

Title: Smart meter Targets Framework: Year 3 and Year 4 IA No: DESNZ013(F)-23-SMIP RPC Reference No: RPC-DESNZ-5261(2) Lead department or agency: Department for Energy Security and Net Zero Other departments or agencies: None	Impact Assessment (IA)		
	Date: 06/07/2023		
	Stage: Final		
	Source of intervention: Domestic		
	Type of measure: Secondary legislation		
Contact for enquiries:			
Summary: Intervention and Options			RPC Opinion: GREEN

Cost of Preferred (or more likely) Option (in 2019 prices)			
Total Net Present Social Value	Business Net Present Value	Net cost to business per year	Business Impact Target Status Qualifying provision
£1,301m	£181m	£35.2m	

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

The Smart Metering Implementation Programme exists to develop smart metering policy and strategy, providing the right framework against which industry can plan, and ensuring benefits are delivered to consumers. The government has implemented the Targets Framework to drive the consistent, long-term investment needed to achieve high levels of smart meter coverage by setting annual targets and providing regulatory certainty. This intervention uses the latest evidence on the progress of the rollout to set the minimum installation requirements that will apply to energy suppliers in Year 3 and Year 4 of the Targets Framework (2024 and 2025). In doing so it ensures that the Framework continues to set targets to 2025, thereby driving the smart coverage needed to deliver the benefits of smart meters.

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

The Targets Framework seeks to ensure that consumers are not left behind without a smart meter, unable to fully participate in the future retail energy market and the benefits this will bring. In particular, it seeks to:

- i. deliver the highest levels of smart meter coverage 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;
- ii. encourage consumers to benefit from the rollout of smart meters;
- iii. normalise smart meters so they are the default meter used in Great Britain; and
- iv. give certainty to the whole sector to invest and plan.


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

1) Do Nothing: This is the counterfactual scenario without additional regulation. In this case, energy suppliers would in 2024 and 2025 only be required to take all reasonable steps to install smart meters in all new metering points and where meters require replacement.

2) Option 1 (preferred option): This sets annual installation requirements for each energy supplier for 2024 and 2025. It does so by setting: a) the amount of allowance, or ‘tolerance’, that will apply to suppliers’ obligation to install at a rate consistent with achieving 100% smart coverage by end 2025; b) an amendment to the structure of suppliers’ requirements regarding domestic and non-domestic installations; c) an adjustment to the formula for calculating non-domestic targets in Year 3 of the Framework (2024) to mitigate the impact of customers switching supplier; **and** d) amendments to licence conditions to apply an additional weighting to some gas smart meter installations to reflect additional complexities in achieving ‘gas-first SMETS2’ installations, and to align the Framework with other obligations in relation to Advanced Meters.

Will the policy be reviewed? It will/will not be reviewed. If applicable, set review date: Month/Year				
Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	MicroYes	Small Yes	Medium Yes	LargeYes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)		Traded: -0.6	Non-traded: -1.5	

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: 30/06/23

Summary: Analysis & Evidence

Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2020	PV Base Year 2024	Time Period Years 11	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: 1,039

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0.6	83.1	802.4

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 76% 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.

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

While we have monetised the 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. However, given this does not inherently displace other activity, and the extent to which this would vary by consumer, this cannot be reasonably monetised.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0.0	198.4	1841.0

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. 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 will enable the creation of a more flexible and resilient energy system benefitting 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 help consumers in shifting their electricity use away from peak times, reducing the need for costly network reinforcement and investment in additional peak generation. Benefits of this sort have not been monetised in this assessment.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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This Impact Assessment is based on the latest Cost-Benefit Analysis model for the smart meter rollout, which was published in September 2019. The comprehensive nature of that assessment gives confidence that it remains suitable for the purposes of this impact assessment. Where appropriate, updates to the inputs of this modelling have been made. For example, Green Book values on inputs such as the value of energy use and greenhouse gas emissions have been updated since 2019 and so we have changed our modelling inputs to remain Green Book compliant.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 86.1	Benefits: 43.2	Net: 42.9	
			176.0

Evidence Base

Problem under consideration and rationale for intervention

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. The smart meter rollout enables energy system flexibility which is forecast to reduce system costs by up to £10bn a year by 2050¹, (by reducing the amount of generation and network needed to meet peak demand). The system flexibility is provided through a combination of electricity storage, interconnectors and demand side response, with the timely roll out of smart meters being an important requirement.
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 approaches 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. This will cut costs for consumers and help us achieve net zero carbon emissions by 2050.
3. Government intervened in ensuring the roll out of smart meters due to a range of barriers to uptake – these are set out in the 2019 Smart Meter Roll Out: cost-benefit analysis.²
4. In June 2021, Government confirmed the tolerance levels for the first two years of the new Smart Meter Targets Framework³. Under the Targets Framework, energy suppliers are set a minimum number of smart meters that they need to install each year. In May 2022, the government also confirmed a modification to the approach taken to calculate Year 2 installation requirements⁴. This is intended to mitigate for the impact of customers switching supplier ('churn') on suppliers' individual targets.
5. In the June 2021 government response⁵, Government also committed to a review and consultation on the methodology and modelling approach used to set suppliers' installation requirements and the tolerance levels for the third and fourth years of the Framework (i.e., those starting 1 January 2024 and 1 January 2025).
6. The previous obligation to take 'all reasonable steps' to install smart meters in all premises expired on 31 December 2021. In the absence of a replacement policy framework, the New and Replacement Obligation (NRO) would have been the only remaining obligation on suppliers to install smart meters, meaning that energy suppliers would only be required to install smart meters at new metering points and for meter replacements (subject to all reasonable steps).⁶ If smart meters were to only be installed in new and replacement situations, this would have led to a substantial slowdown compared to the smart meter installation rate under 'all reasonable steps'. Any

¹ <https://www.gov.uk/government/publications/transitioning-to-a-net-zero-energy-system-smart-systems-and-flexibility-plan-2021>. This figure can be found on pages 10 and 11 and is presented in 2012 prices.

² <https://www.gov.uk/government/publications/smart-meter-roll-out-cost-benefit-analysis-2019>

³ <https://www.gov.uk/government/consultations/smart-meter-policy-framework-post-2020-minimum-annual-targets-and-reporting-thresholds-for-energy-suppliers>

⁴ <https://www.gov.uk/government/consultations/smart-meter-targets-framework-churn-adjustment>

⁵ <https://www.gov.uk/government/consultations/smart-meter-policy-framework-post-2020-minimum-annual-targets-and-reporting-thresholds-for-energy-suppliers>

⁶ The New and Replacement Obligation requires energy suppliers to take all reasonable steps to install a compliant smart metering system where a meter is replaced or installed for the first time. Electricity Supply Standard Licence Condition 39.7 to 39.9; Gas Supply Standard Licence Condition 33.7 to 33.9.

installations beyond the NRO minimum would have been optional, likely slowing the momentum of the rollout after December 2021. Therefore, to maintain the pace of the rollout, the Targets Framework was implemented and came into force on 1 January 2022.

7. In formulating the Targets 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 the highest levels of smart meter coverage across Great Britain.
8. Throughout this document references are made to a range of supporting documents which cover some additional detail that are relevant to this policy but are out of scope of this document. These include the government response document, which summarises the Department's response to the views presented at the consultation stage and summarises our final policy intention; Annex B to this government response, which covers the modelling approach in full detail (though this Impact Assessment document summarises the key elements relevant to the assessment of impacts); and the 2019 Smart Metering Cost-Benefit analysis which is the latest and most comprehensive analysis of the costs and benefits accruing to smart metering.

Policy objective

9. Through engagement with energy suppliers, Ofgem, and Citizens Advice from 2019 to 2021, we identified four key design principles for the Targets Framework. These form the basis of the government's ongoing objectives for the smart meter rollout. They are:
 - a. To deliver the highest levels 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;
 - b. To encourage consumers to benefit from the rollout of smart meters, including how to use the data from their smart meters;
 - c. To normalise smart meters so they are the default meter used in Great Britain; and
 - d. To give certainty to the whole sector to invest and plan beyond the end of the 'all reasonable steps' policy framework.
10. The Targets Framework was designed to support delivery of all of the above objectives. By ensuring that the pace of rollout is maintained, the intention is that the highest levels of smart meter coverage will be delivered as soon as possible. As suppliers are required to offer an In-home Display (IHD) alongside a domestic smart meter installation and to provide free data on request in a useful⁷ format to non-domestic consumers and their nominated third parties⁸; the continued rollout progression should also mean that more consumers are encouraged to benefit from having a smart meter; whilst also normalising smart meters across Great Britain. Finally, by providing suppliers with fixed annual installation targets, the Framework will ensure that suppliers have increased certainty as to how many meters they are expected to install so that they can plan and make business decisions accordingly.

⁷ This is defined as 'machine-readable' in licence conditions. For more details on the exact requirements, please see here: <https://www.gov.uk/government/consultations/maximising-non-domestic-smart-meter-consumer-benefits-improving-the-data-offer-and-enabling-innovation>

⁸ Suppliers also have a requirement to provide free and regular energy use information to smaller non-domestic sites (based on their half-hourly/hourly (electricity/gas) smart meter data) by October 2024.

11. In order for annual installation requirements to be in place, the government is required to set a tolerance level for each year of the Framework. To ensure that the Targets Framework can continue to deliver against its objectives by setting annual targets to drive installation progress, we are now confirming tolerance levels for Year 3 and Year 4 of the Framework.⁹

Description of options considered

Background

12. This Impact Assessment considers the costs and benefits likely to arise under Year 3 and Year 4 of the policy framework compared against a status quo counterfactual scenario. When previously assessing the costs and benefits of the Targets Framework, the decision was taken to only examine the impact on installation performance in the first two years of the Framework (and all costs and benefits deriving from those installs). As the tolerance levels for Year 3 and Year 4 of the Framework were yet to be determined, this was deemed the most accurate and proportionate method for measuring the impact of the Framework as initially implemented. Consequentially, this assessment will focus on the impact on rollout (and hence costs and benefits) that Year 3 and Year 4 of the Targets Framework has when compared to the status quo counterfactual.
13. The Government response document published in June 2020 confirmed the policy approach, having considered a range of different options.¹⁰
14. In September 2019, we initially consulted on three policy options for a new policy framework following the conclusion of the original ‘all reasonable steps’ (ARS) 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.
15. As set out in paragraph 6 above, we do not believe that the New and Replacement Obligation (NRO) alone does enough to incentivise suppliers’ to roll out smart meters at pace; they would only be obligated to install smart meters in new premises and when a traditional meter reaches the end of its life (subject to all reasonable steps). It would therefore not be able to deliver market-wide smart meter coverage within the timescales required to achieve an effective transition to a smart energy system and meet the government’s net zero ambitions.
16. Similarly, whilst the previous ‘all reasonable steps’ obligation (ARS) helped to lay the foundations to build a national smart infrastructure, it is important to maintain momentum towards delivering the highest levels of smart meter coverage. The Targets Framework was implemented at a point when we considered that the maturity of the smart metering technology was such that the regulatory flexibility provided by ARS was no longer required. At the time of developing and consulting on the new policy framework, we considered the option of extending ARS indefinitely. However, we determined that it would not be certain to deliver significant numbers of smart meter installations across all suppliers above those required under the NRO, risking the delivery of the highest levels of smart coverage. For these reasons, this and the previous Impact Assessment has not separately assessed the impact of this “ARS” option.

⁹ In the absence of defined tolerance levels, the framework essentially becomes inoperable, meaning that the NRO becomes the only remaining policy obligation.

¹⁰ [Delivering a smart system: government response to a consultation on smart meter policy framework post-2020](#)

17. In June 2021 we confirmed implementation of the Targets Framework and the tolerance levels for Year 1 and Year 2 of the Framework.¹¹ Following this decision, energy suppliers have individual annual targets on a trajectory to 100% smart coverage in their portfolio. These targets are then subject to tolerance levels that apply across industry but are specific for the domestic and non-domestic sectors. Domestic-only energy suppliers' installation requirements are set as a straight line to 100%, minus the domestic tolerance level, and non-domestic-only energy suppliers' requirements are set as a straight line to 100%, minus the non-domestic tolerance level. Mixed portfolio energy suppliers calculate their requirements by applying the domestic and non-domestic tolerance levels to the respective parts of their customer base, however, under current arrangements they have flexibility to meet their requirements through any combination of domestic and non-domestic installations. Tolerance levels are calculated as the difference between market-wide rollout projections and a straight line drawn from market average coverage on 1 January 2022 to 100% coverage on 31 December 2025. Tolerance levels are intended to account for factors that may influence the feasible pace of the smart rollout, by providing energy suppliers with some flexibility in delivering their installation targets. The Targets Framework came into effect on 1 January 2022.
18. In choosing to calculate annual targets under the confirmed option, we considered and implemented suggestions made in responses to various consultations and other stakeholder engagement. This included the fundamental basis for the forecasting model used to calculate our rollout projections, and the key drivers for the smart meter rollout (as reflected in our projections) which we considered to be consumer acceptance, operational fulfilment, technical eligibility and operational capacity. Based on these drivers, we then used the most appropriate data available to project smart rollout for the first two years of the Targets Framework and calculate annual tolerance levels (see Annex B: Analytical evidence for more details on this).

Preferred option

19. In June 2021, we indicated that we would, during the second year of the Framework (2023), review the SMIP rollout model and underpinning assumptions in line with the most up to date evidence. We have now conducted this review of the rollout model, looking at the assumptions and evidence base that underpin it, and have identified a number of areas where we consider updates to the methodology and forecasting model are needed. The government response document that accompanies this IA sets out our updates and explains our rationale in bringing them forward. Taken together, this set of updates represent our 'preferred option'.
20. The preferred policy option is to:
- a. **set tolerance levels** for delivery of annual targets set on a trajectory to 100% from each energy supplier's percentage coverage at the end of December 2023, such that energy suppliers would have to meet these installation targets within a tolerance allowance (with their target for final minimum smart coverage being the difference between the trajectory to 100% and the tolerance level). These tolerance levels have been calculated using our rollout projection (with separate calculations for domestic and non-domestic), which has been updated to use the latest evidence and validated with evidence presented at consultation stage to ensure the robustness of our assumptions since the June 2021 government response. This is intended to ensure that suitably high coverage levels are

¹¹ Smart meter policy framework post 2020: minimum annual targets and reporting thresholds for energy suppliers – government response

achieved while also accounting for challenges which might limit energy suppliers' ability to deliver the required smart meter coverage.

- b. **amend the structure of the requirements regarding domestic and non-domestic installation requirements in Year 3 and Year 4 of the Framework.** Currently mixed portfolio energy suppliers (suppliers of both domestic and non-domestic premises) have a single annual installation requirement that reflects both the domestic and non-domestic components of their portfolio. Our policy amendments will remove this flexibility in Year 3 and Year 4 of the Framework by splitting the single requirement into two separate installation requirements; one domestic and one non-domestic. This decision has been made to ensure that non-domestic consumers can derive maximum benefit from smart metering (in line with the objectives set out in paragraph 9), as we have evidence that some mixed portfolio suppliers are using the flexibility under the current system in a way that slows progress on the non-domestic rollout. This poses a risk to benefits for small businesses and public sector consumers, particularly if it is carried into Year 3 and Year 4 of the Framework.¹²
- c. **Implement an adjustment to the formula for calculating non-domestic targets in Year 3, to mitigate the potentially unintended impact of customer switching for those energy suppliers that are ahead of market average in their smart rollout.** Such an adjustment has been applied to energy suppliers' combined domestic and non-domestic targets in Year 2. We consider that the modification is no longer required for domestic targets in Year 3 and Year 4, as convergence in suppliers' smart coverage levels has reduced the potential for unfairness as a result of customer churn. However, as there is more variation in suppliers' non-domestic smart coverage levels, we consider this potential for unfairness remains a risk in relation to non-domestic targets in Year 3 and propose extending the churn adjustment for the non-domestic target setting formula for a further year. We do not consider that any churn adjustment is required, for either domestic or non-domestic installation requirements, by Year 4 of the Framework (2025) given the high levels of convergence in levels of smart coverage that we expect to have seen by the latter stages of the Framework in both sectors.
- d. **Implement two adjustments to licence conditions to mitigate the impact of the additional complexities associated with some gas smart meter installations.** We received feedback to the consultation noting the additional challenges associated with installing gas smart meters where an existing SMETS2 communications hub is not already installed ('gas-first SMETS2' installations). We accept that SMETS2 gas-first installations (in circumstances where a different supplier provides the electricity) do take longer than electricity single fuel installations, and that this may lead to potential unfairness for those suppliers that need to conduct these installations. We are therefore proposing to amend licence conditions so that SMETS2 gas-first installations are weighted more highly when assessing progress towards targets. Based on evidence received in the consultation, we are setting a weighting of 1.5 for these installations (meaning each SMETS2 gas-first single fuel installation will count for 1.5 of an installation in progress towards target). We are also making a technical change to licence conditions to align the Targets Framework rules on Advanced Meters with the New and Replacement Obligation. Currently, under the NRO suppliers can install Advanced Meters if a SMETS2 installation has failed, to ensure the customer is

¹² The non-domestic rollout accounts for 6% of meters covered by the smart meter rollout but 21% of consumer benefits.

left with some smart functionality. However, these meters currently cannot count towards meeting requirements under the Targets Framework. We are making a change to allow suppliers to count these meters under the Targets Framework in Year 3 and Year 4 of the Framework. This is intended to particularly support energy suppliers to meet their non-domestic gas targets, while resulting in better customer outcomes where there are technical barriers to installing SMETS2 meters.

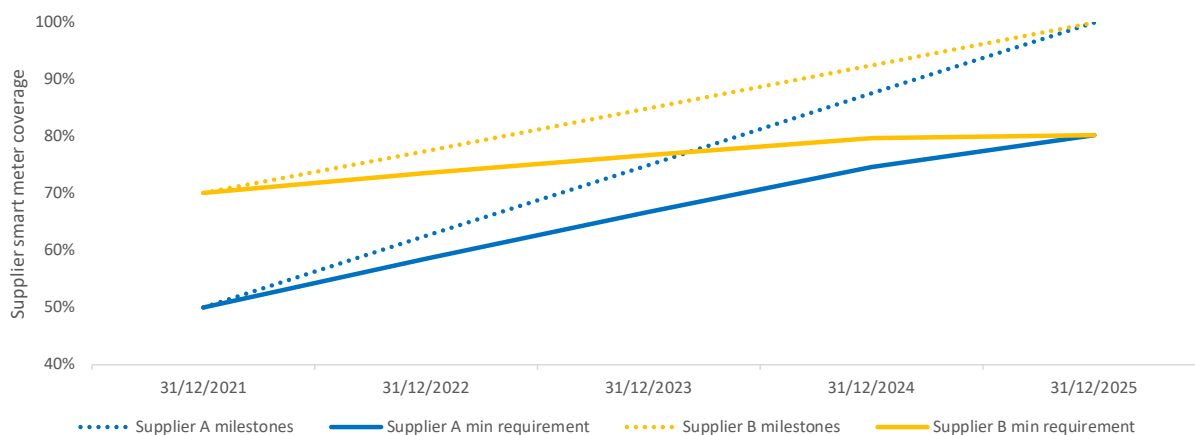
21. In determining the preferred policy options, we considered alternative approaches:

- a. **Not updating the evidence used to set tolerance levels.** We do not consider it would be appropriate to maintain the same assumptions when setting tolerance levels in Year 3 and Year 4 as were used to set the tolerance levels for Year 1 and Year 2. Updating our evidence base to use the latest evidence is essential to ensure the rollout modelling is robust and that the resulting minimum installation requirements for energy suppliers are ambitious and achievable. We also considered making more substantive amendments to the assumptions in the modelling approach. However, we consider that the four components of the model (consumer acceptance, technical eligibility, operational fulfilment and installation capacity) remain the most accurate and robust means of projecting the rollout in 2024 and 2025. We have made several amendments to the modelling assumptions in response to feedback and evidence provided by respondents to the consultation. Full details of our decisions and reasoning are set out in the main response document and Annex B: Analytical evidence.
- b. **Maintaining the same structure of the requirements in Year 3 and Year 4 of the Framework i.e. a single target for mixed portfolio suppliers.** We have not adopted this option as, as set out above, we consider that continuing with a single combined target presents an unacceptable risk to realisation of the benefits to the non-domestic element of the smart meter rollout. Given the consumer benefits of smart meters to be realised in each sector, it is strategically important that suppliers give appropriate focus to both their domestic and non-domestic rollouts in the second half of the Framework. We do not consider this would be achieved through maintaining the same structure of requirements. The main response document outlines our decision and reasoning in more detail.
- c. **Implementing an adjustment to the formula for calculating domestic and non-domestic targets in Year 3 and Year 4, to mitigate the potentially unintended impact of customer switching for those energy suppliers that are ahead of market average in their smart rollout.** We considered maintaining the adjustment for both sectors and for the remaining duration of the Targets Framework. However, we did not adopt this option for the reasons set out in paragraph 20 above. As convergence in suppliers' domestic smart coverage levels has increased, the potential for unfairness as a result of customer churn has reduced. While we have maintained a churn adjustment for Year 3 of the Framework in relation to non-domestic target, we consider that convergence in the non-domestic sector will continue to increase to the extent that no further adjustment is required in Year 4.
- d. **Make no adjustments for gas targets.** We considered maintaining our consultation position, on the basis that as levels of smart coverage increase more electricity meters will be smart, reducing the impact of more challenging SMETS2 gas-first installations. However, we discounted the option of making no adjustment for gas targets, on the basis of the feedback received on the additional

complexities associated with installing gas smart meters in gas-first situations. Respondents noted they have prioritised dual fuel consumers in Year 1 and Year 2 of the Framework and that the challenge will, therefore, become more significant over the course of the final two years of the Framework, as progress with dual fuel installations means more single fuel installations remain. We therefore considered it necessary to introduce weighted targets for both the domestic and non-domestic sectors in order to prevent any unfairness for those suppliers conducting gas-first installations in the third and fourth years of the Framework. We also considered it necessary to align the Targets Framework rules on Advanced Meters with the New and Replacement Obligation for the non-domestic sector to support delivery against targets and better consumer outcomes in circumstances when a SMETS2 installation has failed.

22. 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 used these projections to set the tolerance levels that define energy suppliers' legally binding minimum installation requirements. This in effect sets a reasonable floor for installations that we consider justifiable. However, we believe that the market could exceed this minimum projected rollout (for instance, through increasing installation capacity to meet consumer demand, through improved supplier operational performance and improvements in customer attitudes beyond those assumed in our modelling). Indeed, it may even be in suppliers' interest to aim for full market coverage ahead of the conclusion of the Framework.
23. The tolerance levels 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 Framework commenced). Under the Framework, the straight line to 100% is redrawn at the end of each year (assuming the projected value in the central scenario is achieved in each Framework year) and the difference to the central scenario is used to recalculate the tolerance for the subsequent year. Based on this, the resulting tolerance levels proposed for domestic suppliers are 11.7% in the third year and 25.5% in the fourth year. The corresponding figures for non-domestic suppliers are 14.9% in the third year and 31.3% in the fourth year. These tolerance levels are then applied to individual suppliers' portfolios in line with the formula defined in Electricity Supply Standard Licence Condition 39A and Gas Supply Standard Licence Condition 33A. to give suppliers' minimal installation requirements. This approach is illustrated for two hypothetical energy suppliers in **Figure 1 below**. Further details on how these tolerances were calculated are included in Annex B: Analytical evidence.

Figure 1: Illustration of bespoke targets and minimum requirements for each energy supplier.



24. The key variables that determine the annual minimum installation requirements for each supplier will be: their coverage levels on 31 December 2023 (establishing their specific starting point for Year 3 of the Framework); the tolerance level allowed for that year; and, for the subsequent year of the Framework, the number of customers the energy supplier has without smart meters at the end of the previous rollout year.

25. 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. Supplier obligations under the Targets Framework are based on the number of smart meters installed each year, as opposed to levels of smart coverage in year. In this way, suppliers do not have the option to meet their obligations through consumer churn only.

26. We are also proposing to adjust licence conditions to amend the structure of the requirements regarding domestic and non-domestic installations in the third and fourth Framework years. However, we do not envisage that this will alter our assessment of costs or benefits. This is because in the June 2021 IA we had expected mixed suppliers to meet their installation requirements in line with domestic/non-domestic split calculated by the target setting formula. The proposed amendments to the structure of the requirements in licence conditions therefore formalise an existing policy expectation.

Status quo counterfactual scenario

27. In this Impact Assessment, we compare the preferred option against a status quo counterfactual scenario. This is the scenario that we would expect to prevail if no additional regulation was implemented. Without defining tolerance levels for Year 3 and Year 4 of the Targets Framework, the only obligation that would apply to energy suppliers' installation of smart meters 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.

28. As such, in the IA¹³ published alongside the June 2021 government response, we defined the counterfactual used for measuring the costs and benefits of the tolerance levels set in Year 1 and Year 2 of the Framework. In this counterfactual, we determined the likely progression of the smart meter rollout in the absence of any additional regulation – essentially the progression of the rollout with only the NRO in place. This

¹³ Post-2020 Smart Meter Rollout: <https://www.gov.uk/government/consultations/smart-meter-policy-framework-post-2020-minimum-annual-targets-and-reporting-thresholds-for-energy-suppliers>

rollout profile was run through the Smart Metering cost-benefit analysis model to then determine costs and benefits in the counterfactual scenario.

29. The Targets Framework, as currently implemented, defines suppliers' minimum smart meter installation requirements from 1 January 2022 until 31 December 2023. This will work to shape the smart meter rollout in that period and as a result will shape the starting point for the policy and counterfactual scenarios contained in this IA.
30. However, given the timing requirements around the publication of this government response and IA, some assumptions have been made to reach the level of smart coverage we anticipate at the beginning of both the preferred option and the counterfactual scenario, i.e., the smart coverage at the beginning of the third year of the Framework (2024).
31. Given that suppliers have now reported their installation performance in Framework Year 1 (2022), we have updated our projection to use this data and account for actual smart meter installations in 2022.¹⁴
32. We expect all suppliers to meet their obligations as set out in licence conditions and so assumed at consultation stage that all suppliers will comply with their installation requirements in Year 2. We retain that this is a reasonable policy expectation; annual installation requirements are binding obligations set out in licence conditions and suppliers are expected to meet their licence obligations, with enforcement action a matter for Ofgem. However, respondents argued in their consultation responses that modelling assumptions regarding future target setting should be grounded in the most recent available data and reflect any underperformance (against targets) seen to date. Therefore, for modelling purposes (to ensure future projections are grounded in empirical data) we have changed our approach. For Q1 2023, we have used official statistics to determine the number of installations that took place. For Q2-Q4 2023, we have taken sector specific daily installation run rates from the last six months (Q1 2023 and Q4 2022) and multiplied them by the number of working days in each quarter in 2023 (more detail on this calculation can be found in Annex B: Analytical evidence). This provides us with the starting point for both the counterfactual and preferred policy options.¹⁵
33. In the counterfactual scenario, we then assume that the level of installations for the remainder of the appraisal period is at the rate expected under the NRO, as, without the proposed policy intervention, this would be the only remaining obligation on suppliers to install smart meters. This is consistent with the approach taken in the June 2021 government response and allows the clearest measurement of the impact of Year 3 and Year 4 tolerance levels.

Modelling rollout projections

34. In order to estimate the costs and benefits of the third and fourth years of the Targets framework, we have produced projections of the levels of smart meter coverage expected under the Framework (with the 'preferred option' implemented), and projections 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 Analysis¹⁶ (with some inputs updated to reflect newly available evidence and changes to Green Book guidance on appraisal).

¹⁴ As noted in the consultation stage IA, our intention in the government response has always been to update these figures with the end year 2022 statistics.

¹⁶ <https://www.gov.uk/government/publications/smart-meter-roll-out-cost-benefit-analysis-2019>

The 2019 CBA 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 proposal.

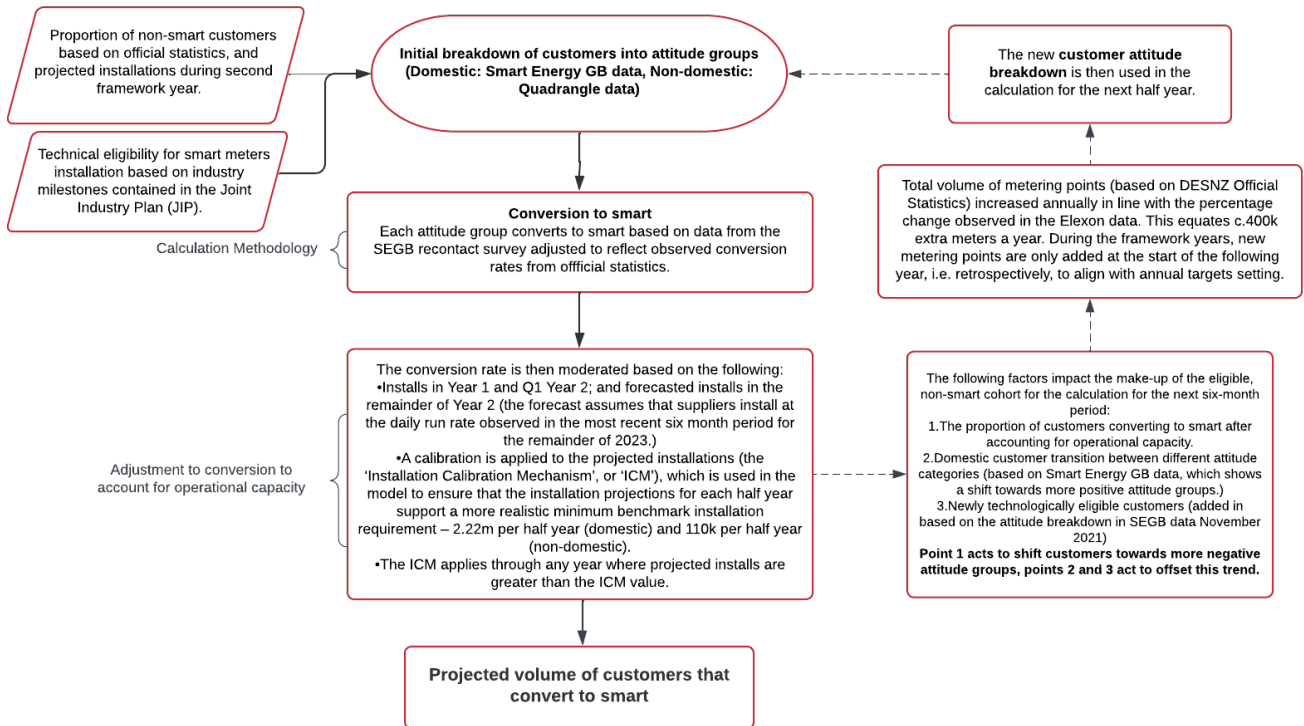
35. All costs and benefits included in the assessment for this policy framework are calculated by adjusting the rollout as described in this document and running these rollout projections through the Smart Metering cost-benefit analysis model. In the interests of proportionality and clarity, and given 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

36. Full details of the modelling approach are explained in Annex B: Analytical evidence; however, an overview of the modelling is explained below. **Figure 2** illustrates how the projection works, where:
- a. The two key variables that determine the feasible rollout are: (i) the proportion of non-smart customers in each of the attitude groups¹⁷ (consumer attitudes); and (ii) their corresponding eligible-to-smart conversion rate (operational fulfilment). These are based on Smart Energy GB (the organisation responsible for the national smart meter consumer campaign) data for the domestic sector and data on technical eligibility (see point c.). These are combined to determine the demand for smart meter installations based on current and future fulfilment rates in each half-year. For the non-domestic sector, we have used a SMIP-commissioned survey of non-smart, non-domestic customers and Smart Energy GB's ongoing Microbusiness Tracker to assess attitudes and then calibrated Smart Energy GB's domestic conversion data from their Recontact survey to historic non-domestic installation rates in order to assess levels of future conversion.
 - b. Operational capacity adjustments are applied to ensure projected roll out does not exceed an estimate of market installation capacity. This acts 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 our rollout model projects meter installations at a rate above levels that evidence suggests the market can successfully complete. Annex B: Analytical evidence gives more detail on how the ICM is calculated for each sector (domestic and non-domestic) 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.
 - c. Technical eligibility is based on current plans agreed between government and industry, where the vast majority of technical constraints should be removed before Year 3 of the Framework. 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.

¹⁷ These attitudes groups are: 1) Seeking a smart meter installation in the next six months; 2) Would accept a smart meter installation in the next six months; 3) Are indifferent to receiving a smart meter in the next six months; and 4) Unlikely to accept a smart meter installation in the next six months.

Figure 2: Methodology for generating Smart Meter Uptake Projection.



Central Scenario – Assumptions

37. The previous sections detail our modelling approach and how this is used to generate a rollout projection. However, this rollout projection is dependent on how we assume consumer acceptance and operational fulfilment will evolve during the Targets 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).
38. Government 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 2020 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. Our rollout model, as used for Year 1 and Year 2 of the Framework, had previously made some implicit adjustments for COVID-19 impacts as part of the underlying modelling assumptions¹⁸. However, the lifting of COVID-19 related restrictions means we have now removed these adjustments.
39. As a central modelling case, we assume that the attitudes of any non-smart consumers become progressively worse on average, as those accepting a smart meter are more likely to have positive attitudes and are thus removed from the pool, leaving behind those with less positive attitudes. However, observations from the Smart Energy GB Recontact survey also suggests that customers move between attitude groups (getting more

¹⁸ Due to uncertainty around how COVID would affect consumer attitudes we had previously 'switched-off' the consumer attitude boost in periods affected by COVID.

positive attitudes on average), which offsets some of the reductions in the positive attitude groups and slows the depletion of positive attitudes from the pool of non-smart consumers (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 expect installations to become disproportionately harder over the two years modelled in this Impact Assessment, as over this period there is clear scope for improved supplier performance in converting positive consumer attitudes into booked appointments and successful installations. 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 perceptions becoming less prevalent as technical issues are resolved.

40. Smart Energy GB data on domestic consumer attitudes since the modelling of Year 1 and Year 2 tolerance levels indicates that, on average over the past few waves of surveys (May 2021 to November 2022), there has been a shift towards the more positive attitude groups of 'seek' and 'accept' from 'indifferent' and 'unlikely' (these categories are defined in Annex B: Analytical evidence). As such we have used a prudent assumption by taking an average of this value with three previous values (the changes observed between May 2021 and May 2022).
41. In the central scenario, we have applied a domestic ICM based on a rate that the market has demonstrated it can deliver under a targets-based regime - 2.22m installs per half year for the domestic market as a whole. For the non-domestic market, an additional consideration has been made to factor in the risk to non-domestic benefits posed by current arrangements for mixed portfolio suppliers that the amendments to the structure of installation requirements aims to rectify. In line with evidence shared at the consultation stage, this rate is equivalent to an ICM of 110k installs per half year.
42. Both of these numbers have been revised downwards following a review of the evidence presented at consultation stage. In the domestic sector, we have updated our evidence base to use a benchmark installation period in 2022. We do so as we accept feedback received in the consultation that we should be using up to date data throughout our modelling assumptions. We know from bilateral meetings with energy suppliers and evidence presented at the consultation stage that suppliers anticipate increases in the size of the field forces by the end of 2023, and it remains our expectation that they should be seeking to increase their installer workforce. The additional field force, as well as supporting delivery of targets, enables suppliers to meet all their regulatory obligations, including where this involves remedial action to fix non-functioning meters and to conduct replacements where required. In the non-domestic sector, we have returned to basing the ICM on past installation performance (as we did for Year 1 and Year 2 of the Framework) after considering the evidence raised at the consultation stage which questioned the validity of some of the assumptions underpinning our new methodology). More detail on the proposed methodology and justification is included in the Annex B: Analytical evidence.
43. Based on the modelling set out in these consultation proposals, the ICM does not bind for the domestic rollout but binds in all of 2024 for the non-domestic rollout, as the model projects that consumer demand is maintained above the level of the ICM in this period. In the last year of the Framework, the ICM is non-binding for both domestic and non-domestic and does not set the rollout projection as projected installations are below the level of the ICM.

Status quo counterfactual scenario

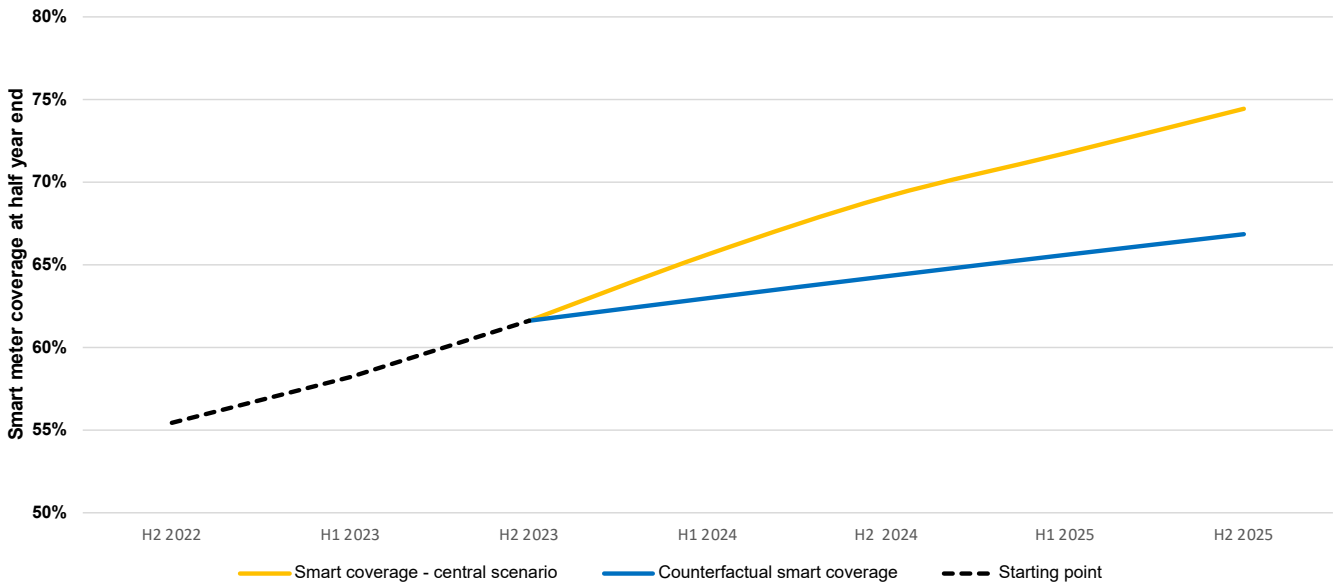
44. Installations under the NRO (the status quo) from 1 January 2024 are projected as follows:

- a. 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. It is assumed that these will all receive a smart installation.
- b. 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.

Comparison of scenario rollout projections

45. **Figure 3** (below) shows the projected smart meter coverage (percentage of all meters that are smart) under both scenarios. Specifically, it shows that the preferred policy scenario helps to maintain the rollout’s momentum post December 2023, whereas in the status quo counterfactual this momentum would be lost, and installation rates would be substantially reduced. By the end of December 2025, smart meter coverage under the main policy scenario is expected to be 8 percentage points higher than under the status quo counterfactual.

Figure 3: Smart meter coverage in the central and counterfactual scenarios



Cost Benefit Analysis

46. 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:

Table 1: Cost and Benefit categories associated with the Smart Meter Rollout

Costs	Benefits
<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • Energy savings for consumers • 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

47. These costs and benefits were calculated based on a range of evidence, including data provided by energy suppliers, international comparisons, and research commissioned by the Programme. 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 **Figure 3** above). These differences are appraised over the period from 2013 to 2034 using a 2024 present value base year and 2020 prices. Since the policy option would be implemented in 2024 (and installation levels are the same in all years prior to this across all scenarios considered), this corresponds to eleven appraisal years (2024-34). In line with the 2019 Cost-Benefit Analysis and HMT Green Book guidance, we have used an eleven-year appraisal period in order to appraise the costs and benefits of the policy option on one full cycle of smart meter installations.

48. At the consultation stage, some respondents raised concerns about whether the impact of the costs of the transition to using 4G communications hubs were being appropriately factored into the cost-benefit analysis for this policy measure. The 2G and 3G mobile networks will be sunsetted by 2033. Currently, smart meter communications hubs in Communications Service Provider’s Central and Southern regions use the 2G and 3G networks to connect to DCC’s secure network, essentially providing the metering asset with its smart functionality. Communications hubs which use the 2G and 3G networks have an expected operational life of 15 years, therefore, communications hubs installed with smart meters in Year 3 and Year 4 of the Targets Framework will require replacement with a 4G communications hub before their expected end of operational life. We have included the costs of this early replacement (the cost of an additional visit, reverse logistics, and the additional 4G communications hub asset) in our appraisal of costs relating to this policy, with CHs asset costs being included in the asset cost line and the cost of the additional visit and logistics included in the installation costs line.

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

Scenario	Net benefit compared with status quo counterfactual
Policy scenario – central case	£1,039m

50. From these results, we can see that under the central scenario the policy framework is expected to deliver a net benefit of £1,039m 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 January 2024 and 31 December 2025 and makes no assumptions about any enduring policy frameworks beyond the end of the Targets Framework other than those already in place (so in this case, the NRO will continue beyond 31 December 2025).
51. **Table 2** below shows that the vast majority of costs relate to the installation of new metering equipment (approximately 76% for the installation process and the new assets). Over one third of benefits are savings that smart meters enable consumers (domestic and non-domestic) to realise, both in terms of energy savings and time savings from reduced time spent interacting with the energy system. Just over 28% of the benefits are environmental and include the reduction in CO₂e emissions and air quality damage that smart meters enable. The environmental benefits include an emissions reduction equivalent to 2.1m tonnes of CO₂e. Much of the remaining benefit is to energy suppliers, largely through efficiency savings that greater numbers of smart meters will enable them to make.
52. 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 market-wide 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.

Table 2: Summary of discounted costs and benefits (2020 prices, 2024 present value)¹⁹

Costs (£m)		Benefits (£m)	
<i>In-premises costs</i>	667	<i>Customer consumption and time savings</i>	677
Asset costs	259	Domestic consumers	496
Installation costs	354	Non-domestic consumers	181
Operation and maintenance costs	54	<i>Energy supplier benefits</i>	623
<i>Other costs</i>	136	Avoided Meter Reading & Inspection Visits	193
Supplier and Industry Opex	131	Reduction in customer service and inbound enquiries	103
Supplier and Industry Capex	11	Reduction in prepayment cost to serve premium	77
Pavement reading inefficiency	-57	Customer switching benefits	118
Energy consumed by smart meter equipment	49	Change of tariff benefits	14
Disposal costs	1	Reduction in theft and losses	23
		Debt handling	95
Total NPV (£m):		<i>Other benefits</i>	541
1,039		Carbon & Air Quality benefits	518
		Network benefits	23

¹⁹ As more traditional meters are replaced with smart meters, the geographical density of the remaining traditional meters decreases and so pavement reading inefficiencies are included in the 2019 Smart Metering CBA as a cost. It becomes more time-consuming to read these traditional meters (for example, because travel times between meters needing to be read increase or because meter readers are in a particular area for a shorter time period, making revisits to premises where access was not possible more difficult). However, this is a negative cost for this particular policy (in effect a benefit) because the peak of this inefficiency occurs when there are near equal numbers of traditional and smart meters (smart coverage is 55% as of Q1 2023). At this point, any policies that increase the rate of smart meter rollout, including this one, lead to a cost saving for suppliers (as fewer, inefficient activities relating to traditional metering need to occur.)

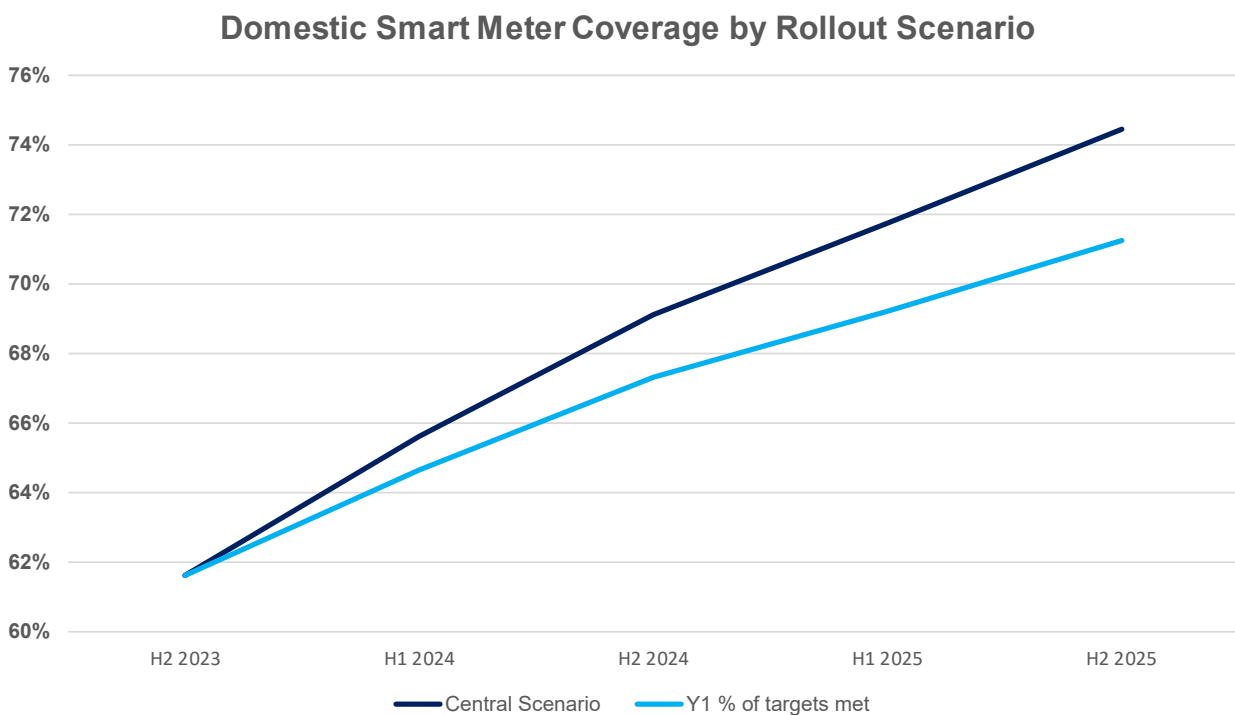
Sensitivity analysis

53. The analysis presented is based on energy suppliers delivering the installations required to reach a starting smart coverage of 61.6% for domestic metering points and 56.5% for non-domestic metering points at the end of December 2023. If this starting point is not reached then smart coverage levels throughout the framework period, in both the policy and counterfactual scenarios, will be lower. Whilst this does not have a notable impact on the NPV of the policy (as it would affect the counterfactual as well as the policy option), it does mean that the final smart coverage at the end of the framework would be 0.4 percentage points lower for domestic with there being minimal change for non-domestic. (This is in a scenario where suppliers install smart meters at the same rate observed in Q1 2023 for the remainder of 2023.)

54. We have considered an illustrative scenario in which energy suppliers install only 76% of the meters compared to the central scenario. This is akin to Year 1 installation performance persisting for Year 3 and Year 4 of the Framework. 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.

55. The forecast overall smart meter coverage levels under this scenario (and the central scenario) are shown on the following graph:

Figure 4: Domestic Smart meter coverage by rollout scenario



56. In a scenario where energy suppliers are obligated to meet installation requirements but fall short, our modelling still indicates that the policy option would still provide a strong net benefit of £690m relative to the status quo counterfactual.

57. 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:

- a. Smart coverage starting point: Historical data from Official Statistics has been used up to the end of Q1 2023. For Q2-Q4 2023, we have taken sector specific daily installation run rates from the last six months (Q1 2023 and Q4 2022) and multiplied them by the number of working days in each quarter in 2023 to estimate the number of installations in the period. Given the importance of acknowledging current and recent installation performance and the obligation for suppliers to take steps towards complying with their licence conditions, this is considered the most prudent way to estimate the Year 3 starting point. Further details of the rationale for this assumption are set out in the main response document and Annex B: Analytical evidence.
- b. Consumer attitudes: The data available (primarily reflecting the domestic sector) suggests that, over time, 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. We therefore consider there to be a low risk that changes in consumer attitudes will significantly affect projected smart coverage.
- c. Operational fulfilment: Evidence from the Smart Metering Implementation Programme's operational performance benchmarking and best practice sharing work with large 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. In the modelling as consulted on, we proposed applying a realistic uplift to conversion rates which reflected these expected improvements. We received feedback to the consultation that as the rollout progresses in the final two years of the Framework, the rate of improvement in operational performance will become more difficult to project, making it more difficult to calculate a robust assumption for the uplift in conversion rates. In light of this feedback, we have removed the uplift as a standalone metric within the rollout projection. In making this adjustment, we are taking a prudent approach to modelling the rollout in 2024 and 2025 and responding to consultation feedback. We still consider that there is clear scope for further improvements in operational improvement. Suppliers are expected to make these improvements, which will support them to reach their installation requirements in Year 3 and Year 4. Given the evidence available on the scope for improvement and given our amendment to the modelling to respond to feedback from industry, we consider there to be a low risk that this will significantly affect projected smart coverage.
- d. Technical eligibility: In our central scenario, we have also used a technical eligibility series based on major milestones agreed by both government and industry. We therefore do not anticipate changes to technical eligibility that would have a significant, negative impact on rollout. We therefore consider there to be a low risk of this affecting projected smart coverage.
- e. Operational capacity: A key constraint on energy suppliers' abilities to operationally deliver on their obligations is the number of installers available. No explicit constraint on installer numbers has been assumed in the modelling, following feedback received from energy suppliers in response to our September 2019 and November 2020 consultations. Several of these 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. However, following the COVID-19 pandemic, suppliers have reported some reduction in their field force. In response to this, suppliers and other meter installers have begun expanding their recruitment and training activities through the latter part of 2022 and this is expected to continue throughout 2023. We therefore do not consider operational capacity to be a constraint on installation performance in Year 3 and Year 4 of the Framework, beyond that which has already been adjusted for in response to the evidence submitted in response to the February 2023 consultation. Therefore, we consider that the risk of operational capacity impacting projected smart coverage is low.

Direct costs and benefits to business calculations

58. 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 Business Impact Target (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
1,301	181	35.2	176.0

59. These calculations are based on the eleven remaining years of the 2013-34 appraisal period after the policy options are scheduled to take effect (i.e., 2024 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.

60. For the main NPV calculation, energy consumption savings are computed using the long-run variable cost of energy²⁰, in line with guidance on computing the societal benefit of changes in energy consumption. This approach, as taken with previous smart metering IAs, assumes that a reduction in energy consumption does not result in losses for suppliers, networks or generators – the reduction in energy consumption is driven entirely by efficiency savings and does not consider economic transfers. However, we have taken a different approach for the purposes of the BIT and Equivalent Annual Net Direct Cost to Business (EANDCB) calculation, using retail energy prices²¹ to explicitly capture the impact the policy will have on businesses. This follows the approach taken for the BIT and EANDCB calculations in the IA for the first two years of this Framework.

²⁰ <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal>

²¹ <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal>

Small and Micro Business Assessment ²²

61. With reference to the policy under consideration, both the energy suppliers and a proportion of the consumers are businesses²³, as the policy applies to a proportion of the non-domestic sector. Most of the non-domestic consumers covered by the smart metering mandate are micro businesses, while the rest are small and medium-sized enterprises (SMEs) and smaller public sector organisations.
62. The smart meter rollout includes within scope all domestic metering points and 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 **Figure 3**, we would expect around 200,000 more metering points in these businesses to have a smart meter by the end of December 2025 than would be the case without policy intervention. The 2019 Smart Metering Cost-Benefit Analysis showed that receiving a smart meter will enable these non-domestic 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.
63. 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 (as these reduced costs will ultimately lead to lower prices for consumers). 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.
64. 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, 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 meet their minimum installation requirements in the first two years of the Targets Framework. Therefore, the requirements imposed by the policy framework are not substantially different in character from the obligations that already apply to them. We had previously considered 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.
65. It has not been possible to source complete data that distinguishes energy suppliers by their exact number of employees and so, given the absence of data on the number of employees by energy supplier, 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

²² Whilst this section continues to refer to the small and micro business assessment, we have also included a medium sized business regulatory exemption assessment in line with the government guidance. Guidance can be found here: <https://www.gov.uk/government/publications/better-regulation-framework/medium-sized-business-regulatory-exemption-assessment-supplementary-guidance>

²³ 6% of metering points covered by the smart metering mandate were non-domestic meters as of 31 December 2021.

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.

66. Instead, this Impact Assessment has used an annual turnover-based approach where a small business is defined as one with an annual turnover no more than £10.2m and a micro business is defined as one with an annual turnover no more than £632k²⁴. This is in line with the approach used for the Smart Meter Policy Framework Post 2020 IA²⁵ and Raising the Non-Domestic Smart Meter Consumer Offer IA²⁶. Annual turnover has been collected from Companies House data, where available, to determine which suppliers meet the above criteria. Where no specific turnover data is available, individual financial accounts submitted to Companies House have been studied to determine the basis on which abridged accounts have been submitted. Where the likely cause for abridged accounts is that individual businesses do not meet the required turnover threshold to submit full accounts, they have been classified as a small or micro business.

67. At the time of writing there are 57 energy suppliers who have obligations covered by the smart metering mandate operating in the market. Of these, we estimate that 17 of these are small businesses and micro businesses.

68. In line with the Government announcement on 2 October 2022²⁷ we have also considered the potential impact of a medium-sized business exemption. As with the approach detailed in paragraph 66, we have, where possible, used a turnover based definition to identify which energy suppliers covered by the smart meter mandate (and thus subject to this policy) are medium-sized businesses.²⁸ As such, we have identified energy suppliers as a medium business where their annual turnover exceeds £10.2million and is no more than £36million. Defined this way, an additional 6 energy suppliers would be included in the exempt category should a medium sized business exemption be enacted. Exempting these suppliers would disadvantage a proportion of consumers who may be less likely to be offered or receive a smart meter (working contrary to the government objectives identified in paragraph 9).

69. Smart coverage of the 17 energy suppliers identified as small/micro businesses (and the 6 suppliers identified as medium sized businesses) is variable. Of these energy suppliers, 9 were behind on the smart rollout at the start of the Targets Framework (i.e., their smart meter coverage was lower than the market average, as of 31 December 2022). However, having been behind in the rollout does not mean that compliance with this policy will impose a disproportionate cost burden on these businesses. The market already offers a solution to ensure that the smart rollout is financeable for all suppliers regardless of their size and smart coverage. 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

²⁴ As defined by Companies House: <https://www.gov.uk/government/publications/life-of-a-company-annual-requirements/life-of-a-company-part-1-accounts>

²⁵ <https://www.gov.uk/government/consultations/smart-meter-policy-framework-post-2020-minimum-annual-targets-and-reporting-thresholds-for-energy-suppliers>

²⁶ <https://www.gov.uk/government/consultations/maximising-non-domestic-smart-meter-consumer-benefits-improving-the-data-offer-and-enabling-innovation>

²⁷ <https://www.gov.uk/government/news/red-tape-cut-for-thousands-of-growing-businesses>

²⁸ In line with the Companies House definition found here: <https://www.gov.uk/government/publications/life-of-a-company-annual-requirements/life-of-a-company-part-1-accounts>

market average) will be paying less (on a per customer basis) as a proportion of the overall metering base until smart coverage is 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 installations. 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).

70. It should also be noted that each energy supplier's targets, and minimum installation requirements will continue to be set as a proportion 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 medium, small, and micro sized 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

71. Consumers are paying for the smart meter rollout through their gas and electricity bills. Without this policy intervention, the rollout is likely to slow down considerably after the end of December 2023. 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, for example, the novel Demand Flexibility Service launched by National Grid ESO in winter 2022 or 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.

72. There is robust evidence from the rollout to date that consumers are achieving sustained savings using their smart meters and In-Home Displays of 3.0% for electricity and 2.2% for gas credit. This is particularly beneficial at a time of high global gas prices, which have resulted in substantial increases to the default tariff price cap set by Ofgem to protect consumers on default tariffs from excessive pricing from energy suppliers. While the government has responded to protect consumers from the spike in cost in energy prices with the Energy Price Guarantee, it remains the case that energy savings enabled by smart meters will be especially valuable to consumers in the current circumstances in the retail energy market.

73. 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 the highest levels of smart coverage by the mid-2020s will likely allow more consumers to have access to future smart energy tariffs, promoting effective competition within the energy market.

74. Smart meters provide consumers with more timely and detailed information about their energy usage. This allows consumer action leading to energy savings. Furthermore, high levels of smart meter coverage have 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.
75. 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 Targets Framework, while data collection continues, suppliers do not have to submit projections to Ofgem, so the burden of monitoring compliance is manageable and proportionate.
76. 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 have also included a summary of the Public Sector Equality Duty (PSED) assessment relating to this policy in the following section.

Equalities Analysis

77. The Public Sector Equality Duty (the equality duty or PSED) is a legal requirement under the Equality Act 2010, whereby public sector organisations must consider people with protected characteristics when planning, implementing and reviewing policies and making decisions.
78. A separate analysis has been undertaken by the Smart Metering Implementation Programme to ensure that the implementation of the minimum installation requirements for Year 3 and Year 4 fulfil the requirements of the Public Sector Equality Duty (the equality duty) as set out in section 149 of the Equality Act 2010.
79. PSED analysis has been considered for the proposals included within the 'preferred option'. This analysis considered these proposals against all nine protected characteristics, for all three arms of the Equality Duty:
 - a. Eliminate unlawful discrimination;
 - b. Advance equality of opportunity between people who share a particular protected characteristic and people who do not share it; and
 - c. Foster good relations between people who share a particular protected characteristic and people who do not share it.
80. The impact of smart metering and progress in delivering the rollout is subject to ongoing monitoring, both by the Smart Metering Implementation Programme and through research conducted by external parties (e.g. consumer groups, Ofgem and Smart Energy

GB). We have analysed these studies to help understand the impacts of the 'preferred option' on consumers with the protected characteristics detailed under the Public Sector Equality Duty. The changes to the Framework have been considered independently, with separate Public Sector Equality Duty analyses carried out for all protected characteristics. This includes the impact of the tolerance levels set for Year 3 and Year 4, the amendment to the structure of requirements relating to domestic and non-domestic installations, and the adjustments to mitigate the impact of certain gas installations and of customer switching in the non-domestic sector. The aggregate impact of all proposed interventions has also been considered.

81. The biggest potential risk identified is that those with protected characteristics do not benefit from smart meters should they want one installed. The 'preferred option' contributes to mitigating this risk by driving high levels of smart coverage, thereby ensuring that the benefits of smart metering are available to as many consumers as possible.

Consumer benefits and protections

82. Smart meters offer significant benefits to consumers, including a number that may be particularly relevant for consumers who share particular protected characteristics. The government has followed an 'inclusive by design' approach to developing the policy and technical framework supporting the rollout. These measures include requiring that the In-Home Displays offered to consumer meet accessibility needs and introducing a Smart Metering Installation Schedule (previously the Smart Metering Code of Practice and now part of the Consolidated Metering Code of Practice) governing energy suppliers' conduct in relation to the installation visit. Under this Schedule, installers are required to demonstrate the smart metering equipment and offer guidance on how to use the IHD which meets the customer's needs. Domestic consumer consent is required for any marketing, and no sales transactions can be concluded during the visit.

83. These specific protections sit alongside wider obligations on energy suppliers to identify consumers in vulnerable circumstances and treat them fairly. Energy suppliers are also required to comply with General Data Protection Regulation, direct marketing rules, the Consumer Rights Act 2015 and the Consumer Protection from Unfair Trading Regs 2008, which prohibit unfair commercial practices such as misleading actions or omissions, and aggressive practices.

84. It is recognised that some consumers may require additional support or adaptations to fully realise the benefits of smart metering. Appropriate policies and protections are in place to enable these consumers to benefit.

Conclusions of the Equalities Analysis

85. We consider that none of the policy interventions in the 'preferred option' after mitigation contain measures that are likely to produce a direct positive or negative impact on groups with protected characteristics. Where analysis suggests there may be a risk of indirect impact on groups with protected characteristics as a result of those groups being statistically more or less likely to have a smart meter, we have considered the extent of this risk and the mitigations in place. We consider that such risks are effectively mitigated through either existing processes and policies, or alterations to the policy already made in the design process.

86. We do not consider that the 'preferred option' could be perceived as introducing favouritism or discrimination between people who share a particular protected characteristic and people who do not share it. There is no evidence that the changes will

foster better relations between people who share a particular protected characteristic and people who do not share it.

Monitoring and Evaluation

87. 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, which has consulted separately on the reporting requirements of the obligation and have implemented processes to carry out the relevant monitoring and evaluation.
88. From a regulatory point-of-view, the Targets Framework is more straightforward than 'all reasonable steps', with Ofgem has confirming that it does not lead to any costs increases in respect of reporting, monitoring and enforcement activities. This proposed policy framework does not significantly increase the reporting requirements beyond those in place in the first two years of the Targets Framework. On that basis, the implementation of this policy does not impose any additional reporting burden for suppliers and therefore no additional reporting costs.
89. Furthermore, the smart meter roll-out has an established programme of monitoring and evaluation, delivered by the Programme's Benefits Realisation team. The Programme will continue to monitor the progress of the smart meter rollout, including (but not limited to):
- a. Producing quarterly statistical releases making transparent the progress of the rollout, with additional internal analysis focusing on reported supplier performance compared to their targets also undertaken;
 - b. Monitoring more timely indicators of installation progress available from administrative data sources;
 - c. Collecting detailed monitoring data on energy supplier operational delivery, supporting identification of areas of best practice (which are disseminated) and engagement with energy suppliers to drive higher performance.
 - d. Holding regular bilateral meetings with energy suppliers to identify issues, promote best practice, and monitor developments within the industry, including those relating to their compliance with their targets as determined by the Targets Framework;
 - e. Working with specific business sectors (those covered by the smart metering mandate) to ensure that they are able to get the most out of smart metering; and
 - f. Reviewing the benefits being delivered by smart meters, as part of ongoing benefits realisation activity within the Smart Meter Implementation Programme, with focus given to the role of policy measures, including this one, on the realisation of these benefits.
90. In defining tolerance levels for Year 3 and Year 4 of the policy framework, a range of evidence was considered to understand the impact that Year 1 targets had on smart meter uptake. This included data on performance by energy suppliers relative to their Year 1 targets and the underlying factors that drove this performance, including considerations relating to consumer attitudes, supplier operational capacity and the rate of operational fulfilment. Whilst a majority of energy suppliers did not meet their Year 1 targets, the broad conclusions from this analysis are as follows:

- a. There was sufficient consumer demand for energy suppliers to meet their minimum installation requirements.
- b. Whilst since the COVID-19 pandemic, there had been some reduction in the installer field force headcount from pre-pandemic levels, a number of suppliers and third-party installers had taken action during 2022 to recruit and train additional resource through 2023, such that installer numbers were not a barrier to meeting installation requirements.
- c. Given the lack of other obligations on suppliers to install smart meters, the framework has delivered more installations than would have occurred in its absence.

91. Given these conclusions, it is our view that a continuation of the Targets Framework, with tolerance levels defined using the best available evidence, remains the most appropriate regulatory measure for driving smart meter installations for the remainder of the Framework period (through to the end of 2025).
92. To monitor the progress of the rollout (and the impact of this policy) we will continue to collect a range of data and evidence relevant to this policy measure. Suppliers are obligated to submit their individual targets to Ofgem and to publish them on their websites. We will continue to monitor their progress against these targets on a quarterly basis using the installation data that suppliers submit to the programme for the quarterly statistical publication on the roll-out of smart meters in Great Britain.
93. Additionally, we will continue to collect the data used to calculate the smart meter uptake projection, which is used to generate the market wide tolerance levels. To monitor developments relating to consumer demand, we will continue to engage with Smart Energy GB to collect data on the range of consumer attitudes towards smart metering, and the underlying drivers of these attitudes. We will also continue to collect a range of operational data from energy suppliers as part of our regular statistical collections. This includes data on the size of suppliers' installer workforces and their rate of operational fulfilment, which will allow us to identify any ongoing issues which could become potential barriers to delivering against their minimum installation requirements. In addition, the Programme is currently commissioning a process evaluation of energy supplier customer journeys, which will provide evidence on their fulfilment of demand from bookings to successful installations.
94. The current rollout installation obligation sets energy suppliers' annual targets to 2025. Government will be considering in 2023 and 2024 whether the licence conditions for smart metering installations require any update to ensure they remain fit for purpose beyond 2025. When determining whether any update is required, the Programme will evaluate performance in Year 3 and Year 4 of the Framework as set out above, with particular consideration given to the maturity of the rollout and the differing challenges that this may present.