Department for
Business, Energy
& Industrial Strategy

SMART METER POLICY FRAMEWORK POST 2020 CONSULTATION

Annex 5: Impact Assessment

September 2019

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Contents

Title: Post-2020 smart meter rollout **IA No:** BEIS016(C)-19-SMIP **Lead department or agency:** Department for Business, Energy and Industrial Strategy **Other departments or agencies:** None	**Impact Assessment (IA)** **Date: 02/09/2019** **Stage: Development/Options** **Source of intervention: Domestic** **Type of measure: Secondary legislation** **Contact for enquiries:** eoin.devane@beis.gov.uk
Summary: Intervention and Options	**RPC Opinion:** Not Applicable

Cost of Preferred (or more likely) Option (in 2016 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status**
£1,661m	£380m	-£33.6m	Qualifying provision

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

Under the current smart meters regulatory framework, energy suppliers have an obligation to take "all reasonable steps" to install smart meters in all premises by the end of 2020. This will deliver c.30 million smart meter installations and build a strong foundation for an enduring smart system. However, it is clear that smart meter installations will need to continue after the end of 2020. Government therefore recognises that industry needs clarity and certainty on the smart meter policy landscape post 2020 in order to ensure that the programme maintains its momentum beyond this date. This is consistent with the National Audit Office's recommendation and a commitment made by the Energy Minister to the BEIS Select Committee in January 2019.

What are the policy objectives and the intended effects?

Through engagement with energy suppliers, Ofgem, and Citizens Advice, we have identified four key design principles for the policy framework beyond 2020:

- To encourage consumers to benefit from the rollout of smart meters, including how to use the data from their smart meters;
- To deliver a market-wide rollout of smart meters as soon as possible, that ensures value for money and maintains installation quality so that consumers can derive maximum benefit and have a good experience;
- To normalise smart meters so they are the default meter used in Great Britain; and
- To give certainty to the whole sector to invest and plan, ahead of and beyond 2020.

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

Our proposed approach establishes annual milestones during a period of four years (from 1 January 2021 to 31 December 2024) for each energy supplier based on a straight-line delivery trajectory towards the overall ambition of market-wide rollout. This methodology takes account of both the starting position of individual energy suppliers as of 31 December 2020 and their performance thereafter in increasing their smart meter coverage. The milestones will take account of meter churn to enable energy suppliers to take credit for each smart meter installation they deliver within a given year, regardless of whether the consumer remains with the energy supplier. Suppliers will then be required to meet these milestones, within a tolerance that grows linearly to 15% of their total customer-base. An alternative has been considered whereby the end of the monitoring framework period is 2023 instead of 2024. We have also considered the situation without regulation – in that case, energy suppliers would only be required to install smart meters on new metering points and for meter replacements, which would deliver substantially lower smart meter coverage. This risks a large portion of the estimated benefits of smart metering and jeopardises the transition to a smart energy system.

Will the policy be reviewed? It **will** be reviewed. **If applicable, set review date: 01/2021**				
Does implementation go beyond minimum EU requirements?		Yes		
Is this measure likely to impact on trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** -1.6	**Non-traded:** -4.6	

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: 02/09/2019

Summary: Analysis & Evidence

Policy Option 1

Description: Main policy scenario – linear milestones towards market-wide smart meter coverage by end of 2024

FULL ECONOMIC ASSESSMENT

Price Base Year 2011	PV Base Year 2019	Time Period Years 14	Net Benefit (Present Value (PV)) (£m)		
			Low: +1,171	**High:** +1,832	**Best Estimate:** +1,650

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant	Total Cost (Present Value)
Low	3	One-off	72	**1,026**
High	4		109	**1,533**
Best Estimate	4		101	**1,413**

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. Each of these areas makes up around half of the total cost. These costs are likely to be passed through to consumers eventually through impacts on energy bills.

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

Consumers will also incur a non-monetised cost relating to the time that they will need to stay at home in order to be in for the installation visit. A typical installation will take less than two hours to complete.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant	Total Benefit (Present Value)
Low	0	One-off	157	**2,197**
High	0		240	**3,366**
Best Estimate	0		219	**3,063**

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 quarter 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 are a vital upgrade to our national energy infrastructure and are central to a smarter, more flexible, and more resilient energy system. 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. Empowering consumers to shift their electricity use away from peak times will be critical to the future of our energy system, reducing the need for costly network reinforcement and investment in additional peak generation.

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

This Impact Assessment is based on the latest Cost-Benefit Analysis model, which is being published alongside this consultation. Therefore, this analysis is based on the most up-to-date picture that we have of the Programme's costs and benefits, and we have confidence that it reflects the best current understanding of the context in which the decision is being made.

BUSINESS ASSESSMENT (Option 1) – calculated in 2016 prices, 2017 present values as per the BIT calculator

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 118.1	**Benefits:** 151.7	**Net:** -33.6	BIT score of -168.2

Summary: Analysis & Evidence

Policy Option 2

Description: Alternative policy scenario – linear milestones towards market-wide smart meter coverage by end of 2023

FULL ECONOMIC ASSESSMENT

Price Base Year 2011	PV Base Year 2019	Time Period Years 14	Net Benefit (Present Value (PV)) (£m)		
			Low: +1,272	**High:** +1,876	**Best Estimate:** +1,660

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant	Total Cost (Present Value)
Low	3	One-off	80	**1,122**
High	4		111	**1,559**
Best Estimate	4		101	**1,423**

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. Each of these areas makes up around half of the total cost. These costs are likely to be passed through to consumers eventually through impacts on energy bills.

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

Consumers will also incur a non-monetised cost relating to the time that they will need to stay at home in order to be in for the installation visit. A typical installation will take less than two hours to complete. A small number of suppliers may incur additional costs to deliver installations faster than currently forecast. There may also be unquantified costs for suppliers in dealing with any unforeseen challenges in the latter stages of the rollout, which would be more likely to have an impact under this scenario's more ambitious deadline.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant	Total Benefit (Present Value)
Low	0	One-off	171	**2,395**
High	0		245	**3,435**
Best Estimate	0		220	**3,083**

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 quarter 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 are a vital upgrade to our national energy infrastructure and are central to a smarter, more flexible, and more resilient energy system. 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. Empowering consumers to shift their electricity use away from peak times will be critical to the future of our energy system, reducing the need for costly network reinforcement and investment in additional peak generation.

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

This Impact Assessment is based on the latest Cost-Benefit Analysis model, which is being published alongside this consultation. Therefore, this analysis is based on the most up-to-date picture that we have of the Programme's costs and benefits, and we have confidence that it reflects the best current understanding of the context in which the decision is being made. The shorter timescales associated with this option would require some suppliers to substantially increase forecast installation rates, introducing delivery risks.

BUSINESS ASSESSMENT (Option 2) – calculated in 2016 prices, 2017 present values as per the BIT calculator

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 118.9	**Benefits:** 152.7	**Net:** -33.8	BIT score of -169.0

Evidence Base

Background

Problem under consideration

The development of a smart energy system delivering secure, cheap, and clean energy is an important part of the Government's Industrial Strategy. As our Clean Growth Strategy highlights, smart technologies and services will play a key role in decarbonising the energy sector, supporting the long-term target of net zero greenhouse gas emissions by 2050.

The Government is committed to ensuring that the energy system will continue to provide secure, reliable, and affordable energy. However, the low-carbon transition will mean some profound changes in the way this energy is delivered. This transformation will be driven by new business models and innovative products and services, enabled by the deployment of smart meters, smart appliances, and digitalisation.

Smart meters are a vital upgrade to our national energy infrastructure and are central to a smarter, more flexible, and more resilient energy system, which is why the Government is committed to all homes and small businesses being offered smart meters by the end of 2020. Smart meters are the next generation of gas and electricity meters. They offer a range of intelligent functions and provide consumers with more accurate information, bringing an end to estimated billing. They give consumers near real-time information on their energy consumption to help them control and manage their energy use, save money, and reduce carbon emissions.

Smart meters enable energy suppliers to offer innovative new tariffs, including smart tariffs which charge consumers different prices for electricity at different times of the day. Empowering consumers to shift their electricity use away from peak times will be critical to the future of our energy system, reducing the need for costly reinforcement of energy networks and the need for investment in additional peak generation capacity. This will allow consumers to use energy when it is cheaper or when there is surplus renewable electricity on the system.

Energy suppliers are currently under a legal obligation to take "all reasonable steps" to install smart meters in all premises by the end of 2020. This obligation has delivered huge investment across the energy sector to design and deliver a national interoperable metering infrastructure. Millions of people across Great Britain are already benefitting from smart meters, and many more are expected to do so before the end of 2020.

Rationale for intervention

The existing obligation will expire on 31 December 2020. After this date, the New and Replacement Obligation means that energy suppliers will only be required to install smart meters at new metering points and for meter replacements (subject to all reasonable steps). Only making these installations would lead to a substantial slowdown in the current smart meter installation rate. Any installations beyond this minimum would be optional, meaning that we could not be confident that the momentum of the rollout will be maintained beyond the end of 2020. This would delay the point at which a market-wide smart meter rollout is reached, putting at risk the delivery of the benefits of a smarter energy system to industry, society, and consumers. In November 2018, the National Audit Office recommended that the Department clarify the post-2020 policy landscape during 2019.

Government recognises that industry needs clarity and certainty on the policy landscape post-2020 in order to enable energy suppliers to adequately plan for the delivery that will be required. The Energy Minister confirmed at the BEIS Select Committee in January 2019 that Government would provide clarity during 2019 on its plans for future smart meter rollout obligations.

Policy objective

Through engagement with energy suppliers, Ofgem, and Citizens Advice, we have identified four key design principles for the policy framework beyond 2020:

- To encourage consumers to benefit from the rollout of smart meters, including how to use the data from their smart meters;
- To deliver a market-wide rollout of smart meters as soon as possible, that ensures value for money and maintains installation quality so that consumers can derive maximum benefit and have a good experience;
- To normalise smart meters so they are the default meter used in Great Britain; and
- To give certainty to the whole sector to invest and plan, ahead of and beyond 2020.

Description of options considered

This Impact Assessment considers two options for maintaining rollout momentum post 2020, along with a status quo counterfactual scenario against which these are compared[1].

Status quo counterfactual scenario

In this Impact Assessment, we compare two policy options against the status quo counterfactual scenario. This is the scenario that we expect to prevail if no additional regulation is implemented. Under the status quo, the only energy supplier obligation that would apply to energy suppliers' installation of smart meters from 1 January 2021 is the *New and Replacement Obligation (NRO).* This mandates that energy suppliers must (subject to all reasonable steps) use smart meters for all new metering points and all meters requiring replacement. The status quo counterfactual scenario thus assumes that only these installations take place post 2020[2], resulting in a substantially lower level of smart meter coverage at the end of 2024.

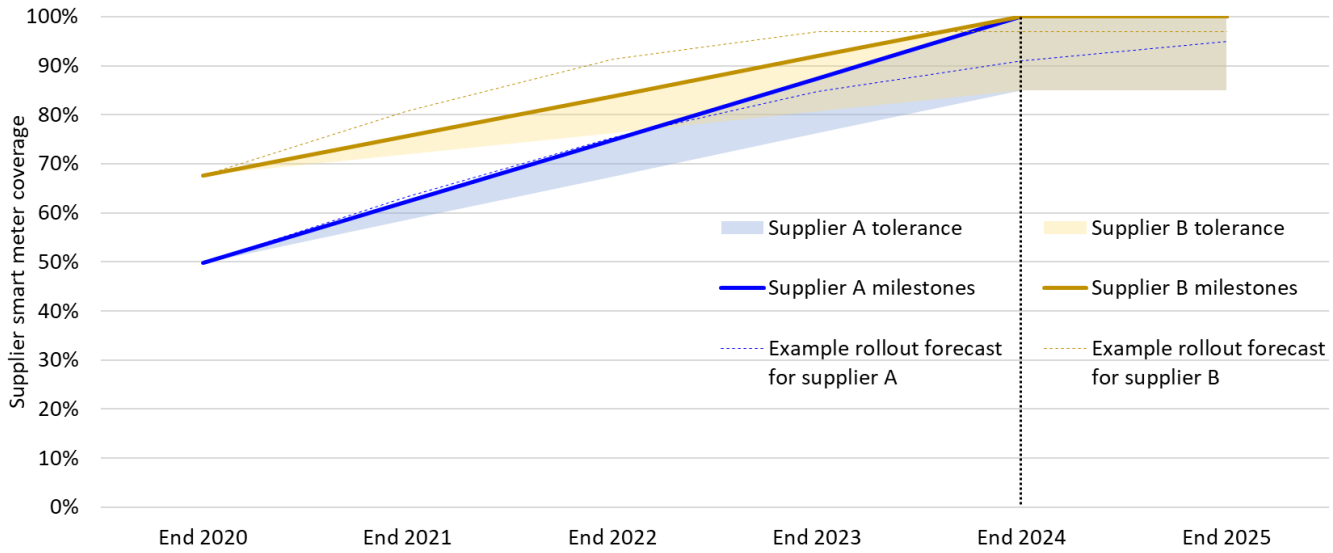
Main policy scenario [Policy option 1]

Our preferred policy option is to specify milestones for the number of smart meter installations that each energy supplier will be required to make in each year between the beginning of 2021 and the end of 2024. These milestones will be based on the linear profile, from each energy supplier's known percentage coverage at the end of 2020, to the end of the monitoring framework period at the end of 2024 (and towards market-wide coverage). Energy suppliers would have to meet these installation requirements within a tolerance allowance, which would ensure that suitably high coverage levels are achieved while also accounting for challenges which might limit energy suppliers' ability to deliver the required smart meter coverage. In recognition of the expectation that installations are likely to become more difficult later in the rollout (for example, due to decreasing installation density or the need to access restricted premises), this tolerance will grow linearly so that the maximum allowance (15% of each energy supplier's total customer base) is available only in the final year. This approach is illustrated for two example energy suppliers in the graph below:

[1] The alternative option of extending the "all reasonable steps" requirement would not be certain to deliver significant numbers of smart meter installations above the status quo counterfactual levels. For this reason, we haven't separately assessed the impact of this option, but it is clear that it would offer substantially lower benefit than either of the policy scenarios addressed within this analysis.

[2] Whilst the technology had been available for several years prior to Government intervention, very few smart meters had been rolled out to domestic customers prior to the announcement of the existing mandate. Furthermore, in a deregulated and competitive supply market such as Great Britain, there is reduced commercial incentive for energy suppliers to voluntarily install smart meters due to the high risk of losing a major part of their value if consumers switch to a different energy supplier. It is therefore reasonable to assume that, in the counterfactual, smart meter installations would be unlikely to take place in large volumes above those required under the NRO.

Graph 1: Illustration of bespoke milestones and tolerance zones for each supplier



The choice of the four-year monitoring framework period from 2021 to 2024 and the overall 15% tolerance level were based on an analysis of energy suppliers' existing installation rates and the impact that a variety of factors might be expected to have on these going forward. The milestones and tolerance allowances will be reset at the start of each year to account for meters gained and lost on churn. Each reassessment will be based on the same principle as illustrated above – namely milestones will be set based on the linear coverage profiles required towards market-wide coverage by the end of 2024.

Alternative policy scenario [Policy option 2]

The main policy scenario described above is based on ensuring energy suppliers maintain momentum in order to achieve market-wide coverage within a specified time period. As an alternative, we are also considering a more ambitious option whereby the same approach as described above is applied, but reducing the monitoring framework period to three years – from 2021 to 2023 – instead. This means that energy suppliers' individual milestones will be higher in each year, potentially stimulating more innovative and ambitious energy supplier activities.

It should be noted that all three scenarios assume that in 2025 and beyond, the only installations that will be carried out will be driven by the *New and Replacement Obligation*.

Cost-benefit analysis

Rollout forecast methodology

In order to estimate the costs and benefits of the policy options described above, we model the smart meter coverage that each option would deliver and then calculate the levels of costs and benefits that this would be expected to yield compared to the counterfactual. This section describes how these coverage projections are determined.

Main policy scenario

We expect this policy intervention to incentivise energy suppliers to continue to deliver the smart meter rollout towards market-wide coverage, with a required minimum level of coverage of 85% at the end of 2024. Our central assumption is that energy suppliers will be driven to achieve the levels that we expect to be possible based on their current performance levels (moderated by various factors that we expect to impact productivity levels).

To form our central rollout forecast, we have used the installation rates that the 13 large energy suppliers[3] themselves have forecast for 2019 and 2020 in their rollout plans (as submitted to Ofgem in 2019) as their baseline installation rates. We have then produced installation forecasts for each quarter from 2021 onwards by adjusting these baseline installation rates for four key factors[4]:

1. The introduction of technologies such as dual-band communications hubs and Alt HAN will open up smart metering eligibility to a broader spectrum of metering points. This should increase the number of installations that energy suppliers can carry out, subject to having sufficient installer numbers. The timelines for the introduction of these solutions are based on the Joint Industry Plan[5].

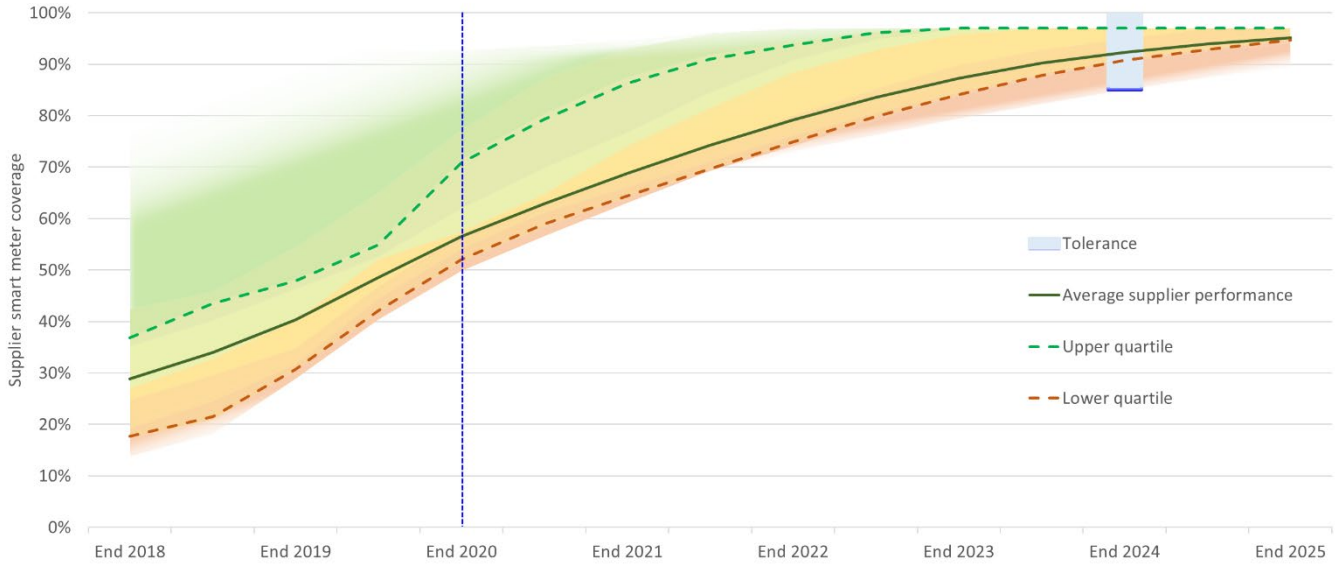
2. As eligibility increases, installation point density will increase and thus installer efficiency (utilisation of time for installation rather than for travelling between locations) will increase. By contrast, as the rollout progresses further and fewer metering points remain, this efficiency will decrease and fewer installations will be possible.

3. Towards the later stages of the rollout, energy suppliers are likely to encounter more challenging premises and less enthusiastic customers. This is likely to negatively impact productivity and installer utilisation.

4. It may not be economically viable for energy suppliers to maintain their current installer field force on an ongoing basis. Instead, installer numbers might be expected to remain static for only a short period[6], before beginning to decrease and thereby reducing feasible installation rates.

We produce these forecasts on a supplier-by-supplier basis, taking individual energy supplier starting coverage levels and other data into account where possible. This generates a range of energy supplier installation forecasts as indicated by the shaded region in the following chart:

Graph 2: Range of energy supplier smart meter coverage projections



Under this policy option, these rollout forecasts show that six of the thirteen large energy suppliers are expected to be able to reach full market-wide coverage[7], while the remaining seven will be able to achieve the required minimum coverage level of 85%. Across this range of outcomes, the overall

[3] As at 1st April 2018.
[4] These factors are based on lessons learned regarding influences on the rollout to date, as well as expectations for the period beyond 2020.
[5] We assume that dual-band communications hubs become widely available during the latter half of 2019, extending technical eligibility to an additional 25% of premises. We then assume that an Alt HAN solution becomes available in the third quarter of 2020, providing an additional 5% eligibility increase.
[6] Installer numbers are assumed to be maintained until 2022.
[7] Market-wide coverage is represented as 97% within our modelling

average smart meter coverage level at the end of 2024 is forecast to be 92%, which is well above the minimum requirement for the end of the monitoring framework period.

Alternative policy scenario

Under the alternative policy scenario, our modelling above suggests that around a quarter of energy suppliers would need to significantly increase installation rates to be able to meet the minimum coverage requirement allowed at the end of 2023. To model the impact of this policy scenario, we have assumed that these increases can be delivered, while for all other energy suppliers we have used their forecast installation numbers as modelled for the main policy scenario. However, requiring substantial installation rate increases could entail significant delivery risks and may lead to additional costs to realise.

Status quo counterfactual scenario

Installations under the *New and Replacement Obligation* from 1 January 2021 are forecast as follows:

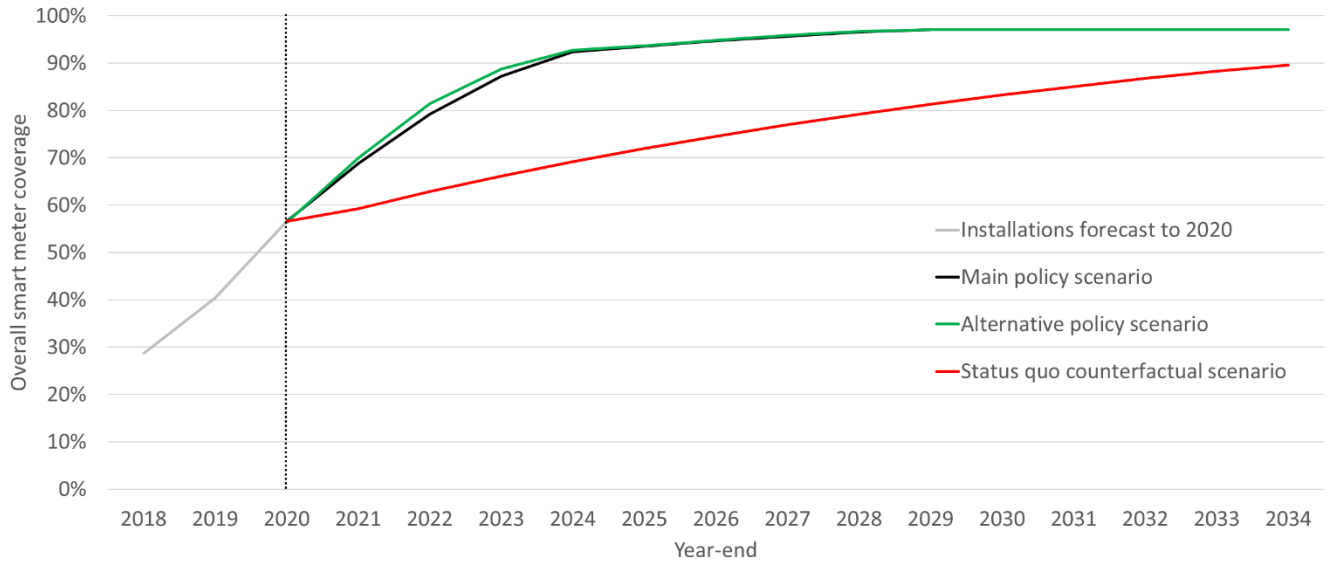
- The number of new metering points is projected based on household growth forecasts, consistent with the approach taken in the 2019 Smart Metering Cost-Benefit Analysis. These will all receive a smart installation.
- Meters require replacement around every 15 years, meaning that each year around 7% 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.

These installation rates are also used for the two policy scenarios beyond the end of 2024.

Comparison of scenario rollout forecasts

The forecast overall smart meter coverage levels under each of the three scenarios considered are shown on the following chart:

Graph 3: Overall smart meter coverage under policy options considered



This shows that the main policy scenario helps to maintain the rollout's momentum post 2020, whereas in the status quo counterfactual this momentum would be lost and installation rates would be substantially reduced. By the end of 2024, smart meter coverage under the main policy scenario will be around twenty percentage points higher than under the status quo counterfactual. After 2024, all scenarios install only those meters required under the *New and Replacement Obligation*, so the gap between coverage levels begins to narrow, although the status quo counterfactual scenario remains almost ten percentage points lower at the end of the appraisal period (2034). Coverage under the counterfactual would catch-up with that under the policy scenarios in 2042. Until this point, the policy options would deliver higher annual benefits than the counterfactual.

Furthermore, the chart shows that the alternative policy scenario delivers only a slight increase in installations. Consequently, we will see that this scenario delivers only a relatively small additional increase in net benefit. This is because our forecasts for the installation rates of the majority of energy suppliers are unchanged between the two policy options. If, by contrast, energy suppliers were to only aim to meet the minimum tolerance requirement in each scenario, the gap between the two scenarios would increase, leading to a larger net benefit gap – we will see this in the lower estimates of net benefit that we consider later. However, this alternative policy scenario would reduce the leeway for energy suppliers to account for any unforeseen delivery challenges and risks in the latter stages of the rollout, and overcoming these may entail additional unquantified costs.

Evaluation of costs and benefits

In order to evaluate the impact that these differences in rollout rate would have on the overall costs and benefits of smart metering, we use the methodology and values for quantifying costs and benefits from the 2019 Smart Metering Cost-Benefit Analysis[8]. This is a fully quality assured analysis of the programme's costs and benefits, which is being published alongside this consultation. This model considers the following costs and benefits:

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

These costs and benefits were all calculated based on a range of evidence, including data provided by energy suppliers, international comparisons, and research commissioned by the Programme. 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. The present analysis determines the difference in the net present value (total benefits minus total costs) that arises within this model when the rollout of smart meters follows the various profiles shown in Graph 3 above. These differences are appraised over the period from 2013 to 2034 using a 2019 present value base year and 2011 prices, consistent with the approach used in the 2019 Cost-Benefit Analysis. Since the policy options would be implemented in 2021 (and installation levels are the same in all years prior to this across all scenarios considered), this corresponds to fourteen appraisal years (2021-34).

As previously described, our central impact estimates assume that the policy interventions provide sufficient impetus to enable energy suppliers to continue their existing installation momentum (subject to the factors described in the "Rollout forecast methodology" section). The net present value shown in the cost-benefit model under the resulting smart meter rollout profile for each policy scenario will then be compared against that for the status quo counterfactual scenario to estimate the impact delivered by that policy option. We can also form natural upper and lower estimates by supposing instead:

- For the upper estimate, that energy suppliers modulate their installation rates to attempt to deliver full market-wide coverage by the end of the monitoring framework period.
- For the lower estimate, that energy suppliers modulate their installation rates to attempt to deliver only the minimum coverage level permitted by the tolerance at the end of the monitoring framework period.

[8] https://www.gov.uk/government/publications/smart-meter-roll-out-cost-benefit-analysis-2019

Analysis results

Comparing the overall Programme net present value under each of the two policy scenarios described above against the status quo counterfactual scenario yields the following results:

Scenario	Net benefit compared with status quo counterfactual
Main policy scenario	+£1,650m
Alternative policy scenario	+£1,660m

As described above, we can also form natural upper and lower net benefit estimates. These give the following net benefit ranges:

Scenario	Upper net benefit estimate (vs. status quo)	Lower net benefit estimate (vs. status quo)
Main policy scenario	+£1,832m	+£1,171m
Alternative policy scenario	+£1,876m	+£1,272m

Direct costs and benefits to business

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

Main policy scenario

Cost of Option (2016 prices, 2017 present value)			
Total Net Present Social Value	**Business Net Present Value**	**Net direct cost to business per year**	**BIT Score**
1,661.0	380.2	-33.6	-168.2

Alternative policy scenario

Cost of Option (2016 prices, 2017 present value)			
Total Net Present Social Value	**Business Net Present Value**	**Net direct cost to business per year**	**BIT Score**
1,671.9	382.1	-33.8	-169.0

Both of these calculations are based on the fourteen remaining years of the 2013-34 appraisal period after the policy options are scheduled to take effect. In both cases, 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. Note that, in line with BIT methodology, 2016 prices and 2017 present values are used, so these numbers are not comparable to those determined above for the options' net present values.

Wider impacts

Consumers are paying for the smart meter rollout through additions to energy bills. Without policy intervention, the rollout is likely to slow down considerably after the end of 2020. This would mean that those consumers who had not received smart meters by this point would likely have to wait considerable periods of time before they are able to partake in the benefits of smart metering. Thus, these consumers would be paying for smart metering, but not receiving the benefits that it offers. Furthermore, these customers would be unable to access new market offerings that are enabled by smart meters (e.g. new tariffs that suppliers will be able to offer based on half-hourly energy usage data that can be provided by smart meters). Both of the policy options considered here mitigate this by ensuring that the rollout's

momentum continues, ensuring that the rollout reaches a large majority of the population by the mid-2020s.

We would not expect these policy options 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. Furthermore, continuing to install smart meters to reach market-wide coverage in the mid-2020s will likely allow more consumers to have access to future smart energy tariffs, promoting effective competition within the energy market.

The proposed regulatory framework should provide for accurate monitoring of the progress towards market-wide rollout. It is essential that monitoring is based on specific, well defined principles to prevent unequal treatment and market distortion. Equally, reporting requirements should not become so burdensome that they distract energy suppliers from the objectives of the Programme.

A range of wider impacts of smart metering are considered and discussed in the Programme's 2019 Cost-Benefit Analysis. Since the purpose of the policy options considered here is to ensure that the smart meter rollout is delivered to completion, the impacts studied in that document are also applicable here.

Summary

Our preferred option is the *main policy scenario*, which entails energy suppliers being set individual milestones for the smart meter installations required to reach market-wide coverage by the end of 2024:

- The methodology under the proposed framework establishes annual milestones during a period of four years (from 1 January 2021 to 31 December 2024) for each energy supplier based on a straight-line delivery trajectory towards the overall ambition of market-wide smart meter coverage. This methodology takes account of both the starting position of individual energy suppliers as of 31 December 2020 and their performance thereafter in increasing their smart meter coverage.

- The Government recognises that external factors may restrict the installation of smart meters and that these should therefore be accounted for as part of both the annual milestones and the overall achievement of a market-wide rollout. We also recognise that these delivery challenges are likely to change over time in line with changes in market conditions and may become harder as smart meter coverage reaches higher levels. On this basis, we propose to apply the tolerance in stages, growing in a straight line to 15% in the final year of the monitoring framework.

- Therefore, the key variables that will determine the annual minimum installation requirements for each supplier will be their coverage levels at the end of 2020 (establishing their specific starting point for the four-year framework trajectory), the tolerance level allowed for that year and the number of customers the energy supplier has without smart meters at the start of the year (or at the end of the previous year).

- We recognise that the smart meter coverage level of individual energy suppliers is influenced by consumers that have had a smart meter installation moving between energy suppliers. We propose to take account of such churn in the methodology to establish annual milestones for individual energy suppliers. This will enable energy suppliers to take credit for each smart meter installation they deliver within a given year, regardless of whether the consumer remains with the energy supplier.

- We acknowledge that some uncertainty remains regarding the external factors and market conditions that could influence the delivery of a market-wide rollout. We therefore propose to undertake a mid-point review during the early stages of the new regulatory framework. This will consider whether tolerance levels within the framework remain relevant to market realities, and whether specific policy measures or incentives should be introduced to support the achievement of the minimum required coverage level towards the delivery of a market-wide rollout.

- Reporting and monitoring will be a matter for Ofgem, and they will consult separately on the reporting requirements of any new obligation in due course.

The *alternative policy scenario* presents an alternative option which could push energy suppliers to accelerate installation rates in order meet the required minimum coverage level at an earlier point, by reducing the duration of the monitoring framework period. These ambitious milestones may be very challenging for some suppliers to achieve, which risks the successful delivery of market-wide smart meter coverage and could potentially lead to unquantified additional costs to mitigate these challenges. Given that, as we have seen in this Impact Assessment, this alternative scenario only provides a relatively small additional amount of net benefit, the *main policy scenario* remains our preferred option.

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