



Department for
Business, Energy
& Industrial Strategy

Smart Meter Targets Framework

Consultation on minimum installation
requirements for Year 3 and Year 4

ANNEX B: Analytical Evidence



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Background

1. In the June 2021 government response on energy suppliers' minimum installation requirements, we confirmed the details of our modelling approach used for the calculation of tolerance levels under Year 1 and Year 2 of the Targets Framework.¹ The modelling approach was adapted following feedback from stakeholders after consultation processes in 2019 and 2020.² The revised model, which is further explained in Part One of this document, was based on three main factors which drove the smart meter rollout projections:
 - a. **Consumer acceptance:** based on consumer attitudes ('seek'/'accept'/'indifferent'/'unlikely') towards smart metering which will define consumers' willingness to accept a smart meter and then their likelihood to be 'converted' to smart, given their attitudes.
 - b. **Operational capacity:** based on the market installation capacity and the ability to meet the potential demand for installations.
 - c. **Operational fulfilment:** based on energy suppliers' ability to fulfil an installation promptly and effectively once the customer has agreed to have a smart meter installed.
2. A version of this model, alongside the description of the assumptions underpinning the projections, was made available to energy suppliers and designated parties during the November 2020 consultation process. In response to the consultation, we received comprehensive feedback from stakeholders and in particular from energy suppliers on the assumptions used in our projections. A trade body representing energy suppliers also submitted an analytical report alongside their response to the consultation.
3. We considered all the challenges raised in the report and by all consultation respondents. We made a number of updates to our modelling where robust and relevant evidence was provided to justify these changes.
4. The tolerance levels for the first two years of the Framework (2022 and 2023) were confirmed in June 2021. Tolerance levels were not set for Year 3 and Year 4 (2024 and 2025) of the Framework, as the government wished to ensure that the most recent data was used to set installation requirements for the final two Framework years. We therefore confirmed that a 'mid-point review' would take place in 2023 that would consider the tolerance methodology, including the BEIS rollout model, and the latest available evidence on the progress of the rollout in order to set the tolerance levels for the second half of the Framework.
5. Following this review, we consider that the overarching methodology used to set tolerance levels remains appropriate and the central components of the BEIS rollout model – consumer acceptance, technical eligibility, operational fulfilment and operational capacity – remain the most accurate and reliable means of projecting the installation trajectory in Year

¹ [Smart meter policy framework post 2020: minimum annual targets and reporting thresholds for energy suppliers](#)

² [Smart meter policy framework post 2020](#)

3 (2024) and Year 4 (2025). We have identified a number of areas where we consider updates to the methodology and rollout model are needed to ensure the Targets Framework remains relevant and robust for 2024 and 2025.

6. This Annex describes our modelling approach, the main assumptions underpinning our projections, and the changes made to these projections as a result of updates made to the model.

Part One: BEIS Projections

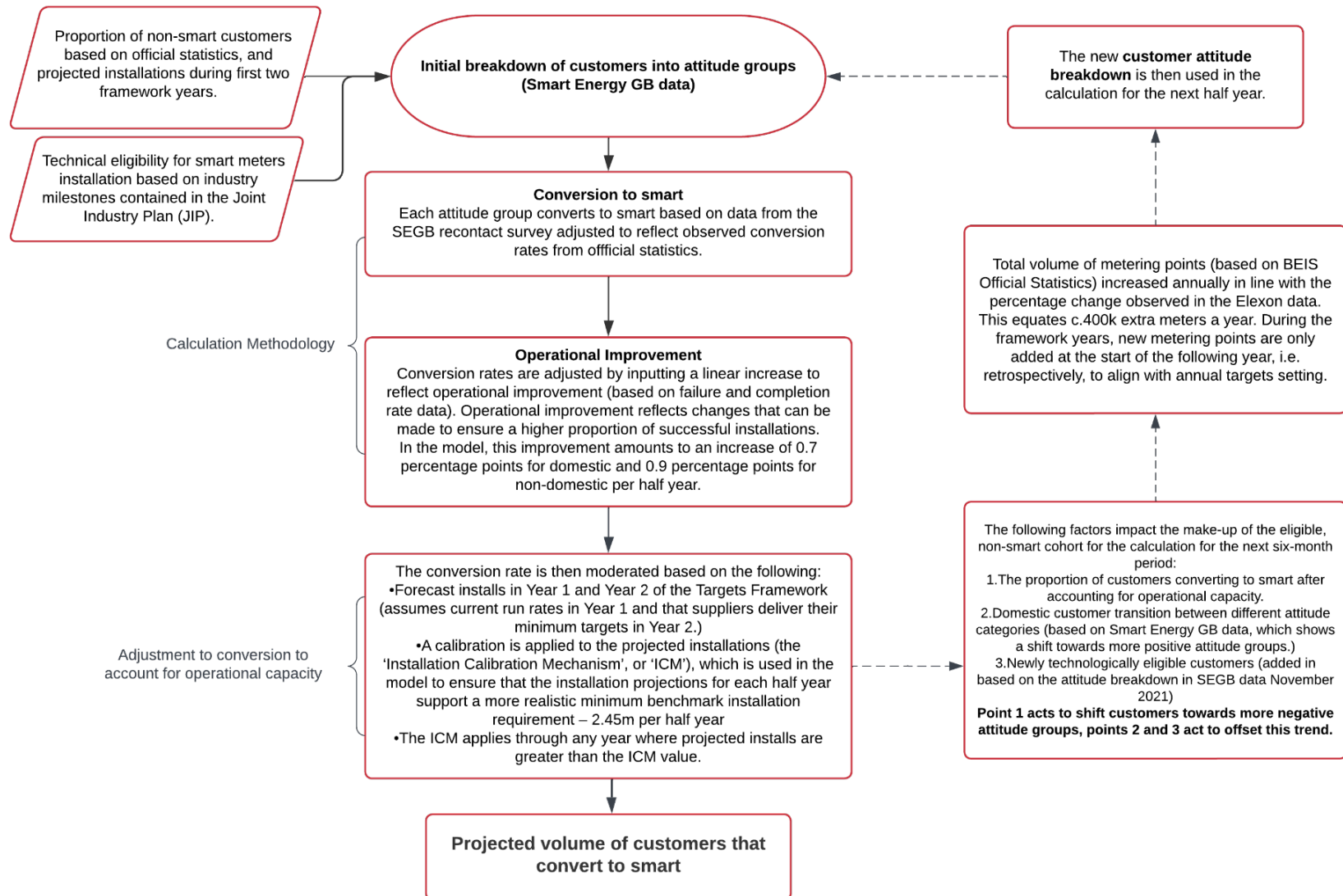
Modelling Approach

7. The binding minimum installation requirements for each energy supplier are determined based on a model of the industry-wide rollout (split between domestic and non-domestic), combined with the smart coverage of individual suppliers at the beginning of the Targets Framework. Supplier 'targets' are set on a straight line from the smart coverage at the beginning of the Framework – the 'starting point' – to 100% smart coverage by the end of 2025.³ However, as is explained below, in each year a tolerance level is applied to this target, so that the minimum required installations per supplier are below their straight line to 100% coverage.
8. The minimum requirements for individual suppliers are based on industry-wide rollout projections over the Framework period. This model takes into account a variety of drivers and constraints. In doing this, we want to ensure that the minimum requirements set for energy suppliers are attainable and realistic, while also achieving a sufficient level of ambition to deliver the benefits of the rollout.
9. The main drivers of the BEIS rollout model used to calculate minimum requirements are:
 - a. Consumer acceptance, or willingness to accept a smart meter installation.
 - b. The technical eligibility of consumers to have a smart meter installed in their home or non-domestic premise.
 - c. The level of operational fulfilment, i.e., the rate at which energy suppliers and third parties are able to install smart meters for willing consumers (the rate at which willing, non-smart customers are 'converted' into smart customers).
 - d. The industry-wide operational capacity, i.e., the total capacity of industry to install smart meters in a given period.
10. Each of these drivers are discussed in more detail in the next section. Jointly, they determine the rate at which consumers are converted from traditional meters to smart meters, which in turn determines the forecasted coverage and thus the industry-wide minimum requirement at each point of the Framework.
11. Within this model, the minimum requirements for the domestic and the non-domestic sector are calculated separately. This is because of differences in circumstances between the rollouts in the two sectors (for further details see the main consultation document) and the effect this has on smart conversion. While the specific inputs used for the domestic and non-domestic calculations are different, the overall modelling approach is the same for both. Paragraphs 55-62 of the consultation document outline the non-domestic customer journey, including how the overarching modelling approach aligns with this.

³ This line is redrawn to 100% at the beginning of each Framework year to account for installation performance in the previous year.

12. **Figure 1** summarises this modelling approach, the details of which (including the underlying assumptions) are discussed in the next section.

Figure 1: Diagram of the modelling approach



BEIS Rollout Assumptions

13. The main inputs and assumptions underpinning the model used to calculate minimum requirements are listed below. The initial explanation will focus on how each component of the model works.
14. When modelling the rollout in Year 1 and Year 2 we developed distinct domestic and non-domestic assumptions to account for the different circumstances between the two sectors. We consider it remains appropriate to continue to use bespoke modelling assumptions to project the differing installation trajectories of the two sectors in Year 3 and Year 4. Both domestic and non-domestic assumptions are considered below.
15. Whilst we recognise the impact that COVID-19 had on historic installation performance, data collected throughout and following the COVID-19 period showed there was no impact on underlying attitudes towards smart meters.⁴ Remobilisation carried out following the periods of national lockdown restrictions suggested that energy suppliers were able to return to previous installation levels (or even higher) 2-3 months after lockdown restrictions were lifted. On that basis, our rollout model does not explicitly account for COVID-19 impacts. However, it is accounted for implicitly with regards to key assumptions such as our starting point, the Installation Calibration Mechanism and our treatment of attitudes data prior to the start of the Framework.

Consumer Acceptance

16. In order for an energy supplier to install a smart meter, consumers need to be willing to permit an installation. Consumers willing to permit an installation may be those that are positive about receiving a smart meter, or those that are indifferent to smart meters but are willing to accept one if offered (even some consumers in the most negative attitude category do ultimately accept a smart meter too). A given consumer's willingness to receive a smart meter is not fixed and can change over time.

Domestic

17. Smart Energy GB's Outlook survey is a large-scale survey of individuals carried out by Smart Energy GB every six months.⁵ Domestic customers who do not yet have a smart meter are asked about their current attitude to getting one. Outlook is carried out online, with an off-line boost⁶, to ensure that results are representative of all households and

⁴ There is no evidence that underlying attitudes (as measured by Seek, Accept, Indifferent, Unlikely) have changed as a result of Covid-19 with Smart Energy GB's weekly tracker (domestic), 6 monthly Outlook (domestic) and annual microbusiness tracker showing consistent (and potentially slightly positive) trends compared to the pre-pandemic period.

⁵ Smart Energy GB are a not-for-profit, government-backed, energy-supplier funded campaign helping everyone in Great Britain understand the importance of smart meters and their benefits to people and to the environment. The Smart Outlook Survey was temporarily paused in May 2020 due to COVID-19 before resuming in November 2020.

⁶ From November 2020, the offline boost was carried out via a telephone survey. Prior to this a face-to-face survey was used.

customer groups. The sample size is specified to ensure that robust estimates can be generated for key variables and breakdowns.

18. There are now 16 waves of the survey, providing a timeseries of data on domestic consumer attitudes and acceptance. We used this data as the basis for our modelling of domestic consumer acceptance for Year 1 and Year 2 of the Framework. We consider it remains appropriate to do so when modelling domestic consumer acceptance in Year 3 and Year 4.⁷
19. The Outlook survey segments non-smart consumers in the following five categories:
 - a. Seek: likely to actively seek a smart meter in the next six months.
 - b. Accept: if offered one, would accept a smart meter in the next six months.
 - c. Indifferent: have no clear view as to whether they would accept a smart meter in the next six months.
 - d. Unlikely: unlikely to take up an offer of a smart meter over the next six months.
 - e. Unaware: unaware of smart metering.
20. Awareness of smart meters amongst domestic consumers is high, with only 3% reporting they were unaware in May 2022.⁸ Whilst awareness levels are high overall, some groups of consumers are less likely to be aware of smart metering. To support engagement with these audiences, Smart Energy GB is undertaking tailored awareness-raising activities and have established partnerships with relevant community organisations. We have no evidence to suggest that, once aware, the attitudes of these consumers towards getting a smart meter would differ from existing aware non-smart consumers. Therefore, the model distributes this group proportionately between the other four attitude groups.
21. The Recontact survey, also commissioned by Smart Energy GB, indicates the proportion of domestic consumers within each of the consumer attitude categories that claim to have been successfully converted to smart during the six-month follow-up period.⁹ This data finds that, while 'seekers' are more likely to receive a smart installation than those in other categories, consumers from all other attitude categories are also converting to smart meters. This allows us to estimate half-yearly 'conversion rates' for each attitude group.
22. It is also important to note that the attitudes outlined above relate to consumers' intentions over the coming six months and that these can, and do, change over this period. For example, the most recent Recontact survey shows that after six months, 1 in 5 (19%) of those who said they were unlikely to take-up a smart meter had either had a smart meter installed, attempted to get one, or moved to a more neutral or positive attitude.¹⁰ Many current rejectors highlight resolvable concerns, such as problems with switching or poor

⁷ We have used data from both Smart Energy GB's Outlook survey (available from Smart Energy GB's [website](#)) and subsequent Recontact (unpublished) surveys.

⁸ [Smart Energy Outlook](#), November 2020 (published in March 2021)

⁹ Recontact is sampled from the Outlook survey, comprising of respondents who said they did not own a smart meter at that time. It has been running since 2017, providing a time series on how consumer attitudes change over time and is designed to collect a representative sample across key customer and demographic groups, with the sample sufficient to provide robust estimates for these groups.

¹⁰ Smart Energy GB Recontact Survey, May 2022

past experiences, as reasons for their current negative attitudes towards smart metering. Together, this information demonstrates that changes in consumer attitudes towards smart meters are taking place and can be expected to continue. Consumers' attitudes are not fixed, and therefore it would not be appropriate to assume they are static throughout the Framework period.

23. Instead, we calculate a 'boost' to consumer attitudes to reflect this. If consumer attitudes were fixed, we would expect that the attitudes of non-smart consumers would become progressively worse as those accepting a smart meter are more likely to have positive attitudes and are thus removed from the pool of eligible consumers. However, observations from the Smart Energy GB Outlook and Recontact surveys shows that the proportion of non-smart consumers who are 'seekers' does not decrease as quickly as would be expected (between some periods, there has even been an improvement prior to accounting for smart meter installations). This shows that customers do move between attitude groups, creating new 'seekers' over time, replacing some of those who have had a smart meter installed.
24. 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, consumer attitudes to smart metering have been steadily becoming more positive.

Non-domestic

25. When calculating rollout projections for the first two years of the Framework, eligible non-smart, non-domestic customers were split into the customer attitudes of 'seek', 'accept', 'indifferent' and 'unlikely' to take up based on the categories used in Smart Energy GB's Microbusiness Tracker.
26. As set out in the main consultation document, the government has since undertaken two further rounds of data collection relating to non-domestic customer attitudes, which divides non-smart customers into the same seek/accept/reject categories. This data forms the basis of our assumptions on attitudes for Year 3 and Year 4 of the Framework. This is on the basis that:
 - a. The surveys have sample sizes of 705 and 800 non-smart, non-domestic customers, weighted to the characteristics of the non-smart population to allow for inferences to the wider population.
 - b. The surveys included microbusinesses, non-microbusinesses and public sector organisations.
 - c. The surveys explore the correlation between pre-existing awareness and attitude, which helps make the modelling more accurate given higher levels of unawareness in the non-domestic sector in comparison to domestic.
27. SEGB does not undertake Recontact surveys of non-domestic customers. To estimate non-domestic conversion rates, we have therefore calibrated an average of the domestic conversion rates for each attitude group against historical non-domestic smart conversion

figures.¹¹ In other words, we assume that, on average, the extent to which consumers in the 'seek', or 'accept' attitude group are more easily converted than, consumers in the 'indifferent' and 'unlikely' groups is the same as in the domestic sector. However, historical data shows the actual conversion rate for all categories is lower in the non-domestic sector, therefore our parameters are calibrated against this historical data. This ensures that installation projections are realistic while also allowing for differential conversion rates based on attitudes in the non-domestic sector.

28. We consider the current methodology the best way to estimate non-domestic conversion with the data available. This is because:

- a. Evidence to date shows that, for those aware of smart metering, non-domestic attitudes are similar to domestic ones, and have exhibited similar trends over time. This includes the proportion of non-smart customers who would seek or accept a smart meter being maintained (or improving), despite ongoing uptake. It is reasonable to assume therefore that the extent to which consumers in the 'seek', or 'accept' attitude group are more easily converted than consumers in the 'indifferent' and 'unlikely' groups is the same as in the domestic sector, however that, overall, all groups convert at a slower rate. This assumption could be further tailored through the collection of non-domestic recontact data (equivalent to that collected for domestic customers), however:
 - i. It is not realistic (in the context of conducting research with small businesses) to secure sample sizes that would allow meaningful analysis by attitude group.
 - ii. In addition, we also do not consider it proportionate, given the range of evidence already available in this area as set out above.
- b. Calibrating conversion rates to non-domestic installation rates already ensures a high degree of prudence in the assumption, i.e., by 'capping' assumed conversion in line with past installation rates/past supplier performance we allow for the factors which make conversion more challenging in the non-domestic sector as well as allowing for factors which could have been caused by poor supplier customer journeys.

Regarding this point, there are a number of areas where improvements to the customer journey could overcome challenges which can make non-domestic conversion challenging. For example, collecting (and maximising opportunities to collect) good data on the non-domestic customers in a supplier's portfolio, transparently communicating the need for power down, what it will entail and any reassurances sufficiently in advance of installation and supporting tenants to obtain the permission of their landlord as needed (or providing them with templates or the information they need to readily obtain it). Given these factors, it would be too

¹¹ The average is calculated from Recontact data since November 2017. This is an update from the approach used for modelling the Year 1 and Year 2 rollout, when only the most recent Recontact data, rather than an average, was used. In light of the additional waves of data available to us, we consider that using an average for Year 3 and Year 4 modelling is prudent, to mitigate against the potential impact that one-off variations in domestic market circumstances will have on non-domestic conversion.

conservative to assume even lower conversion rates than under the current approach.

- c. Additionally, we have also been prudent in modelling non-domestic customer acceptance more generally by not applying the ‘consumer attitude boost’ (see paragraphs 22-23 above) in calculating the non-domestic tolerance, as we recognise that we do not have a data series equivalent to that for domestic consumers that would enable us to do so.
- d. Having already accounted for the difference in operational performance between domestic and non-domestic sectors, it is reasonable to assume that the relative rate of conversion for each attitude group is broadly consistent between domestic and non-domestic sectors.

Technical Eligibility

29. For a non-smart consumer in any attitude group to be converted to smart, they need to be technically eligible to receive a smart meter. That means their metering points need to be technologically capable of having a smart meter installed in smart mode.

Domestic and non-domestic

30. The overall proportion of consumers whose metering points are technically eligible is expected to increase over time, due to the availability of technical solutions such as the Fylingdales Communications Hub and Alt-HAN (a technological solution for households where the components of the Home Area Network (HAN) are otherwise unable to communicate). We expect around 99.3% of metering points to be technically eligible during Year 3 (2024) and Year 4 (2024) of the Targets Framework.

31. This technical eligibility series accounts for market-wide factors that are applicable to both the domestic and non-domestic sectors. The technical eligibility series is derived from milestones contained within the Smart Metering Implementation Programme’s Joint Industry Plan (JIP) and represents the best available evidence of industry wide smart meter technical eligibility.

32. The conversion rates estimated from the Recontact survey do not take into account the eligibility or ineligibility of consumers. This has an obvious impact on conversion rates, as ineligible consumers cannot be converted to smart. We therefore adjust the conversion rates for all attitude groups to account for technical eligibility.

Operational Fulfilment

33. Before being used to project the smart metering rollout in the model, these eligibility-adjusted conversion rates are adjusted again in order for them to match observed overall conversion rates from the official statistics. This is to ensure that the model does not implicitly assume a higher level of operational fulfilment than that observed in historical data. These final, adjusted conversion rates are then used to project the number of smart installations in each half year of the Framework.

Domestic

34. Evidence from the Smart Metering Implementation Programme's benchmarking work with large energy suppliers (which is shared in anonymised form with participating energy suppliers) indicates that there are currently several areas in which energy suppliers could deliver improvements to operational fulfilment, in addition to improvements demonstrated by some energy suppliers to date. For instance, through adoption of industry best practice in relation to pre-installation engagement with customers to reduce cancellations and in handling installation failures including rebooking of previously failed appointments. Such improvements would be expected to translate into increases in conversion rates from the same volume of smart metering installation appointments. We have considered and included a small improvement in operational fulfilment based on the improvement seen in the weighted average of installation completion rates (for appointments booked in Q3 2021 – Q2 2022) provided by energy suppliers to BEIS as part of their reporting on appointment outcomes. In the domestic model, this improvement amounts to an increase in conversion rates of 0.7 percentage points per half year.

Non-domestic

35. For Year 3 and Year 4, we have supplemented our analysis with data now available to us via internal monitoring to further tailor the operational fulfilment analysis for the non-domestic sector. This follows a similar methodology to that used for the domestic sector and is based on the improvement seen in non-domestic installation failure rates (installations attempted in Q4 2021 – Q3 2022) provided by energy suppliers to BEIS.

36. This tailored analysis suggests that a similar assumption on operational fulfilment to that for the domestic sector is applicable to the non-domestic sector, and that it remains appropriate to assume that energy suppliers have scope to improve their non-domestic operational fulfilment outcomes. In the non-domestic model, this improvement amounts to an increase in conversion rates of 0.9 percentage points per half year.

Operational Capacity

37. A potential constraint on energy suppliers' ability to operationally deliver on their obligations is the number of installers available.

Domestic

38. No constraint on installer numbers has been assumed in the modelling, on the basis of feedback received from energy suppliers in response to previous consultations in 2019 and 2020.¹² Indeed, several consultation responses indicated that energy suppliers themselves do not directly consider installer resource within their internal rollout projections, but instead perform an ex-post analysis to validate that their forecasted rollout rates are deliverable under scheduled resource constraints.

39. In recent bilateral meetings with domestic energy suppliers, some have reported a reduction in the size of their field force, potentially challenging this assumption. However, suppliers and other meter installers have responded to this challenge and have begun

¹² [Delivering a smart system: a Smart Meter Policy Framework post 2020](#) and [Smart meter policy framework post 2020: minimum annual targets and reporting thresholds for energy suppliers](#)

expanding their recruitment and training activities through the latter part of 2022 and this is expected to continue throughout 2023. As a result, we maintain the view that installer numbers are not a constraint on suppliers' ability to deliver against their installation targets and as such have not fundamentally changed our modelling approach with regards to operational capacity.

40. The BEIS rollout projections will continue to be used to set the tolerance levels from which individual energy suppliers' minimum requirements for annual installations will be calculated. Given previous consultation responses and stakeholder feedback that the primary constraint on the rollout is consumer demand, the BEIS rollout projections use a consumer attitude-based conversion calculation to generate installation numbers for each half year period. This means that the calculation projects installations based on consumer demand and assumes that this demand can be fulfilled.
41. An improvement in technical eligibility combined with supplier underperformance against installation requirements in Year 1 of the Framework (2022), feeds into expectations around consumer attitudes in Year 3 (2024) and Year 4 (2025). This creates a large number of non-smart customers in the model waiting to be converted to smart, generating high volumes of projected installations. If these flowed through directly to the tolerance levels without calibrating for market installation capacity, they would generate potentially unrealistic minimum annual installation requirements for energy suppliers to meet.
42. To address this, we have continued to apply a calibrating mechanism to the installation projections generated by the consumer attitude-based conversion projection. In the domestic sector, this Installation Calibration Mechanism (ICM) applies only in situations where the consumer conversion calculation projects meter installations at a rate above levels that the market has demonstrated it can successfully complete, currently and historically. In such a scenario, the ICM – rather than the conversion projection – directly sets the tolerance levels from which individual energy supplier annual installation minimum requirements will be calculated. In effect, the ICM operates as a safety net to ensure any projections generated by expected consumer demand are supported by market operational capacity, thus avoiding unrealistic minimum installation requirements based on a flow of unconstrained consumer demand.
43. It is important to note, however, that the ICM does not represent an upper limit on the operational installation capacity of the market; rather it is used in the model to ensure that the installation projections for each half year are reasonable based on proven underlying market installation capacity. The ICM should not be viewed as a restriction on energy suppliers who can install above their minimum installation requirement if their operational capacity allows them to do so. In fact, we expect energy suppliers to increase their operational capacity over time, where needed, to meet consumer demand, including through improvement (and, in some cases, expansion) in energy suppliers' smart meter installation operations.
44. If the consumer conversion projection predicts installations below the level defined in the ICM, then the conversion projection will set the tolerance levels from which individual energy supplier annual installation minimum requirements will be calculated. In the

modelling for Year 3 and Year 4 of the Framework, from H2 2024 (July – December) – H2 2025, the conversion projection rather than the ICM sets the rollout forecast.

45. The domestic ICM was originally calculated using SMETS2 installation numbers from DCC data and Elexon data on SMETS1 and traditional meter installations. It is, therefore, a total of all installation activity, not only new SMETS2 installations. It has been calculated in this way to reflect the total possible installation capacity across industry. It amounts to 2.45m installations in each half year for the domestic sector. At the time this reflected a reasonable and recent benchmark of the market’s capacity to install meters in domestic premises.
46. In our view, this remains an appropriate value for the ICM in Year 3 and Year 4 of the Framework. We note that since the COVID-19 pandemic, there has been some reduction in the installer field force headcount from pre-pandemic levels. However, we are aware that a number of suppliers and third-party installers have taken action during 2022 to recruit and train additional resource through 2023, such that we continue to consider installer numbers are not a constraint on the domestic rollout.

Figure 2: Calculation of the domestic ICM¹³

Domestic ICM calculations	
Components	Installs
1. DCC SMETS2 Installs	2.17m
2. Apportion all SMETS1 installs to domestic	0.13m
3. Scale legacy installs to domestic	0.15m
4. Total	2.45m

Non-domestic

47. For Year 1 and Year 2 of the Framework, the non-domestic Installation Calibration Mechanism was calculated using the same methodology that was used to calculate the domestic ICM, as outlined above.
48. Following a review of the evidence, we consider that this methodology risks being excessively conservative for the non-domestic sector, specifically in Year 3 and Year 4 of the Framework. Past installation rates in the non-domestic sector have been influenced by a range of factors, from supplier deprioritisation of the non-domestic rollout (see main consultation document for rationale, including proposals for amending the structure of requirements regarding non-domestic installations for mixed portfolio suppliers and scope

¹³ These components have been calculated as follows:

1. October 2020 domestic SMETS2 installation numbers taken from DCC data, scaled up to 6 months (taking into account public holidays);
2. SMETS1 installations in September 2020 taken from Elexon data, multiplied by 6 (6 monthly) and multiplied by 1.8 to scale up to dual fuel installations, then scaled to reflect the size of the domestic proportion of the market;
3. Traditional meter installations in September 2020 from Elexon data multiplied by 6 (6 monthly) and multiplied by 1.8 to scale up to dual fuel installations, then scaled to reflect the size of the domestic proportion of the market.

for improvement to a range of delivery areas across suppliers) as well as other unique factors such as historic advanced meter installation levels.

49. In addition, in Summer 2022 the government asked a range of large and small energy suppliers a series of questions about non-domestic installation capacity in the market. Answers did not suggest that current non-domestic installation levels are being impacted by concerns regarding capacity, such as the availability of specialised skillsets to deliver non-domestic installs.
50. We therefore propose to calculate the non-domestic ICM for Year 3 and Year 4 of the Framework by multiplying the average number of non-domestic installations it is possible for one installer to successfully deliver per day, by an estimate of the number of Full Time Equivalent (FTE) installers available to undertake non-domestic installations. This is then multiplied by the number of working days in a six-month period.
51. To do this, we assume that:
- a. On average, and if installation resource were allocated to non-domestic installations in any given one day, we assume that it is possible to successfully deliver three non-domestic meter installations per working day. We consider this a fairly conservative assumption that accounts for some installation failure. This is based upon data received via the Summer 2022 data collection exercise from industry cited above, quality assured by internal industry experts.
 - b. We assume that there are 210 working days in a year: 105 in a six-month period.¹⁴
 - c. We assume that the number of existing installers that could, theoretically, be allocated to non-domestic installations is 420 FTE. More detail on this assumption is set out in paragraph 54 below.
52. Overall, this methodology produces an ICM of 132,000 non-domestic installations per six-month period.
53. It should be noted that the ICM only becomes relevant in determining supplier targets when evidence suggests that demand for installations may outstrip the market's capacity to deliver them. Therefore, under the proposed new method for calculating the ICM in Year 3 and Year 4, the ICM acts to set the projected rollout level in H1 2024 (January – June). As with the domestic rollout projections, from H2 2024 – H2 2025, the conversion projection, rather than the ICM, sets the rollout forecast for those periods.
54. Our assumption regarding the number of FTE available for non-domestic installations is calculated based on Full Time Equivalent data provided to us by dedicated non-domestic meter installers and an allowance for those staff working for mixed portfolio suppliers/installation companies who are fungible across domestic and non-domestic work. We consider this to be a reasonable and conservative number based on the data available to us. We did consider whether it would be more robust to assume a larger number of 'fungible' FTEs in the market that could be dedicated to non-domestic installations, by assuming a greater proportion of available installers. For example, assuming up to 600

¹⁴ This figure is reached by taking the number of weekdays in the year (260), and removing 50 days for bank holidays, paid leave, training and sickness.

FTEs available to dedicate to non-domestic installation resource. Making a less conservative assumption would have the effect of increasing non-domestic installation requirements and, therefore, of driving greater ambition for the minimum level of smart coverage reached by 2025. We invite stakeholder views on this assumption.

Tolerance Levels

55. The methodology described in the preceding section allows us to calculate an industry-wide forecast of annual installation numbers. This is used to calculate tolerance levels for all energy suppliers. The calculation of individual suppliers' tolerance levels is operated as follows:

- a. A straight line is drawn from the estimated industry-wide smart coverage at the beginning of the Targets Framework on 1 January 2022 up to 100% coverage at the end of the Framework on 31 December 2025.
- b. The industry-wide minimum installation forecast, as calculated by the model described above, is then subtracted from the line to 100% coverage, resulting in percentage tolerance levels in each year of the Framework. These tolerance levels are separate for the domestic and non-domestic sector.
- c. These percentage tolerance levels are applied to individual suppliers in each year, subtracting them from that individual supplier's line to 100% coverage. For mixed portfolio suppliers, operating in both the domestic and the non-domestic energy market, the relevant tolerance level (domestic or non-domestic) is applied to their domestic and non-domestic customer bases when calculating their minimum installation requirement.
- d. At the end of each year, the line to 100% coverage is redrawn for each supplier, with the subsequent year's tolerance level applied to the newly drawn line. In the non-domestic sector the new line is also adjusted to take into account the effect of smart meter churn on installation targets in Year 3 of the Framework, as is further described in Part Two of this Annex and in the main consultation document.

Starting Point

56. A key variable in determining the tolerances is the assumed smart coverage at the start of the relevant Framework period. For tolerance levels for Year 3 and Year 4, this would be coverage as of end of December 2023.

57. Data from Official Statistics on the number of smart meters operated (as of 31 December 2021) has been used to measure smart coverage to the end of 2021.

58. For 2022 (Year 1 of the Framework) the following steps have been taken to estimate the growth in smart meter coverage:

-
- a. Supplier level data on qualifying smart meter installations from official statistics has been used, where available, to measure installations in Q1-Q3 2022.¹⁵
 - b. The installation rates over the period from Q1-Q3 2022 have then been assumed as continuing into Q4 2022. This gives us a figure for total installations by large suppliers in 2022.
 - c. We then estimate the number of installations by small suppliers using the observed ratio of installations between large and small suppliers from historic end-of-year official statistics. This gives us an estimate for qualifying smart meter installations in 2022.
 - d. We have also used data from administrative sources including the DCC and ElectraLink to validate these projections against installation numbers in more recent periods in 2022; these show that the installation figures are similar to the projections, indicating they are suitably robust.
 - e. In the government response to this consultation this starting point will be updated to reflect the data in end-of-year official statistics on smart meter installations. The official statistics to the end of December 2022 will be published in March 2023.

59. We have used individual suppliers' performance in Year 1 of the Targets Framework (arrived at using the calculations described in paragraph 58), to calculate their expected minimum installation requirements for Year 2 of the Framework. We have then assumed that all suppliers will meet these Year 2 installation requirements, giving us an estimate for the smart coverage at the end of Year 2 (2023), and the start of Year 3 (2024) of the Framework.

60. The modelling discussed in this Annex results in the smart penetration and tolerance levels shown in **Table 1**.

¹⁵ 'Qualifying' refers to smart meters installed to replace traditional meters or in new connections, it does not include smart for smart replacements.

Table 1: Smart coverage and tolerance levels for Year 3 and Year 4 (domestic and non-domestic rollouts)

Rollout	Position at year end	Year 2	Year 3	Year 4
		(Starting Point)		
		December 2023	December 2024	December 2025
Domestic	Target (Straight line to 100%)		82.1%	100%
	Minimum Smart Penetration	64.7%	73.4%	80.2%
	TOLERANCE		8.7%	19.8%
Non-Domestic	Target (Straight line to 100%)		79.9%	100%
	Minimum Smart Penetration	60.1%	67.4%	73.0%
	TOLERANCE		12.5%	27.0%

Part Two: Other proposals

61. Part Two of this Annex summarises the two further proposals that we are making in relation to the target setting methodology as part of this consultation. Full details of the proposals are provided in the main consultation document. Neither of these other proposals change the fundamentals of the modelling approach, however, they may have some impact on suppliers' final minimum installation requirements, as set out below.

Adjustment to the structure of installation requirements: separate domestic and non-domestic targets

62. 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. As set out above, separate domestic and non-domestic tolerance levels are applied to the relevant section of mixed suppliers' portfolios to reflect the different circumstances between the two sectors. However, these suppliers currently have the flexibility to meet their requirement through any combination of domestic and non-domestic installations.

63. We are proposing to remove this flexibility in Year 3 and Year 4 of the Framework, so that mixed portfolio suppliers will now be required to meet both the domestic and the non-domestic components of their installation requirements. This proposal is made as we have seen growing evidence that mixed portfolio suppliers are deprioritising their non-domestic rollouts and that this is posing a risk to benefits realisation for small businesses and public sector consumers (for further details see Section One of the main consultation document).

64. This proposed alteration to the structure of suppliers' requirements regarding domestic and non-domestic installations does not affect the modelling approach applied to calculate the domestic and non-domestic tolerance levels. As suppliers' installation requirements are already set on the basis of the domestic and non-domestic components of their portfolios, and as we are not creating any materially different obligations beyond those already in place in Framework Year 1 and Year 2, we do not expect the proposed amendments to have a material impact on any of the assumptions used within the BEIS rollout model. When calculating their separate domestic and non-domestic installation requirements, suppliers will apply each tolerance level to the relevant section of their portfolio, as they have done when calculating their single combined minimum installation requirement for Year 1 and Year 2 of the Framework.

Smart Meter 'churn adjustment' proposals

65. The final proposal relates to a partial extension of the adjustment to the target calculation to mitigate the impact of customers switching supplier ('churn'). Some respondents to the November 2020 consultation highlighted the effect that churn of consumers between different suppliers might have on suppliers' ability to meet their installation targets. In particular, these respondents were concerned that suppliers who were further ahead with their smart meter rollout (compared to the industry-wide average) will on average lose more smart meter customers to churn than they will gain. They then argued that if annual

installation requirements fail to account for this, there could be perverse consequences, with energy suppliers who are further ahead in the rollout being effectively penalised within the Framework.

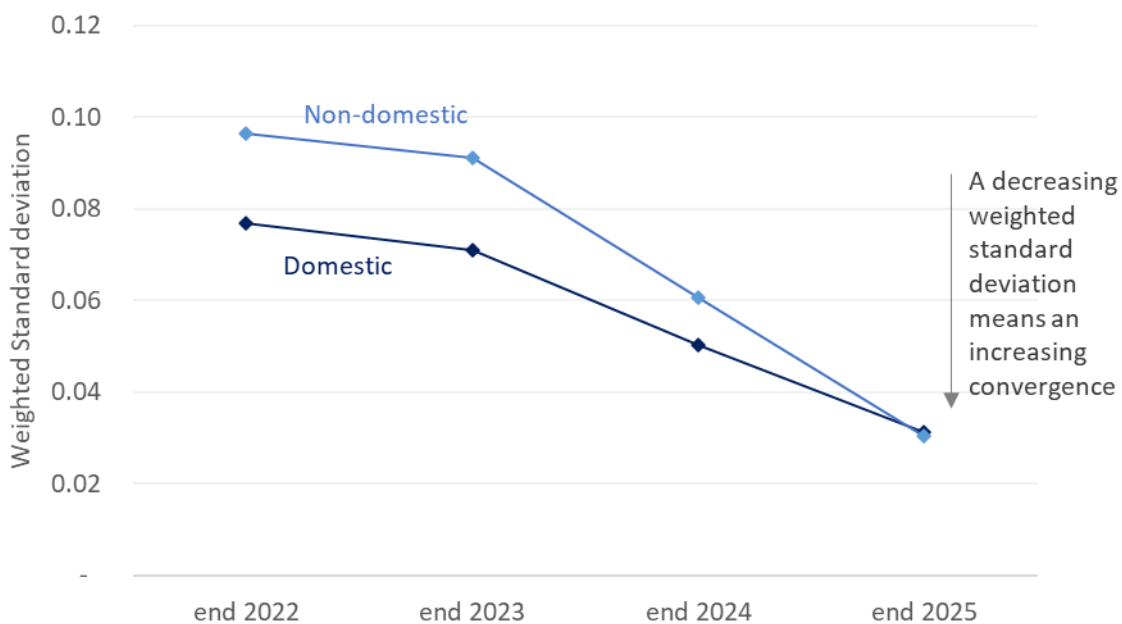
66. In May 2022, following consultation, the government confirmed the implementation of an adjustment to mitigate the impact of customer-driven smart churn on energy suppliers' minimum installation requirements for the second year of the Targets Framework. This adjustment to Year 2 installation requirements was designed to mitigate the impact of smart meter customers switching their energy supplier during the previous year (2022).¹⁶ This modification defined supplier installation requirements for Year 2 of the Targets Framework as the minimum of: i) their targets with the churn adjustment applied; and ii) their targets without the churn adjustment applied.
67. This adjustment for Year 2 of the Framework was implemented in order to prevent the potential unfairness that could arise for suppliers who are ahead of market average smart coverage. Suppliers who are ahead of market average smart coverage will, all other things being equal, be more likely to lose rather than gain smart meter customers through churn. This is because while these energy suppliers are likely to lose smart meter customers in proportion to their coverage levels, they will likely only regain them at the market average (i.e., a lower) smart coverage rate. The reverse is true in relation to traditional meter customers. Suppliers ahead of market average will be more likely to gain a larger proportion of traditional meter customers than they lose through churn. A net gain of traditional meter customers will then lead to higher installation requirements in the subsequent rollout year.
68. When confirming this adjustment, we noted that the adjustment would apply for Year 2 (2023) of the Targets Framework only. Further, we noted that as the rollout progresses and market average smart penetration increases, we would expect the need for an adjustment to mitigate the impact of churn will diminish. This is because as the rollout progresses under the Targets Framework, a higher proportion of customers will have smart meters and differences in smart penetration between suppliers will reduce. The potential unfairness experienced by suppliers ahead of market average as a result of churn will, therefore, also reduce to the point at which an adjustment is no longer required or justified.
69. As part of the Mid-Point Review, we have considered the latest evidence on rollout progress and particularly the variation in levels of smart coverage between energy suppliers. Using data reported to BEIS by large energy suppliers, we have produced projections of the level of convergence in smart coverage that we expect to remain at the end of Year 2 of the Framework (2023) for domestic and non-domestic suppliers. **Figure 3** below shows a visualisation of these levels of convergence. Convergence is measured by a weighted standard deviation between suppliers' proportion smart at the end of each year, with weights proportional to suppliers' total number of meters operated. The smaller the weighted standard deviation, the closer the convergence, the less potential impact churn will have on a supplier's proportion smart. Using a weighted measure means that larger suppliers have a bigger impact on the amount of variability which is used to indicate convergence. The data points for the end of 2022 are based on supplier statistical returns

¹⁶ [Smart meter targets framework: government response to a consultation on a churn adjustment](#)

to BEIS (see paragraph 56-59). Those for the end of 2023, 2024 and 2025 are based on individual energy suppliers meeting their projected minimum installation requirements. The lines show the change in variability from the (weighted) market average over time; with smaller standard deviation (variability) corresponding to greater convergence in levels of smart coverage.

70. As we can see from **Figure 3** below, by the end of 2023 we expect a greater level of convergence in the domestic sector than in the non-domestic sector, with the level of divergence in the non-domestic sector remaining material. However, by the end of 2024 further convergence will have taken place in both the domestic and non-domestic sectors.

Figure 3: Modelled convergence in the domestic and non-domestic sectors



71. Based on this analysis we are proposing to extend the Year 2 (2023) churn adjustment in relation to non-domestic installation requirements in Year 3 (2024) of the Framework. Given the higher level of convergence in the domestic sector we do not consider that any extension of the Year 2 adjustment is justified in relation to domestic installation requirements. 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.

72. The effect of the proposed churn adjustment, by preventing an increase in installation requirements for suppliers as a result of a net loss of smart meters (losing more smart customers than are gained), is to reduce market aggregate installation requirements in proportion to the volume of churn that is adjusted for. To assess the likely impact of the proposed partial extension of the churn adjustment, we calculated possible impacts based on historic minimum and high churn levels within the non-domestic sector. This is set out in **Table 2** below. This analysis shows that we would expect the proposed partial extension of the churn adjustment to have a limited impact on market aggregate installation requirements overall.

Table 2: Potential change in aggregate installation requirements as a result of the application of a churn adjustment to non-domestic targets in Year 3

	Year 3 (2024)	
	Low churn scenario (13.5%)	High churn scenario (25%)
Change in <u>market-wide</u> aggregate non-domestic installation requirements	-10.4k	-19.3k

Model Disclosure

Instructions for access

73. We will disclose the BEIS rollout model to licensed gas and electricity suppliers (and organisations representing them). We consider that the model and main assumptions have been described in sufficient detail in this document for the benefit of other stakeholders.
74. The disclosed information (“Disclosed Data”) will include a description of the assumptions underpinning the policy proposals and references to the data used in the model but will exclude any references to data about individual licence-holders which is commercially sensitive, and which cannot be disclosed to other licence-holders.
75. Energy suppliers (or organisations representing them) wishing to access the Disclosed Data should contact BEIS by sending an email to **smartmetering@beis.gov.uk** including:
- i. the name and address of the licensed energy company (“the Recipient Organisation”);
 - ii. the name, role and contact details (email address) for the individual to be granted access to the Disclosed Data (“the Individual Recipient”) - we will accept a maximum of two contacts per company.
76. Access to the Disclosed Data will be via an email to the Individual Recipient(s). The email will contain a link to a SharePoint workspace with the relevant information.
77. Access to the Disclosed Data is provided for the “Permitted Purpose” that is the sole purpose of responding directly to BEIS on the consultation and for any related legal proceedings.
78. This Disclosed Data should be treated as confidential. Onward disclosure of any downloaded copies must be limited to individuals within the Recipient Organisation, and to external advisers or agents of the Recipient Organisation, in all cases solely for the Permitted Purpose. The Disclosed Data must not be disclosed to any other person (unless required by law or court order or with the prior agreement of BEIS). All copies of the Disclosed Data must be deleted once they are no longer required for the Permitted Purpose (unless required to be retained for compliance with any applicable law, regulatory body or court order).
79. During the consultation process we will also operate a separate email address **SmartMeterModelling@beis.gov.uk** where energy suppliers with access to the Disclosed Data can address any question they may have about the functionality of the model, including clarification of formulae or definitions. To the extent that any questions seek to challenge, test or dispute the validity of the assumptions and/or evidence used in the model, those aspects will not be answered at this stage as we would expect that any specific challenge to the assumptions and evidence will be included as part of the overall response to consultation.

80. We will endeavour to answer requests for access and subsequent queries within two working days if received on or before 17 March 2023.

81. Please note that any access to the Disclosed Data will be withdrawn on 22 March 2023 after this consultation has closed. The analytical support availability will also end on that date.

This consultation is available from: www.gov.uk/beis

If you need a version of this document in a more accessible format, please email enquiries@beis.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.