations does not adjust for positive or negative churn, this may result in unfair penalisation of energy suppliers who are investing in the rollout infrastructure whilst rewarding other suppliers who meet their targets by increasing their smart customer base through churn. On this basis, we are minded to consult on potential options for adjusting the calculation of Y2 targets to neutralise, as far as possible, the effect of churn through "positive smart churn" (when more smart meters are **gained** than lost through churn) or through "negative smart churn" (when more smart meters are **lost** than gained through churn). Any adjustments to account for churn in target calculations will not have an impact on the overall smart penetration projections (churn simply transfers costs and benefits between suppliers) and so does not have an impact on this assessment.

Cost-benefit analysis

27. In order to estimate the costs and benefits of the policy framework, we have produced projections of the levels of smart meter coverage expected under the framework (plus the initial six-month ARS extension) and in the absence of any additional regulation (the NRO counterfactual). To evaluate the impact that these differences in rollout rate would have on the overall costs and benefits of smart metering, we then use the methodology and values for quantifying costs and benefits from the 2019 Smart Metering Cost-Benefit Analysis[16]. This is the most comprehensive view on the cost and benefits of smart meters so gives us the best view of the impact of this policy.

28. All costs and benefits included in the assessment for this policy framework are calculated by adjusting the rollout as described in this document and running these rollout projections through the cost-benefit analysis model. In the interests of proportionality and clarity, and given that a comprehensive view on the particulars of costs and benefits are described in the publicly available cost benefit analysis document, we have avoided repeating sections ad verbatim in this assessment to maintain focus on the proposed policy. Attempts have been made throughout this document to reference to the relevant parts of the 2019 Smart Metering Cost Benefit Analysis where necessary.

Calculation methodology

29. Full details of the modelling approach are explained in Annex D; however, an overview of the modelling is explained below. Figure 1 illustrates how the projection works, where:

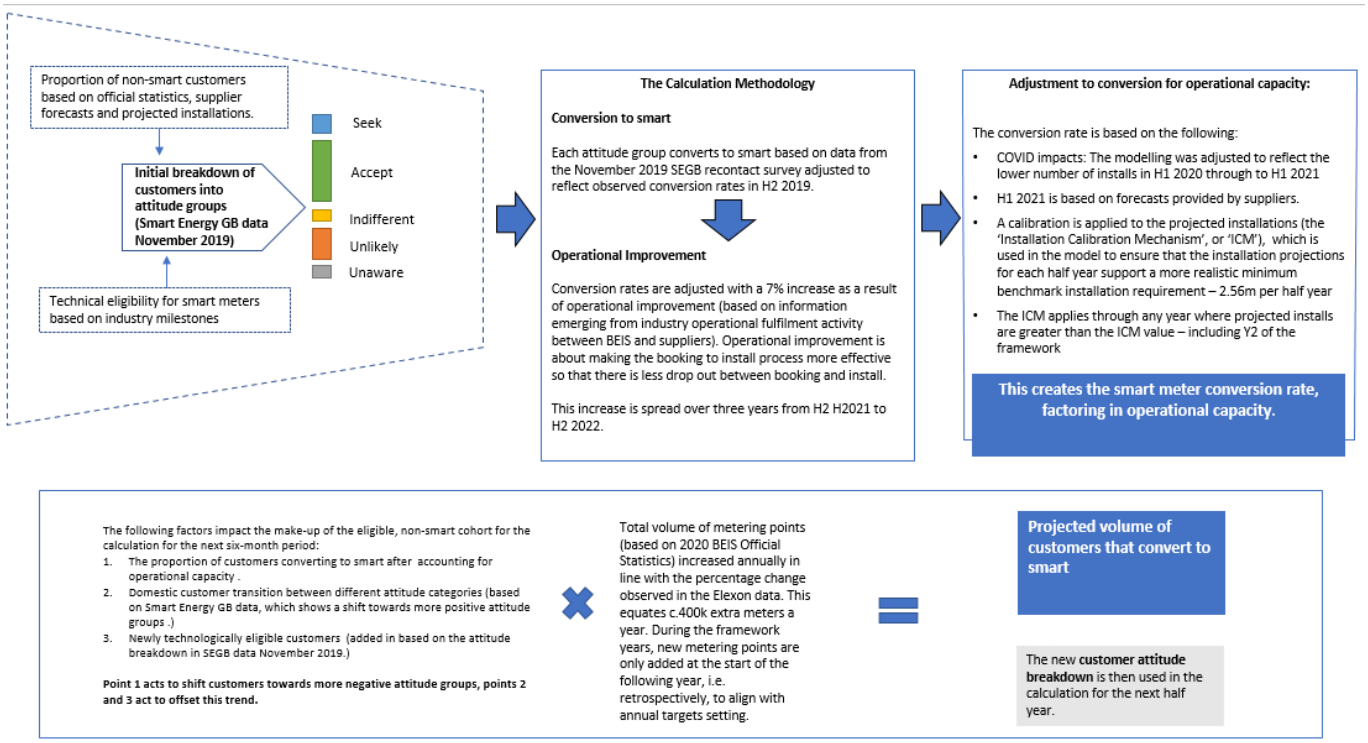
    i. The key variables that determine the feasible rollout are the proportion of non-smart customers in each of the attitude groups and their corresponding eligible-to-smart conversion rate (operational fulfilment). These are both based on Smart Energy GB (the organisation responsible for the national smart meter consumer campaign)[17] data. These are combined to determine the demand for smart meter installations based on current and future fulfilment rates in each half-year.

[15] "consumer churn" arises from consumer switching energy suppliers.
[16] This is a fully quality assured analysis of the rollout's costs and benefits, which was published in September 2019. It can be found at https://www.gov.uk/government/publications/smart-meter-roll-out-cost-benefit-analysis-2019.
[17] https://www.smartenergygb.org/en

ii. Operational capacity adjustments are applied as a calibrating mechanism to the installation number generated by our projection of consumers having a smart meter installed. This Installation Calibration Mechanism (ICM) applies only in situations where the consumer conversion model projects meter installations at a rate above levels that the market has demonstrated it can successfully complete currently and historically. Annex D gives more detail on how the ICM is calculated and the evidence used to validate the outcome of these calculations. The ICM should not be viewed as a restriction on energy suppliers who are able to install above their minimum installation target if their operational capacity allows them to do so.

iii. Technical eligibility is based on current plans agreed between Government and Industry, where the vast majority of technical issues should be resolved by December 2021. In their responses to the consultation, suppliers highlighted the availability of dual-band communications hubs as a practical barrier to increasing technical eligibility. We acknowledge that there have been some issues with the availability of this technological solution and so have adjusted our eligibility series accordingly to reflect the delay in market wide availability of the technical solution. As more consumers become technically eligible to convert to smart, they are added to the customer attitudes of the eligible non-smart population, thus increasing aggregate consumer demand.

Figure 1: Diagram of the modelling approach (at an aggregated level)



Central scenario

30. The previous sections detail our modelling approach and how this is used to generate a rollout projection. However, it is dependent on how we assume consumer acceptance and operational fulfilment will evolve during the framework period. In order to give a robust assessment of the potential cost/benefit impact of the policy framework, we consider a central set of assumptions (which are then varied in our sensitivity analysis.)

31. Government has worked closely with industry to support remobilisation following the disruption caused by the COVID-19 pandemic to share good practice on operational and consumer engagement activities and drive timely and efficient ramp-up of smart meter installations, in line with COVID-19 safe working guidance. This remobilisation work carried out during spring/summer last year suggested that energy suppliers were able to return to previous installation levels (or even higher) 2-3 months after lockdown restrictions, which banned non-essential installations in homes and businesses, were lifted. Although our forecasting model does not directly account for COVID impacts as part of the assumptions, these impacts are implicit in the calculation of the starting point, the calculation of the ICM (Installation Calibration Mechanism)[18] and the "switching off" of the attitude boost assumptions prior to the start of the framework (this ensures that consumer attitudes remain stable, rather than improving, which would seem unlikely during the COVID-19 pandemic.)

32. As a central modelling case, we assume that the attitudes of any non-smart consumers become progressively worse as those accepting a smart meter are more likely to have positive attitudes and are thus removed from the pool. However, observations from the Smart Energy GB recontact survey also suggests that customers move between attitude groups (getting more positive attitudes on average), which offsets some of the reductions in the positive attitude groups (note that this offset is only observable, given data availability, for domestic consumers and so we have made the prudent decision to not include this attitude offset when projecting for the non-domestic rollout.) We do not believe installations will become disproportionately harder over the two years modelled in this Impact Assessment as over this period there will be increasing smart meter eligibility and improved supplier performance[19]. In addition, customer attitudes may improve as the number of households and other premises with smart meters continues to increase and they become seen as the default meter with negative media becoming less prevalent as technical issues are resolved.

33. The latest pre-COVID data on domestic consumer attitudes from November 2019 indicates that there has been a significant shift towards the more positive attitude groups of 'seek' and 'accept' from 'indifferent' and 'unlikely' (these categories are defined in Annex 2 of this document). However, we have used a prudent assumption by taking an average of this value with three previous values (the changes observed between Nov 2017 and May 2018, between May 2018 and Nov 2018 and the change between Nov 2018 and May 2019).

34. In the central scenario, we have applied an ICM based on a rate that the market has demonstrated it can deliver historically (2.56m for the market as a whole for each 6-month period.)

35. Based on the modelling set out in these consultation proposals, the ICM applies from H2 2022 to H1 2023 for the domestic rollout and from H2 2022 to H2 2023 for the non-domestic rollout as the model projects that consumer demand is maintained above the level of the ICM

[18] The data used to calculate the ICM is from October and September 2020, when supplier operations were inherently influenced by the pandemic.
[19] This is based on assumed improvements in supplier operational performance as reported to BEIS by energy suppliers in bilateral meetings

in these periods. In the first half year of the framework, the ICM is non-binding as projected installs are below the level of the ICM. This is in line with updates made following the November 2020 consultation and is reflective of the adjustment to our technical eligibility series discussed in paragraph 29c of this document.

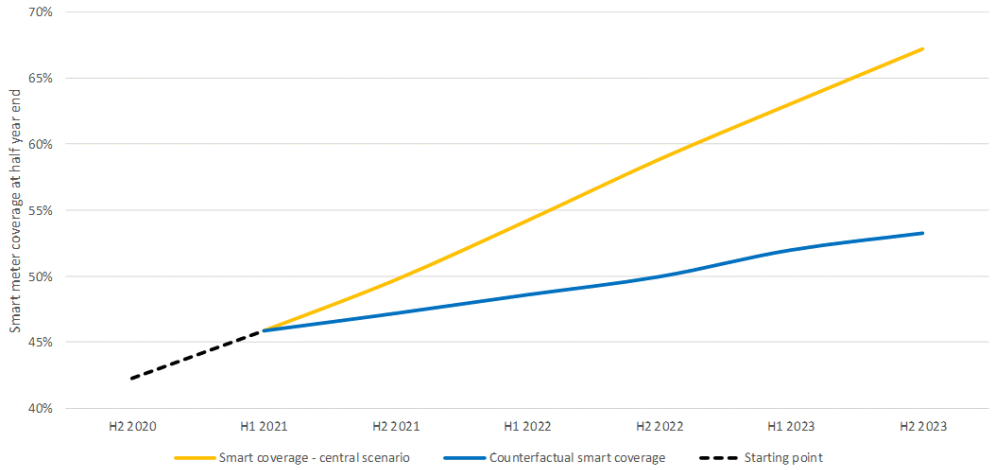
Status quo counterfactual scenario

36. Installations under the NRO (the status quo) from 1 January 2022 are forecast as follows:
    - The number of new metering points is projected based on household growth forecasts, consistent with the approach taken in the 2019 Smart Metering Cost-Benefit Analysis[20]. It is assumed that these will all receive a smart installation.
    - Traditional meters are assumed to require replacement around every 20 years for credit meters and every 10 years for prepayment meters, meaning that each year around 6% of each energy supplier's remaining non-smart metering points will receive a smart meter. This is also consistent with the approach taken in the 2019 Smart Metering Cost-Benefit Analysis[21].

Comparison of scenario rollout forecasts

37. Graph 2 (below) shows the projected smart coverage under both scenarios. Specifically, it shows that the policy scenario helps to maintain the rollout's momentum post June 2021[22], whereas in the status quo counterfactual this momentum would be lost, and installation rates would be substantially reduced. By the end of December 2023, smart meter coverage under the main policy scenario is expected to be 14 percentage points higher than under the status quo counterfactual. As noted above, the targets and tolerances for the third and fourth years of the framework period will be confirmed following the outcome of a review during the second year of the framework (1 January 2023 – 31 December 2023). We have however undertaken an indicative projection across the appraisal period (from December 2023 to 2034) to show the overall NPV impact if the NRO counterfactual were to apply after June 2023. This shows that the gap between coverage levels begins to narrow, although the counterfactual scenario remains 5.6 percentage points lower at the end of the appraisal period.

Graph 2: Aggregate smart meter coverage in policy scenario vs counterfactual



[20] Page 15 of the 2019 Smart Meter Cost Benefit Analysis
[21] Page 17 of the 2019 Smart Meter Cost Benefit Analysis
[22] Note that the extension of ARS for the period from 1 July - 31 December 2021 is accounted for given it delivers more smart meters than the NRO counterfactual.

38. As described above, we now evaluate the impact of the different rollout profiles on the overall costs and benefits of smart metering using the methodology and values for quantifying costs and benefits from the 2019 Smart Metering Cost-Benefit Analysis. This considers the following costs and benefits:

Costs	Benefits
• Metering asset costs • Installation costs • Operation and maintenance costs • Costs associated with the Data Communications Company (DCC) • Costs incurred by energy suppliers and the wider industry (capex and opex) • Energy costs • Other costs (including for disposal of old meters and marketing)	• Energy savings for consumers[23] • Time savings for consumers • Avoided site visits • Reduced customer service enquiries • Improved debt handling (including more accurate billing) • Reduced cost to serve prepayment customers • Customer switching benefits • Remote outage detection • Use of data to inform network reinforcement and improved network management • Reduced theft and losses • Benefits from time-of-use tariffs • Carbon and air quality benefits

39. These costs and benefits were all calculated based on a range of evidence, including data provided by energy suppliers, international comparisons, and research commissioned by the Programme[24]. They represent a robust understanding of both the fixed costs of delivering the smart meter rollout and the incremental costs and benefits that are accrued once each smart meter is installed (whilst also differentiating between the costs and benefits accrued to domestic and non-domestic premises). The present analysis determines the difference in the net present value (total benefits minus total costs) that arises within the model used for the 2019 Smart Metering Cost-Benefit Analysis when the rollout of smart meters follows the central policy scenario profile compared to the counterfactual scenario (both shown in Graph 2 above.) These differences are appraised over the period from 2013 to 2034[25] using a 2021 present value base year and 2020 prices[26].Since the policy option would be implemented in 2021 (and installation levels are the same in all years prior to this across all scenarios considered), this corresponds to fourteen appraisal years (2021-34). In line with the 2019 Cost-Benefit Analysis and HMT Green Book guidance, we have used a fourteen-year appraisal period in order to appraise the costs and benefits of the policy option on one full cycle of smart meter installations.

[23] There is a substantial evidence base demonstrating that feedback enabled by smart metering leads, on average, to a reduction in energy demand. A series of large-scale international studies have reviewed these and consistently found that feedback – and particularly real-time feedback – can result in significant reductions in energy consumption. The most relevant and important sources are studies in the GB context. This includes the 2011 Energy Demand Research Project (EDRP and Early Learning Project (ELP). BEIS has also collected and reviewed evidence from energy suppliers, finding that consumption reductions are being achieved and sustained in line with the programme's original expectations (2.8% in electricity for credit and prepay customers, 2.0% in gas for credit customers and 0.5% in gas for prepay customers) or higher (3.5% for electricity and 2.6% for gas credit) amongst customers of suppliers with more mature and sophisticated consumer engagement approaches. For more information on how this translates to the energy saving figures presented here, see page 35 of the 2019 Smart Metering CBA.

[24] Further details are available in the 2019 Smart Meter Cost Benefit Analysis https://www.gov.uk/government/publications/smart-meter-roll-out-cost-benefit-analysis-2019.

[25] Consistent with the 2019 CBA appraisal period

[26] The Impact Assessment summary sheets and business impact test use different PV and price base years to be consistent with the impact assessment guidance.

40. Comparing the overall Programme net present value under the central forecast for the policy scenario described above against the status quo counterfactual scenario[27] yields the following result:

Table 1: The central scenario net benefit compared to the status quo counterfactual (2020 prices, 2021 PV base year)

Scenario	Net benefit compared with status quo counterfactual
Policy scenario – central case	£1,306m

41. From these results, we can see that under the central scenario the policy framework is expected to deliver a net benefit to Great Britain of £1.3bn over the appraisal period to 2034. This benefit is due to the higher number of smart meters that will be installed compared to the counterfactual, driving consumer energy and time savings, energy supplier operational efficiencies, and wider environmental benefits. It assumes that energy suppliers deliver rollout rates in line with our central forecast between 1 July 2021[28] and 31 December 2023 and makes no assumptions about the scheduled review to introduce the proposed targets and tolerance levels for the third and fourth years of the framework (1 January 2024 to 31 December 2025).

42. Table 2 below shows that the vast majority of costs relate to the installation[29] of new metering equipment (approximately 80% for the installation process and the new assets). Around one third of benefits are energy savings that smart meters enable consumers (domestic and non-domestic) to realise, while consumers will also realise a smaller benefit due to time savings. Most of the remaining benefit is to energy suppliers, largely through efficiency savings that greater numbers of smart meters will enable them to make. The environmental benefits include an emissions reduction equivalent to 4.5m tonnes of CO_2.

43. There are further benefits, not quantified here, that the rollout of smart meters will help to deliver. For example, we anticipate the rollout of smart meters will allow benefits to the wider energy system resulting from shifting demand away from peak times when cheap, low-cost generation is possible. Additional efforts, including Ofgem's half-hourly settlement programme, are required to fully realise this benefit. However, by rolling out smart meters more quickly, it logically follows that benefits relating to demand shifting will be realised sooner.[30]

[27] The counterfactual has a net benefit, but these scenarios deliver benefits above and beyond the counterfactual.
[28] Note that the extension of ARS for the period from 1 July - 31 December 2021 is accounted for given it delivers more smart meters than the NRO counterfactual.
[29] This includes factors such as the costs of training installers, providing tools, managing installers in the field, appointment setting, insurance, legal, van and other back-office support costs. For more information, see the Smart meter roll-out: cost-benefit analysis 2019 pages 19-21
[30] The approach taken to demand shifting can be viewed in more detail on pages 50-52 of the 2019 Smart metering CBA

Table 2: A breakdown of the costs and benefits that are expected in the central case.

Costs (£m)		Benefits (£m)	
In-premise costs		*Consumer Benefits*	
Installation of meters	549	Energy savings	1,006
Meter assets	652	Time savings	200
Operation and maintenance	103	*Energy supplier benefits*	
Other costs		Avoided site visits	360
Supplier IT costs	21	Reduced customer calls	193
Device energy consumption	93	Reduced prepayment cost-to-serve	150
Pavement reading inefficiency	30	Customer switching	220
Disposal costs	1	Remote change of tariff	27
		Debt handling	172
		Reduced theft and losses	41
		Other benefits	
		Network benefits	36
		Environmental benefits	350

Sensitivity analysis

44. As explained above, the analysis presented is based on energy suppliers delivering the installations required to reach a starting point of 49.2% smart coverage at the end of December 2021. If this starting point is not reached then smart coverage levels throughout the framework period, in both the policy and counterfactual scenarios, are lower. This leads to the following central NPV impact estimate:

Table 3: Sensitivity analysis on the installations in the first half of 2021

Reduction in installations during H2 2021	Net benefit compared with status quo counterfactual (central scenario)
12.5%	£1,272m
25%	£1,235m

45. We see from this analysis that even with a quarter fewer installation than expected during H1 2021 the policy framework is still expected to deliver a net benefit to society.

Lower installation rate scenario

46. We have also considered a purely illustrative scenario in which energy suppliers install 80% of the meters compared to the central scenario. This scenario has been used to demonstrate the impact of lower installations on the overall NPV. In this scenario, fewer customers would be able to realise the benefits of smart metering, which reduces the NPV of the overall policy. We do not consider this scenario to be a likely one – compliance with the policy framework means that the installation rate contained within the central scenario is the **minimum rate** that installers can install at whilst complying with the regulatory framework.

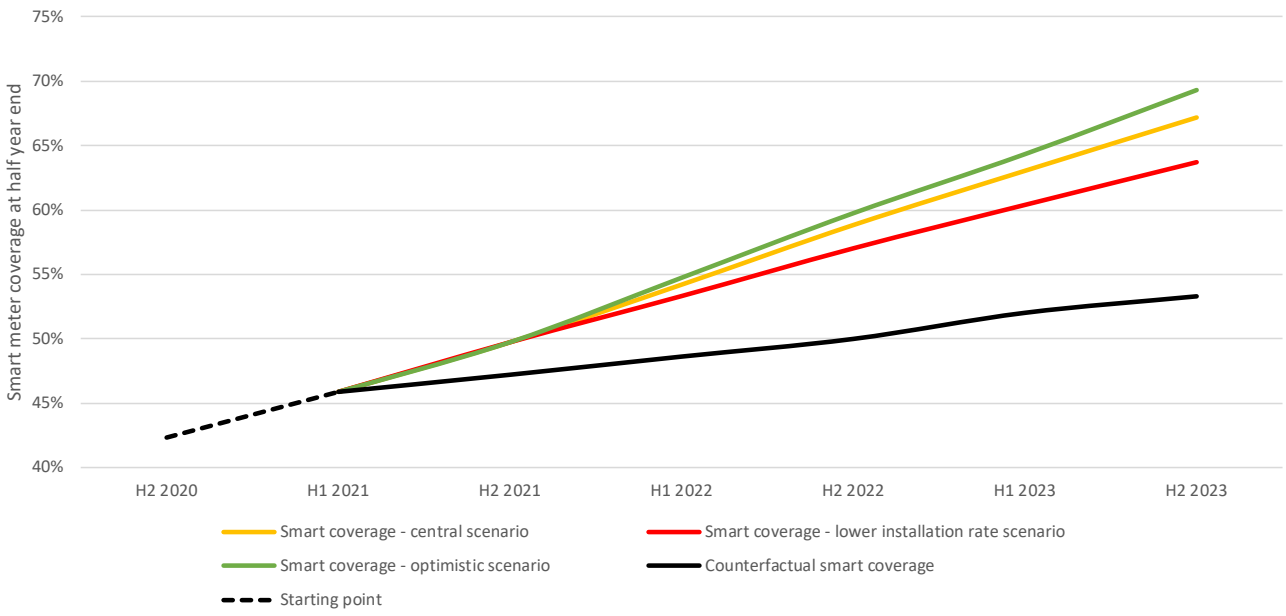
Optimistic case

47. The central scenario described above assesses the impact if energy suppliers are incentivised to continue rolling out smart meters without substantial operational or consumer attitude improvements. We also consider an optimistic scenario in which further operational and consumer attitude improvements do occur.

48. Our optimistic scenario assumes the shift towards the more positive attitudes for domestic consumers is in line with the latest observed value in November 2019 (which is where the largest shift to positive attitudes was observed). Additionally, a further two adjustments have been made. Firstly, the aggregate ICM has been increased so it is based on the average installation rate between 2017 and 2019, which equates to 2.77m installations per half year rather than 2.56m in the central case. Secondly, our technical eligibility series is adjusted such that current issues around availability of technological solutions are resolved as quickly as is reasonably possible.

49. The forecast overall smart meter coverage levels under these two scenarios considered (and the central scenario) are shown on the following graph:

Graph 3: Aggregate smart meter coverage under the three scenarios considered.



50. These projections can also form natural upper and lower net benefit estimates. These give the following net benefit ranges:

Table 4: The "lower installation rate" and "optimistic" scenarios net benefit compared to the status quo counterfactual

Scenario	Net benefit compared with status quo counterfactual
Policy scenario – lower installation rate case	£1,008m
Policy scenario – optimistic case	£1,464m

51. If market evolution is in fact sufficient for energy suppliers to deliver our most optimistic forecasts between 1 January 2022 and 31 December 2023, then a further £0.2bn of net benefit could be realised. By contrast if 80% of the installations projected under the central scenario are delivered across the market the lower installation rate could reduce the net benefit by £0.3bn. Nonetheless, the policy option would still provide a strong net benefit of £1,008m relative to the status quo counterfactual.

52. More broadly, a view has been taken on what factors could realistically affect rollout projections. The key drivers of the modelling projections and their potential to affect rollout are as follows:

- Smart coverage starting point: Actual data from Official Statistics[31] has been used up to the end of 2020. For H1 2021, adjusted (down) supplier forecasts have been used to project installs. This projection has been compared and verified using data points from the DCC and bilateral meetings and suitably accounts for the impact of COVID-19 on H1 2021 installs. For H2 2021 we have made a cautious estimate of actual installs by looking at the current weekly level of installations and prudently projecting this forward. We expect any changes in the starting point as a result of updated data on installation numbers will not be significant and therefore the risk of affecting the modelling outcome is low.

- Consumer attitudes: There is no evidence that underlying consumer attitudes have changed as a result of COVID-19[32] and the data available suggests that the direction of change amongst those without smart meters is towards improving consumer attitudes. As rollout continues and smart meters are increasingly seen as the default meter type, we would expect attitudes towards smart to normalise. There is a low risk that changes in consumer attitudes will significantly affect projected smart coverage.

- Operational fulfilment: Evidence from the Smart Metering Implementation Programme's benchmarking work with large energy suppliers (which is shared in anonymised form with participating energy suppliers) indicates that there are currently several areas in which energy suppliers could deliver improvements to operational fulfilment (for instance through adoption of industry best practice) in addition to improvements demonstrated by some energy suppliers to date. Such improvements would be expected to translate into increases in conversion rates from the same volume of appointments and so we have applied a realistic uplift[33] to conversion rates which reflects these expected improvements. In our central scenario, we have also used a technical eligibility series that assumes (following consultation responses) a more prudent (and more negative) evolution of technical eligibility than used prior to consultation – a more pessimistic scenario than this doesn't appear to be credible. We therefore do not anticipate changes to technical eligibility that would have a significant, negative impact on rollout. There is a low risk of this affecting projected smart coverage.

[31] https://www.gov.uk/government/statistics/smart-meters-in-great-britain-quarterly-update-december-2020
[32] SEGB weekly tracker; SEGB six monthly outlook; and SEGB annual microbusiness tracker
[33] This operation improvement uplift is based on information provided by large energy suppliers during bilateral meetings with the Programme relating to the average improvements in operational fulfilment they expect to achieve, in addition to improvements demonstrated by some energy suppliers to date.

- Operational capacity: A key constraint on energy suppliers' abilities to operationally deliver on their obligations is the number of installers available. No constraint on installer numbers has been assumed in the modelling, following feedback received from energy suppliers in response to our September 2019 consultation. Several consultation responses indicated that energy suppliers themselves do not directly consider installer resource within their internal rollout forecasts, but instead perform an ex-post analysis to validate that their forecasted rollout rates are deliverable under scheduled resource constraints. Additionally, some energy suppliers have reported that the attrition rate risk of installers has been reduced due to the current wider economic position. Correspondingly, the risk of operational capacity impacting projected smart coverage is low.

Direct costs and benefits to business

53. The costs of the smart meter rollout are incurred predominantly by energy suppliers. In turn, the benefits delivered are split between consumers and the energy industry. To determine the direct costs and benefits to business, we consider only those costs and benefits that accrue to energy suppliers and other businesses that operate within the energy industry. Inputting these into the BIT methodology (using the BIT spreadsheet) gives the following estimates:

Cost of Option (£m) (2019 prices, 2020 present value)			
Total Net Present Social Value	**Business Net Present Value**	**Net direct cost to business per year**	**BIT Score**
1,193	309	49	244

54. These calculations are based on the fourteen remaining years of the 2013-34 appraisal period after the policy options are scheduled to take effect (i.e., 2021 to 2034). A large portion of the business net present value is made up of the energy savings that non-domestic energy customers are able to realise with smart meters. These are treated as indirect benefits to the business, since they require consumer action in order to be realised, and thus are excluded from the net direct cost and BIT score calculations above. Note that, in line with BIT methodology, 2019 prices and 2020 present values are used, so these numbers are not comparable to those determined above for the policy framework's net present value.

Consideration of the impact on small and microbusinesses

55. Approximately 99% of businesses in the UK are small (10-49 employees) or micro-businesses (1-9 employees). In this section, we consider the potential impacts of this framework on these businesses.

56. The smart meter rollout includes within scope all non-domestic metering points within electricity profile classes 1 to 4 and with gas consumption below 732MWh per annum. This covers the vast majority of British business metering points and would be expected to include the vast majority of small and micro-businesses (as these are likely to be smaller energy consumers). Therefore, the policy framework considered within this analysis is expected to drive higher rollout of smart metering to small and micro-business premises. Under the policy scenarios set in Graph 2, we would expect around 8% more such businesses to have a smart meter by the end of December 2023 than would be the case without policy intervention. The 2019 Smart Metering Cost-Benefit Analysis showed that receiving a smart meter will enable these consumers to realise substantial benefits through energy savings (on average 2.8% savings on electricity bills and 4.5% for gas, subject to consumer action). The accelerated

rollout under the policy framework will allow these savings to be realised earlier, delivering higher benefits to those small and micro-business consumers who receive a smart meter earlier.

57. Smart metering includes a range of efficiency savings that can be accessed by energy suppliers, which will reduce their costs and ultimately lead to lower energy bills. Therefore, energy bill reductions are expected to be realised across the market, leading to benefits for all small and micro-business consumers, even if they do not yet have a smart meter.

58. The minimum installation requirements are intended to apply to all energy suppliers within the market. While the vast majority of consumers are served by medium or large businesses[34], the market does include some energy suppliers who are either small or micro in size. This is particularly likely for new entrants to the energy market. Such suppliers are already required, under their licence conditions, to put in place the systems needed to operate smart meters through the DCC and to have contracts in place to service or replace their customers' meters if needed, and to take all-reasonable steps to install a smart meter. Therefore, the requirements imposed by this framework are not substantially different in character from the obligations that already apply to them. We did consider the option of exempting such energy suppliers from these regulations, however, we determined that this would adversely affect the balance of the market by allowing these energy suppliers to operate with lower capital costs and thus give them a potential competitive advantage over those suppliers to whom the framework would apply. Additionally, it is important to set regulations across the market and for consumers to expect to receive the same level of service regardless of energy supplier.

59. Having consulted numerous policy officials and analysts in both BEIS and Ofgem, we have been unable to source data that distinguishes energy suppliers by their number of employees. Given the absence of data on the number of employees by energy supplier businesses, it has not been possible to undertake an assessment of the effect of this policy on small and micro businesses using the most typical definition of small and micro businesses (which are those with between 11-50 employees and 10 or fewer employees, respectively.) Indeed, given the complexity of energy suppliers' operations and business structures, an employment-based definition may not have given an accurate representation of whether an energy supplier is a small or micro business – it is common practice in the energy supply industry to have a third-party business manage a large proportion of the business operations (including back-office functions and installations), which would likely skew the findings of any such assessment.

60. Instead, we have used an annual turnover based approach where a small business is defined as one with an annual turnover less than £6.5m[35] and a micro business is defined as one with an annual turnover less than £632k.[36] We have then estimated annual turnover by combining supplier data (held by BEIS) on the number of meters they operate (as of 31 December 2020) with the average bill value per fuel type[37]. These results have then been compared with information from Companies House to determine which energy suppliers are small and micro businesses, as measured by annual turnover. From this, we estimate that out of a total of 84 retail energy suppliers, 16 are small and micro businesses. Of these 16, our estimates suggest only one of these energy suppliers belongs to the "micro business" category (though given the estimated nature of this assessment and the use of average data, this supplier could feasibly be a small business.) Furthermore, there is likely to be little

[34] Around 90% of the domestic and 70% of the non-domestic market are served by the companies with over 250k customers. These companies are all large businesses with sizeable workforces. The companies that serve the remainder of the market will mostly have at least several thousand customers and will likely exceed the threshold defined above for a small business.
[35] This aligns with the turnover requirements specified in the Companies Act 2006
[36] Companies house includes a turnover less than £632,000 as one determinant of whether a business is a micro entity.
[37] For domestic meters, we have assumed an average bill per meter of £557 per annum and £707 per annum for gas and electricity, respectively. For non-domestic meters, we have assumed an average bill per meter of £2000 per annum for both gas and electricity. This is based on BEIS Annual energy bills statistics.

operational and business difference between an energy supplier that is a small or micro business.

61. Of the 16 energy suppliers identified as small/micro businesses, smart coverage by supplier ranges from 0-100%. Of these energy suppliers, 11 are behind on the smart rollout (i.e., their smart meter coverage is lower than the market average, as of 31 December 2020.) However, being behind in the rollout does not mean that compliance with this policy will impose a disproportionate cost burden on small businesses. The market already offers a solution to ensure that the smart rollout is financeable for all suppliers regardless of their size and smart penetration. Financing arrangements between suppliers and meter asset providers are such that the cost of deployment is spread over the lifetime of a metering asset. This fact means that suppliers who are behind on their rollout (relative to the market average) will be paying less (on a per customer basis) as a proportion of the overall metering base until smart penetrations are aligned across the industry. In seeking to achieve market-wide coverage, this policy will work to equalise impacts across suppliers (whilst remaining in proportion to their number of meters and thus size.) Furthermore, implementation costs will be relatively lower on a per meter basis for these smaller business as they can use newer, lower-cost technology than was available for past installs. They will also benefit from rolling out at a point when the smart ecosystem has reached a more mature stage, with the majority of technical issues resolved as a result of industry collaboration (mostly funded by the larger suppliers.)

62. An additional challenge raised at the consultation stage was around the availability of metering assets and access to installation capacity under the tolerance-level framework. In particular, one respondent suggested it would make obtaining metering assets more difficult and more expensive (as an increase in demand drives up prices), which would have a disproportionate impact on smaller suppliers, who have less purchasing power than larger suppliers. Having assessed this possibility, we do not think this is a likely outcome or requires further mitigation. Firstly, the impact of this framework will, by and large, be to maintain installs at their current rate meaning that there is likely to be no significant increase in demand for metering assets (unless other market forces dictate this to be advantageous.) Secondly, metering assets are procured through MAPs (Meter Asset Providers) who have scaled buying power and so costs are not expected to increase. On installation capacity, our information from suppliers and 3rd party installers indicates that sufficient capacity to deliver the targets already exists within the market today, so large numbers of additional installers are not required to deliver this rollout.

63. It should also be noted that each energy supplier's targets, and minimum installation requirements will be set as proportions of its overall consumer base. We chose this approach to ensure that the task facing each supplier will be commensurate to its size. In absolute terms, therefore, these smaller energy suppliers will be required to install a smaller number of smart meters than larger energy suppliers by virtue of their smaller customer bases. While it could be argued that larger energy suppliers will have greater ability to secure meter availability and lower prices, in practice many smaller energy suppliers will contract installations out to third parties working across several energy suppliers, so will be able to benefit from similar economies of scale. Having considered the various points around impacts on small and micro businesses, we do not consider that any additional regulatory mitigation is required, although we shall continue to monitor new data as and when we receive it to ensure that this remains the case.

Wider impacts

64. Consumers are paying for the smart meter rollout through their gas and electricity bills. Without policy intervention, the rollout is likely to slow down considerably after the end of June 2021. This would mean that those consumers who had not received smart meters by this point would have to wait for a relatively longer period of time before they are able to access the benefits of smart metering. Thus, these consumers would be paying for smart

metering, but not receiving the benefits that it offers. Furthermore, these customers would be unable to access new market offerings that are enabled by smart meters (e.g., new tariffs that suppliers will be able to offer based on half-hourly energy usage data that can be provided by smart meters). The policy framework mitigates this by ensuring rollout momentum is maintained and enabling substantial progress over the four-year framework period.

65. We would not expect this policy to have any significant impact on trade and investment. Supporting the continued rollout of smart meters will contribute to the development of a smarter energy system, which may stimulate innovation and investment in future. Examples of this are already being seen, with some energy suppliers beginning to offer tariffs that offer consumers energy prices that vary with demand throughout the day, in order to incentivise demand-shifting. Furthermore, continuing to install smart meters to reach market-wide coverage in the mid-2020s will likely allow more consumers to have access to future smart energy tariffs, promoting effective competition within the energy market.

66. Smart meters provide consumers with more timely and detailed information about their energy usage. This allows consumer action leading to energy savings. Furthermore, wide penetration of smart meters has the potential to enable market wide uptake of demand-shifting, potentially smoothing energy demand peaks. Both effects will reduce greenhouse gas emissions, leading to carbon savings and consequent environmental and air quality benefits. These benefits have been assessed in detail on page 57 of the 2019 Smart Metering Cost-Benefit Analysis and are factored into the analysis considered above.

67. This regulatory framework should provide for accurate monitoring of the progress towards market-wide rollout. The programme currently collects data to monitor the progress of the rollout, both through regular meetings with suppliers and industry bodies and through statistical submissions. Under the new framework, while data collection will continue, suppliers will no longer have to submit projections to Ofgem so the burden of monitoring compliance should decrease.

68. The impact of smart metering on statutory equality duties is considered on pages 67-72 of the 2019 Smart Metering Cost-Benefit Analysis. Since the purpose of the policy considered is to ensure that the smart meter rollout is delivered to completion, the impacts studied in that document are also applicable here. We do not consider that any of the social impact tests available are relevant to this assessment given the rollout impacts everyone equally, so it does not have a specific negative impact on one particular group over another.

Reporting, monitoring and enforcement

69. The reporting, monitoring, compliance and enforcement of this policy are not within the Department's remit and will be a matter for the regulator, Ofgem, who have consulted separately on the reporting requirements of the new obligation.[38]

70. From a regulatory point-of-view, this policy framework is more straightforward than "all reasonable steps", so Ofgem has confirmed that it should not lead to any costs increases in respect of reporting, monitoring and enforcement activities. In terms of suppliers, the new reporting requirements will seek to collect information already collated by suppliers as part of the ARS obligation although it may differ in the presentation format. On that basis, the implementation of this policy does not impose any additional reporting burden for suppliers and therefore no additional reporting costs.

71. In parallel, the Programme will continue to monitor the progress of the smart meter rollout, including (but not limited to):

    a. Producing quarterly and annual statistical releases making transparent the progress of the rollout.
    b. Holding regular bilateral meetings with energy suppliers to identify issues, promote best-practice, and monitor developments within the industry.
    c. Working with specific business sectors to ensure that they are able to get the most out of smart metering.
    d. Reviewing the benefits being delivered by smart meters, as part of ongoing benefits realisation activity within the Smart Meter Implementation Programme.
    e. Undertaking a review planned in the second year of the new framework (January 2023 - December 2023) to support the setting of the targets and tolerances for the final two years of the framework.

[38] See: https://www.ofgem.gov.uk/publications-and-updates/statutory-consultation-post-2020-smart-meter-rollout-reporting-requirements

Public Service Equality Duty (PSED) Assessment

72. A separate analysis has been undertaken by the Smart Metering Implementation Programme to ensure that that the implementation of a post 2020 smart meter policy framework beyond the existing 'all reasonable steps' roll out duty which expires on 30 June 2021 is in line with the Secretary of State obligations under Section 4AA of the Gas Act 1986 and section 3A of the Electricity Act 1989 and fulfil the requirements of the Public Sector Equality Duty (the equality duty) as set out in section 149 of the Equality Act 2010.

73. The smart metering rollout provides a wide number of benefits, and the move to a targets-based framework helps ensure that as many consumers as possible are able to realise the benefits of smart metering. The PSED assessment identified that some consumers would require additional support to ensure that they can access and benefit from smart metering and may have specific needs that must be considered throughout the installation journey.

74. The Government and Ofgem have worked with a range of consumer and other organisations to use the opportunities created by smart metering to protect and provide benefits for those in vulnerable circumstances and to avoid possible disbenefits. The Programme has put in place measures designed to ensure that consumer interests are fully protected. These measures include a Code of Practice covering the necessary steps required during installation; and a Data Access and Privacy Framework, which sets out the purposes for which energy consumption data can be collected and the choices that consumers have about access to their data. The Smart Meter Programme will continue to monitor consumer protection policy to ensure appropriate safeguards are in place, including for vulnerable consumers and consumers with protected characteristics.

Summary

75. We have seen that the policy framework is expected to deliver a strong net benefit to Great Britain. This framework entails energy suppliers being set individual targets for the smart meter installations required to reach market-wide coverage by 31 December 2025. Only the targets and tolerance values for the first two years of the new framework are planned to be implemented as regulatory requirements on energy suppliers at this stage. The targets and tolerance values for the third and fourth years of the framework period (i.e., starting 1 January 2024 and 1 January 2025 respectively) will be confirmed following the outcome of a review by the Government during the second year of the framework (2023).

76. Following a six-month ARS extension, the methodology under the framework establishes annual targets during a period of four years (from 1 January 2022 to 31 December 2025) for each energy supplier based on a straight-line delivery trajectory towards the overall ambition of market-wide smart meter coverage. This methodology takes account of both the starting position of individual energy suppliers as of 31 December 2021 and their performance thereafter in increasing their smart meter coverage.

77. In our modelling we have made reasonable assumptions about the rate smart meters could be rolled out to reflect any barriers to deployment. We have therefore used these to set a reasonable floor that we consider is justifiable, but we have good reason to believe that the market would exceed this minimum. On this basis, we propose to apply the tolerances based on the forecasting explained in this document (see figure 1 on page 10).

78. The Government also recognises that the rate at which it is feasible for energy suppliers to install smart meters is dependent on a range of external factors and market conditions (including the attitudes of their customers towards smart meters), and it is uncertain how these will evolve over the period of the framework. To account for this uncertainty, the framework includes a review based on data collected during the first two years of the framework. The proposals for the final two years are subject to consultation following a review planned during the second year of the framework period, when further and more relevant information will be available to support them. In parallel, the Government has committed to considering a range of policy measures or incentives to support consumer uptake and help energy suppliers in their journey towards achieving market-wide rollout.