Department for
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Non-Domestic Smart Meter Consumer Segmentation

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Background

Smart meters are replacing traditional gas and electricity meters in homes, small businesses and public sector organisations across Great Britain as part of an important upgrade to the national energy infrastructure and underpinning the cost-effective delivery of Government's net zero commitment.

There are broadly two types of smart meter in the non-domestic market. Large electricity supplies (profile classes 5-8 and 00) and large gas supplies (consumption over 732 MWh/year) are required by energy supply licence conditions (regulated by Ofgem) to have Advanced Meter Reading (AMR) meters fitted which measure consumption every half hour[1] and transmit readings to the supplier. These tend to be larger non-domestic organisations, such as Industrial and Commercial (I&C) businesses.

Smaller sites in electricity profile classes 1-4 or with gas consumption below 732 MWh/year are covered by the smart meter mandate. Three million meters (across two million sites) are in scope of the mandate, of which 51% are already smart[2]. These cover a range of organisations and sectors, including pubs and restaurants (hospitality), shops (retail), schools and local authority buildings (public sector). 70% of mandate sites are microbusinesses.[3] The rollout of smart meters to non-domestic sites within the mandate is estimated to lead to £1.5 billion of energy consumption reductions[4], driven by these consumers engaging with their smart meter data and identifying ways to reduce their energy use.

As of December 2018, all microbusinesses within the smart meter mandate must be offered a smart meter that complies with the latest Smart Metering Equipment Technical Specifications (SMETS) by their energy supplier. Non-microbusinesses within the mandate can be offered a choice of SMETS or AMR meter, but the choice must include SMETS.

The Government's new four-year framework to reach market-wide coverage of smart meters by 2025 came into effect on 1 January 2022. This Targets Framework sets energy suppliers minimum annual installation targets subject to an annual tolerance level.[5] In June 2021, the Government confirmed the tolerance levels for the first two years of the new Framework. This includes distinct tolerances for domestic and non-domestic rollouts for the duration of the Framework.[6]

To support the new Targets Framework, the Government has a programme of research underway to increase understanding of non-domestic consumer attitudes to smart meters, including the drivers of acceptance, apathy and rejection and how these might differ by

[1] Or at least every hour for gas.
[2] https://www.gov.uk/government/statistics/smart-meters-in-great-britain-quarterly-update-september-2022
[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/920211/non-domestic-smart-metering-guidance.pdf
[4] https://www.gov.uk/government/publications/smart-meter-roll-out-cost-benefit-analysis-2019
[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/893124/delivering-smart-system-post-2020-govt-response-consultation.pdf
[6] https://www.gov.uk/government/consultations/smart-meter-policy-framework-post-2020-minimum-annual-targets-and-reporting-thresholds-for-energy-suppliers

organisation type. Therefore, the research has produced a **non-domestic consumer attitudinal segmentation** intended to be useful to a wide range of organisations collaborating to deliver the smart meter rollout.

What is the segmentation and how can it be used?

This attitudinal segmentation aggregates non-smart, non-domestic customers into groups based upon their attitudes towards smart metering, energy, and wider aspects of business/ organisational decision making (including on aspects such as sustainability). It creates broad "categories" of attitudes and quantifies what percentages of non-smart consumers are likely to fall into those categories. This allows further breakdowns, for example how these categories of attitudes interplay with business size or sector.

A better and more accurate picture of how non-domestic consumers make decisions about smart meters can support the Government in understanding what might be effective at converting different groups of businesses to take up smart meters. In addition, such a segmentation can also be "operationalised", i.e. it can be used by industry (including energy suppliers themselves) to help carry out more targeted engagement with non-domestic consumers to encourage them to take up smart meters. For example a segmentation could help:

- to **tailor messaging to consumers** to persuade them of the value of smart meters, for example finding common ground in terms of messages that resonate *across* segments, or tailoring communications to *a particular segment(s)* with a message that resonates with some segments over others
- to **support a smooth installation process** by enabling energy suppliers to tailor reassurances (in messaging or elsewhere) about the installation process to any concerns or worries found across or within particular segments
- industry to **develop consumer offerings**, including understanding what incentives or customer offers may best incentivise particular segments to take up smart meters and engage with them, for example new products or services

However, these benefits will only be maximised if industry understands what attitudinal segments their non-smart, non-domestic customers likely fall into, so that messaging or customer offers can be tailored accordingly. This report outlines two ways to identify which attitudinal segments non-domestic consumers may fall into. The first involves using existing information that may already be available about customers, but only allows a broad assessment of the **relative proportions** of segments that exist. The second requires additional data to be collected about non-domestic consumers; this would be more resource intensive but has the benefit of more accurately predicting the specific segment a customer is in. Both options are explored in more detail later in this document.

Ultimately, a segmentation is a simplification of the real world; non-domestic consumer attitudes will not fall neatly into a single "box" and in reality every business/organisation will hold a mix of views that interplay with their decision making. However, having a greater

understanding of how decision makers are likely to approach decisions about their organisation, energy use and smart meters, should result in improved outcomes (both in terms of potential uptake, engagement with smart meters and also consumer needs being met with regards to smart offerings more generally). It is therefore the choice of energy suppliers as to how, if at all, they utilise the information in this document.

Details of the segments

The segmentation was developed from a quantitative survey of 705 non-domestic, non-smart[7] consumers (energy decision makers in businesses/ organisations), carried out by Quadrangle between 22nd July – 17th August 2021[8].

Five discrete attitudinal segments were created by clustering businesses/ organisations together based around common, uniting attitudes or outlooks – specifically, those that best helped to explain non-domestic consumers' attitudes towards smart meters. Although core business and organisational characteristics (such as size) were not found to determine likelihood to take up smart meters in and of themselves, to a degree these characteristics were found to interplay with attitudes/ outlooks.

Further details of the survey and segmentation analysis approach, including the characteristics of the sample used in this research, are included in the technical annex.

Key characteristics and attitudes of the five segments are detailed in Figure 1 below. Some selected percentage findings are shown in bold, to illustrate where segments particularly stand out from others in terms of their attitudes. The segments have been named based on general descriptions of their decision making approach, these are: 'No Risks & Cost Conscious', 'Profit Focussed and Instinctual', 'Tried and Tested', 'Techy and Innovative', and 'Analytical and Sustainable'. Across the segments there is a broad range of attitudes in relation to:

- Aspects of business decision making, general priorities and outlook
- Energy engagement and use
- Energy efficiency
- Sustainability
- Openness to smart meters

[7] The definition of 'non-smart' used was that the business/ organisation had a traditional meter, or a mix of traditional and smart or advanced meters, on their premises.
[8] A similar quantitative survey was also carried out in April 2022. The findings from this survey demonstrated that the segmentation approach outlined here remained a valid framework for understanding different attitudes among non-domestic consumers, despite changes in the energy retail market.

Figure 1: Key characteristics and profiles of the five attitudinal segments

	"No Risks and Cost Conscious"	"Profit Focussed and Instinctual"	"Tried and Tested"	"Techy and Innovative"	"Analytical and Sustainable"	TOTAL (i.e., across all segments)
Approximate market size of segment	18%	20%	19%	26%	18%	(100%)
Core details:						
Business size profile (also see figure 2)	Mostly micro-businesses	Mostly micro-businesses	Mostly micro-businesses	Mix of micro and non-micro-businesses	Mix of micro and non-micro-businesses	
Key segment characteristics - general	Very unwilling to take risks as an organisation Low willingness to pay more for better customer service	Business decisions made quickly based on instinct and past experience Very price sensitive when buying from suppliers	Low engagement with energy efficiency issues Very low propensity to change energy supplier	Often make use of digital tools/services to monitor or improve organisational performance High level of engagement re. aspects of sustainability	Very keen on long term business planning and to base decisions on evidence; often use digital tools to assist Very highly engaged with sustainability – integral to organisational focus	
Smart meters:						
Receptivity to smart meters (also see figure 3)	Less open	Less open	Neutral	More open	Most open	
Aware of smart meters being available for	88%	80%	**66%**	81%	78%	79%

	"No Risks and Cost Conscious"	"Profit Focussed and Instinctual"	"Tried and Tested"	"Techy and Innovative"	"Analytical and Sustainable"	TOTAL (i.e., across all segments)
businesses/ organisations						
Say they have smart meter installed at home	30%	23%	42%	46%	**62%**	40%
Say that at least some of their meters are smart or advanced	19%	15%	17%	**48%**	**55%**	32%
Say their energy supplier has offered them a smart meter before	44%	36%	**28%**	38%	45%	38%
Attitudes to energy (% top 2 box 'agree' on 5pt agree-disagree scale):						
Changing energy suppliers isn't worth the hassle	21%	18%	**40%**	31%	12%	25%
We are prepared to pay more for energy from renewable sources	17%	5%	19%	**48%**	**52%**	29%
We actively make an effort to reduce our energy usage where we can	72%	66%	52%	61%	**94%**	68%
We actively make an effort to reduce our carbon footprint	29%	34%	33%	**55%**	**89%**	48%

	"No Risks and Cost Conscious"	"Profit Focussed and Instinctual"	"Tried and Tested"	"Techy and Innovative"	"Analytical and Sustainable"	TOTAL (i.e., across all segments)
We can't reduce our energy consumption, we use what we have to use	55%	65%	48%	46%	**23%**	48%
Aspects of business decision making (% top 2 box 'agree' on 5pt agree-disagree scale):						
We are prepared to take risks as a business/ organisation	**7%**	49%	35%	48%	45%	38%
We make quick decisions because we are too busy working 'in and on' the business/ organisation	15%	**68%**	43%	35%	28%	38%
We are willing to pay more for a better customer service	**40%**	53%	55%	58%	81%	57%
We actively monitor our outgoings to be able to make changes/ reductions if needed	75%	84%	77%	65%	**96%**	78%
We make use of digital and online services/tools to improve/ monitor business/ organisation's performance	31%	42%	40%	**63%**	**82%**	52%

	"No Risks and Cost Conscious"	"Profit Focussed and Instinctual"	"Tried and Tested"	"Techy and Innovative"	"Analytical and Sustainable"	TOTAL (i.e., across all segments)
Attitudes to sustainability (% top 2 box 'agree' on 5pt agree-disagree scale):						
We are becoming more aware of how our actions as a business/ organisation impact the environment	37%	41%	45%	**61%**	**89%**	55%
Sustainability is a key part of our brand/ offer	22%	19%	24%	**43%**	**66%**	35%
We always look for energy efficient products/ solutions	43%	53%	47%	**65%**	**94%**	60%
We always look for environmentally friendly suppliers	**21%**	**21%**	**29%**	56%	83%	42%
We are investing in energy efficient technology, equipment or vehicles	18%	25%	13%	**51%**	**66%**	35%

Understanding the characteristics of the attitudinal segments should help to inform how different types of businesses/ organisations might be engaged or communicated with regarding smart meters, i.e. to assist in developing strategies for encouraging smart meter uptake.

In particular, it is helpful to understand the nature of those segments which are more open to smart meters: the ‘Techy and Innovative’ and ‘Analytical and Sustainable’ segments. For example, as Figure 1 indicates, these segments are:

- More likely to be making an effort to reduce their carbon footprint (for example, 89% of the ‘Analytical and Sustainable’ segment claims to be doing this, versus 29% for the ‘No Risks and Cost Conscious’ segment)
- Most conscious of how their actions as an organisation impact the environment (for example 61% of the ‘Techy and Innovative’ segment say this applies to them, versus 37% for the ‘No Risks and Cost Conscious’ segment)
- Very likely to be seeking energy efficient products/ solutions generally
- Most likely to say that at least some of their meters are already smart or advanced
- Very keen to partner with suppliers to the business/ organisation that are environmentally friendly
- The most likely to be investing in energy efficient technology, equipment or vehicles
- Much more likely to consider sustainability as integral to their brand/ offer
- More widely making use of digital services/ tools to improve or monitor organisational performance

Accordingly, it may be inferred that the 'Techy and Innovative’ and ‘Analytical and Sustainable’ segments could be receptive to environmental or sustainability rationales for smart meters, or rationales that highlight how smart meters can assist with energy efficiency.

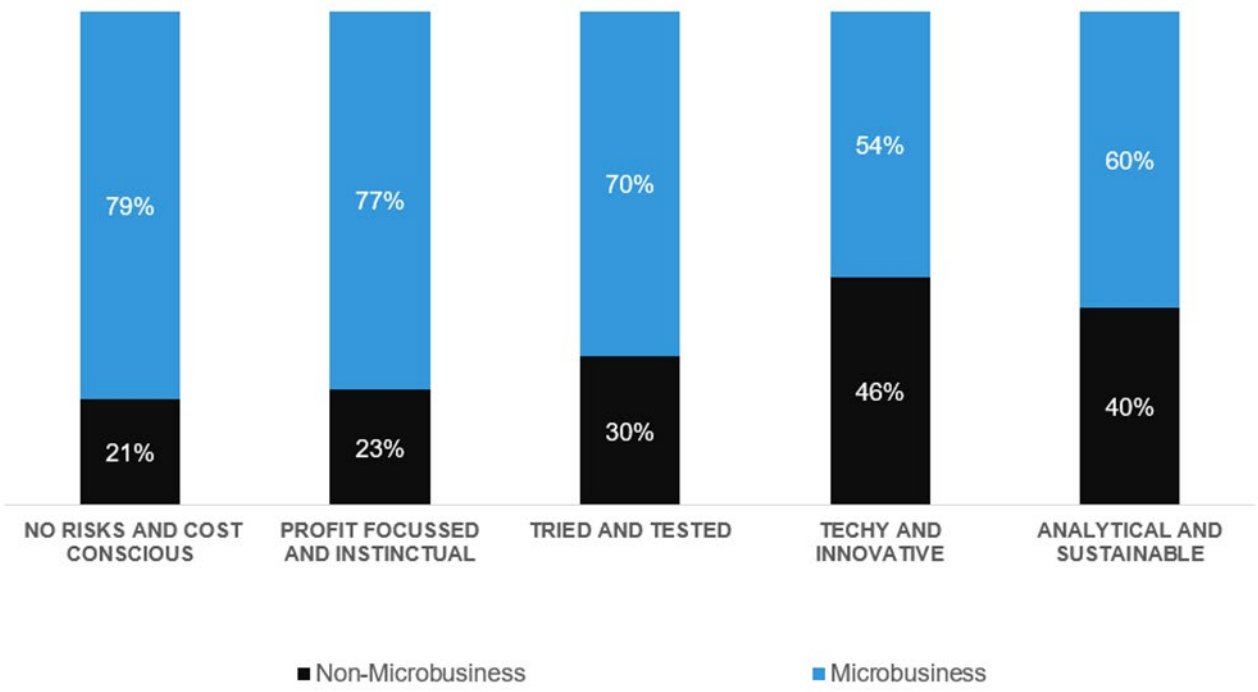
Conversely, the less open to smart meters segments – in particular ‘No Risks and Cost Conscious’ and ‘Profit Focussed and Instinctual’ – may be somewhat less convinced and/or motivated by an environmental/ sustainability-based rationale for smart meters, and (also) require other forms of reasoning or incentivisation (for example related to potential financial benefits of having smart meters). Among these segments, the data in Figure 1 also point to other potential considerations or barriers around smart meter engagement/ receptivity, for example:

- There is a higher feeling in these segments that their energy consumption cannot be reduced (‘we use what we have to use’)
- There is a lower likelihood to already have smart meters installed at home, suggesting they potentially may be less convinced by smart metering in general
- There is far less preparedness to pay more for energy from renewable sources (in turn, this may also suggest that - where appropriate - it could be worthwhile reassuring them that renewable would not *automatically* mean more expensive)
- Those in the ‘Profit Focussed and Instinctual’ segment in particular say they have a high tendency to make quick decisions, given they are time poor through working ‘in and on’ the business (and - hence – it could be inferred that they may potentially require cognitive shortcuts in order to ‘see’ the benefits of smart meters)

Differences in the segments' profiles can also be seen through the distribution of business size within segment. Broadly, the segments more open to smart meters ('Techy and Innovative' and 'Analytical and Sustainable') contain a somewhat higher proportion of non-microbusinesses (i.e. small and medium sized businesses/ organisations) versus the other segments, which have the highest proportions of micro sized businesses/ organisations.

This is summarised below in figure 2:

Figure 2: Distribution of business/organisation sizes within attitudinal segments



(Total base = 705)

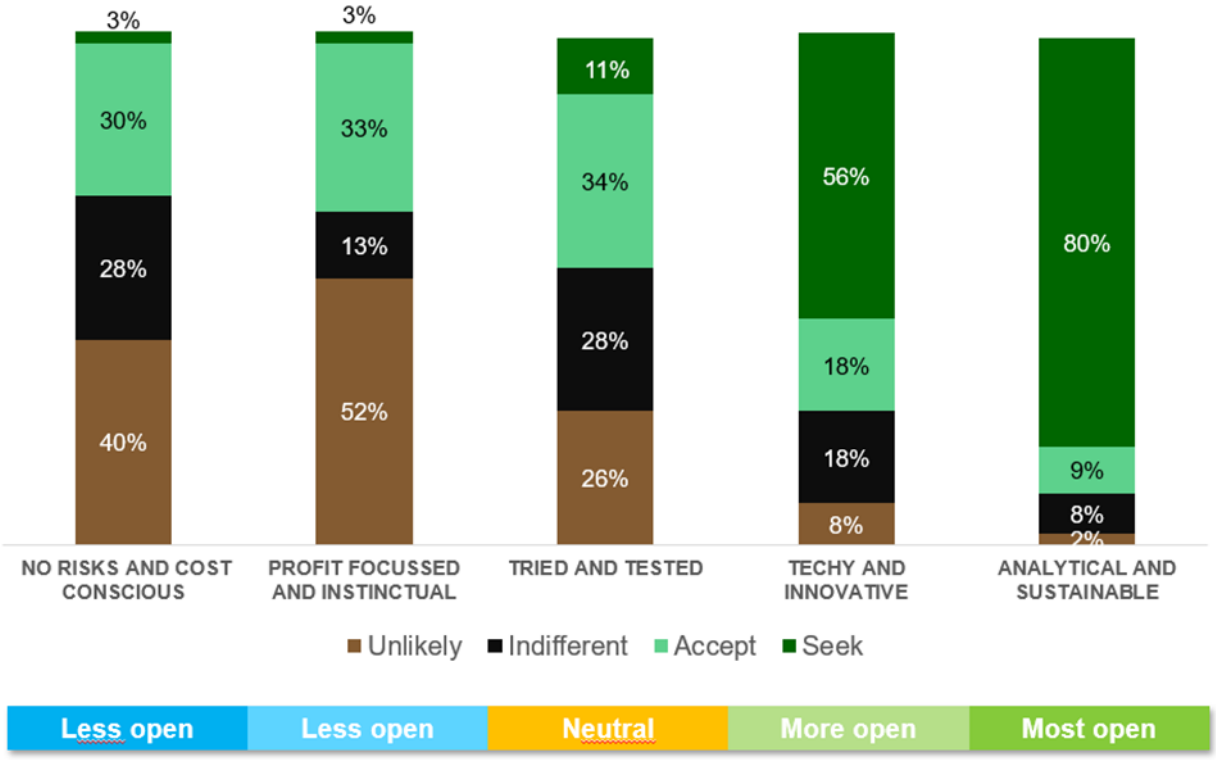
Finally, it is helpful to understand – in more detail – how **openness to smart meters** varies by attitudinal segment.

As highlighted below in figure 3, there are considerable differences by segment in terms of their openness to getting a smart meter; for example:

- Only 3% of the 'No Risks and Cost Conscious' and 'Profit Focussed and Instinctual' segments say they will proactively seek a smart meter installation within the next six months. This contrasts with 56% and 80% respectively within the 'Techy and Innovative' and 'Analytical and Sustainable' segments
- While 'No Risks and Cost Conscious' and 'Profit Focussed and Instinctual' are the least open segments, nevertheless around three in ten (30% and 33% respectively) do claim they would accept a smart meter if offered one by their energy supplier
- Around half of 'Profit Focussed and Instinctual' (52%) say they would be unlikely to accept a smart meter if offered one

- The ‘Tried and Tested’ segment is the most divided overall, and includes a significant proportion who are indifferent

Figure 3: Openness to smart meters by attitudinal segment



QC2. How likely or unlikely will you be to contact your energy company within the next 6 months to request a smart meter installation?
QC3. And if you were offered a smart meter installation by your energy supplier within the next six months, how likely or unlikely are you to accept it?
(Total base = 705)

Guidance: How industry can ‘re-create’ the segmentation

As outlined previously, the attitudinal segmentation can provide a greater understanding of how decision makers are likely to approach decisions about their organisation, energy use and smart meters, which could result in improved outcomes (both in terms of potential uptake, engagement with smart meters and also consumer needs being met with regards to smart offerings more generally).

This section outlines two approaches to applying the segmentation to a supplier’s customers. The first is relatively easy to apply, but only provides general insights about the customer base. The second requires additional data collection, but can provide more detailed findings, including the segment an individual customer falls into:

Option 1: Using ‘Firmographic’ data to understand relative segment proportions

This option involves using ‘firmographic’ data, the business/organisation size (measured by number of employees and/or turnover) and sector within a supplier’s customer base to

estimate the **relative proportions** of attitudinal segments that exist. Accordingly, this approach would not tell a supplier which attitudinal category each individual customer is likely to fall into, but would instead help make broader assessments about the overall attitudinal profile of their customer base.

The illustrative example below shows how a supplier could use breakdowns from this research to "overlay" the potential **relative segment proportions** on to their own base.

Option 1 worked example

The tables below show the relative proportions of each segment *within micro-and non-micro businesses, and also by sector groupings (see below and also the technical annex for more details on the microbusiness/ non-microbusiness and sector definitions used):*

Segments	Business/organisation size	
	Microbusinesses	**Non-Microbusinesses**
No Risks and Cost Conscious	21%	12%
Profit Focussed and Instinctual	23%	14%
Tried and Tested	19%	17%
Techy and Innovative	21%	36%
Analytical and Sustainable	16%	21%
TOTAL (i.e., across all segments)	100%	100%

Segments	Sector groupings (see technical annex for definitions)			
	Manufacturing and construction	Retail and hospitality	Business, finance and professional services	Social care, entertainment, public sector and other
No Risks and Cost Conscious	18%	22%	12%	21%
Profit Focussed and Instinctual	23%	18%	24%	13%
Tried and Tested	19%	14%	22%	20%

Techy and Innovative	28%	27%	24%	22%
Analytical and Sustainable	12%	19%	18%	23%
TOTAL (i.e., across all segments)	100%	100%	100%	100%

The business/ organisation size and sector grouping variables shown above have been chosen as these are relatively 'standard' variables more likely to be available to energy suppliers.

Taking the micro/ non-microbusiness example, assuming that these size groupings can be recreated by energy suppliers on a like-for-like basis, then a supplier may *broadly* infer that the relative approximate proportions of segments within its customers are as follows:

Hypothetical supplier customer base	Number of customers falling within business/organisational size definitions			
	Microbusinesses	Non-microbusinesses		
	10,000	10,000		
	How does supplier's base distribute by segment?		*Total*	*%*
No Risks and Cost Conscious	2,100	1,200	3,300	16.5%
Profit Focussed and Instinctual	2,300	1,400	3,700	18.5%
Tried and Tested	1,900	1,700	3,600	18.0%
Techy and Innovative	2,100	3,600	5,700	28.5%
Analytical and Sustainable	1,600	2,100	3,700	18.5%
TOTAL (i.e., across all segments)			20,000	100%

To enable the above, the size and sector definitions would need to be the same between the segmentation used in the research (i.e. as outlined in this document) and the supplier analysis.

The definitions used in the research for these two variables have been designed to be broadly transferrable to energy suppliers' own data:

- Microbusinesses are defined as those with up to 9 employees and (where this information was available) with a turnover of less than £2m. Non-microbusinesses are defined as having 10-249 employees and/or (where this info was available) turnover of £2m+. Please see the technical annex for full details [9]
- Sector is based on groupings of SIC codes (see the technical annex for details)

The key limitation of this approach is that it can only be used to broadly estimate the **potential relative proportions** of segments that exist across a customer base, as opposed to the specific segment each organisation will fall into. This is because, although the segments do differ somewhat in terms of their size and sector profiles, it is not possible to **define** or **predict** which segment an organisation should be in by these factors. For example, although the 'Analytical and Sustainable' and 'Techy and Innovative' segments are more likely to contain larger businesses or organisations compared with the other segments, they still contain a significant number of micro businesses. Most importantly, allocation to each segment is driven by the attitudes, rather than sector or size of the business or organisation. This information can be captured from the organisation directly (for example through a survey – see option 2 below).

An additional risk when relying on this approach is that the attitudes or circumstances of the supplier's customers differ systematically from the sample included in BEIS' research, including if the supplier's definitions of size and sector differ from those outlined above. In this case the breakdown of different segments implied by business or organisation size or sector may under or overestimate particular groups. More details on the sample used in this (BEIS) research are included in the technical annex, including the microbusiness vs. non-microbusiness and sector definitions used in the 'option 1 worked example' tables above.

Nevertheless, this approach may provide useful general insights about a supplier's customer base to inform strategy development, should it not be possible to collect additional customer data and/or organisation level accuracy is not required.

Option 2: Recreating the segments through further data collection

The second option effectively recreates the attitudinal segmentation for a given set of consumers through a two-stage process:

First, by collecting new data from the target audience in question - e.g. a relevant sample of a supplier's own non-smart non-domestic customer base (similar to that used in this research) -

[9] Level of energy spend - which is included in the standard microbusiness definition used in supplier licence conditions - was not used as part of the microbusiness vs. non-microbusiness definitions in the survey (given the difficulties associated with surveying on this basis)

and asking selected key differentiating questions that were originally used to create the segments (set out underneath).

Second, allocating businesses/ organisations to a segment using the scoring approach outlined in the technical annex.

Further details on this approach, including the non-smart sample used in this research are set out in the technical annex.

Option 2, first stage: data collection using the key differentiating questions

Which attitudinal segment a business or organisation falls into can be predicted based on their responses to a set of 'key differentiating questions'. While there are other factors shown by this research to be relevant for determining segment membership, these questions were identified as the most accurate or important predictors.

The questions capture attitudes across a range of dimensions and therefore need to be captured through a dedicated data collection exercise such as a survey of the supplier's customer base. The specific questions are shown in Figure 4 underneath:

Figure 4: Segment differentiating questions

1. Thinking about how your business/organisation operates, how strongly do you agree or disagree with each of the following statements?

		Strongly disagree 1	2	3	4	Strongly agree 5
Q1.1	We are prepared to take risks as a business / organisation					
Q1.2	We make quick decisions because we are too busy working 'in and on' the business/ organisation					

2. And thinking about how your business/organisation makes commercial decisions, to what extent do you agree or disagree with the following statements?

		Strongly disagree 1	2	3	4	Strongly agree 5
Q2.1	We actively monitor our outgoings to be able to make changes / reductions if needed					

Q2.2	Price is the most important consideration when we buy from suppliers					

3. Thinking about how your business / organisation makes decisions around energy, to what extent do you agree or disagree with the following statements?

		Strongly disagree 1	2	3	4	Strongly agree 5
Q3.1	Changing energy suppliers isn't worth the hassle					
Q3.2	We organise a formal tender process when procuring energy					
Q3.3	We will only switch energy suppliers if the savings are substantial for the business / organisation					
Q3.4	We regularly switch our business'/ organisation's energy supplier to get a better deal					
Q3.5	We want to act sustainably, but not if it adds cost					
Q3.6	Environmental sustainability is not on our radar, we are focused on other things at the moment					

4. Thinking about how your business / organisation manages energy, to what extent do you agree or disagree with the following statements?

		Strongly disagree 1	2	3	4	Strongly agree 5
Q4.1	We actively make an effort to reduce our energy usage where we can					
Q4.2	We have more important things to worry about than how much energy we are using					
Q4.3	We are prepared to pay more for energy from renewable sources					
Q4.4	We actively make an effort to reduce our carbon footprint					

Q4.5	We can't reduce our energy consumption, we use what we have to use					

5. Now thinking more specifically about the types of meters that you have on your business / organisation premises.

   How likely or unlikely will you be to contact your energy supplier within the next 6 months to request a smart meter installation on your premises?

Very unlikely 1	2	3	4	Very likely 5

Option 2, second stage: allocating businesses/organisations to segment

Each of the questions shown above is scored on a 5-point scale (1-5) and these values are used to determine segment membership, using the grid included in the technical annex (see 'methodology (iv)').

Five calculations must be made for each participant – one for each segment. The segment with the highest score is then the best fit for the individual responding. Full details of this approach, including an example formula, are included in the technical annex.

Carrying out this process allocates a specific segment to each customer, as opposed to option 1 which only provides an estimate of the overall mix. This can then be used to help tailor communications, approaches or offers to the customer.

Technical Annex

Methodology (i): Survey and sample design

The segmentation was developed from a quantitative survey of 705 non-smart, non-domestic customers carried out by Quadrangle between 22nd July and 17th August 2021.

The sample was sourced from a third-party research panel (Dynata) and from publicly available lists of businesses/ organisations. A total of 201 respondents completed the survey by CATI (Computer-assisted Telephone Interviewing), while 504 completed the survey by CAWI (Computer-assisted Web Interviewing). The survey was approximately 15 minutes in length.

In order to qualify for the survey, respondents were asked to confirm the following:

- That they had full or partial decision-making responsibility for energy within their business/ organisation
- That their business/ organisation operated from a commercial premises (or public buildings in the case of public sector and/or third sector organisations)
- That their business employed fewer than 250 people and had a turnover that did not exceed £25 million in the last year
- That they had a traditional meter, or a mix of traditional and smart or advanced meters, on their (single or multi-site) premises
- Their business was based in Great Britain

Quotas were set on the survey sample to ensure appropriate levels of representation in terms of business/ organisation size (number of employees), and public vs. private sector.

After fieldwork was completed, data were then weighted back to reflect administrative data held by BEIS regarding the non-smart, non-domestic population in terms of business/ organisation size.

The sample was constructed to ensure sufficient base sizes for analysis in key subgroups. The overall composition of the sample is shown below:

		Unweighted base n=	Weighted proportion (%)
Total		705	100%
Data collection	CATI	201	29%
	CAWI	504	71%
Turnover (private sector only)	Less than £2M	398	80%
	Between £2M and £25M	205	20%
Business/ organisation size (private sector only)	Microbusiness (Up to 9 employees, turnover <£2M)	232	67%

	Small (10-49 employees, turnover <£25m)	281	25%
	Medium (50-249 employees, turnover <£25m)	90	8%
Business/ organisation size (total sample)	Microbusiness (private: Up to 9 employees, turnover <£2M; public: up to 9 employees);	273	67%
	Non-microbusiness (Private: have 10-249 employees and/or a turnover of £2m - £25m; public: have 10-249 employees)	432	33%
Sector	Private sector	603	83%
	Public sector	73	14%
	Voluntary/Not for profit sector	29	3%
Smart status	All energy meters are traditional (non-smart)	392	61%
	Some meters are smart, some are traditional	262	32%
	Not sure	51	8%

Methodology (ii): How the segmentation was created

The segmentation was created as follows:

Step 1 - Deciding the inputs to the survey questionnaire: The initial inputs for the segments were a number of attitudinal and behavioural questions included in the survey questionnaire that could be used to create differentiated consumer groupings (i.e. segments). The questions were informed primarily through findings from an initial phase of qualitative research among non-smart non-domestic consumers, which provided guidance on the range of factors that would need to be encompassed to enable a robust understanding of differing attitudes to smart meters. The qualitative research was undertaken in April-May 2021 and involved 8 focus groups (37 participants overall) among energy decision makers in non-smart businesses/ organisations.

Step 2 - Identifying segment clusters in the data: This was done using 'K-means highest reproducibility' cluster analysis. This technique involves running cluster analysis multiple times from different start points and the solution which is most reproducible being selected.

The inputs to the cluster analysis were a number of factors/ themes from the questionnaire, encompassing: how the business/ organisation operates, makes commercial decisions, makes decisions about energy, manages energy, and their likelihood to request a smart meter. All the input variables were standardised to allow for the different scales.

Several different combinations of variables were explored before settling on the final approach, which was decided based on it being the solution that was most differentiating on key dimensions - both statistically and in terms of there being clear and meaningful differences in attitudes. The final solution was also selected on the basis of it making logical 'real world' sense, including in terms of aspects that were observed at the qualitative phase.

Step 3 - Deciding how many discrete segments to have in the segmentation: Through the cluster analysis both a four segment and a five segment solution were created. The five segment solution was deemed to be preferable on the basis that it created the best differentiation between groups, whilst maintaining significant enough base proportions to make subsequent analysis of these groups meaningful.

Methodology (iii): Segment size and sector groupings

The segment size and sector groupings referred to above under 'option 1: Using Firmographic data to understand relative segment proportions' are as follows:

Business size:

Microbusinesses are defined as:

- For private sector organisations: have up to 9 employees and a turnover of less than £2m
- For public sector/ voluntary organisations: have up to 9 employees (turnover information was not available here)

Non-microbusinesses are defined as:

- For private sector organisations: have 10-249 employees and/ or a turnover of £2m - £25m
- For public sector/ voluntary organisations: have 10-249 employees (turnover information was not available here) [10]

Sector groupings: Manufacturing and Construction (Agriculture, Mining or quarrying, Manufacturing, Construction or related trades, Motor Vehicle sales and repair, Transport and distribution); Retail and Hospitality (Retailer/ shops, Wholesalers, Accommodation and food service, Personal or other services); Business, Finance, and Professional services (Information and Communication, Financial and insurance services, Real Estate activities, Computer, IT or related activities, Research and Development, Professional business services); Social Care, Entertainment, Public Sector and Other (Charities and other community work, Education, Health and Social work, Arts, entertainment and recreation, Local or national government administration, all other)[11]

[10] Level of energy spend - which is included in the standard microbusiness definition used in supplier licence conditions - was not used as part of the microbusiness vs. non-microbusiness definitions in the survey (given the difficulties associated with surveying on this basis)
[11] These sector definitions are based on Standard Industrial Classification (SIC) codes (see https://resources.companieshouse.gov.uk/sic/).

Methodology (iv): Allocating businesses/ organisations to segment

As mentioned earlier in 'how industry can recreate the segmentation', the second option outlined listed the key differentiating questions that would need to be included in a data collection exercise (see figure 4 for this list of questions).

Each of the questions shown in figure 4 is scored on a 5-point scale (1-5) and these values are used to determine segment membership, using the **grid below**. *Please note that the segments in the grid below are shown in a different order to the tables shown earlier in figure 1 (in figure 1 the segments are re-ordered according to their openness to smart meters).*

Five calculations must be made for each participant – one for each segment. The segment with the highest score is then the best fit for the individual responding:

	Techy and Innovative	Profit Focussed and Instinctual	Tried and Tested	No Risks and Cost Conscious	Analytical and Sustainable
Constant	0.000	1.665	2.443	6.043	-7.753
Q1.1	0.000	0.290	0.138	-1.856	-0.202
Q1.2	0.000	1.144	0.743	-0.420	0.036
Q2.1	0.000	1.956	1.649	1.904	2.299
Q2.2	0.000	0.212	0.171	-0.183	-0.374
Q3.1	0.000	0.034	0.461	-0.033	-0.154
Q3.2	0.000	-0.875	-1.230	-0.730	-0.198
Q3.3	0.000	0.591	0.645	1.917	1.239
Q3.4	0.000	-0.916	-1.656	-0.997	-1.496
Q3.5	0.000	0.128	0.207	-0.325	-0.127
Q3.6	0.000	-0.351	-0.520	0.032	-1.116
Q4.1	0.000	0.888	0.409	0.823	0.657
Q4.2	0.000	-0.048	-0.224	-0.216	-0.711
Q4.3	0.000	-2.381	-1.261	-0.934	-0.074
Q4.4	0.000	-0.458	0.015	-0.395	1.172
Q4.5	0.000	0.071	0.194	0.297	-0.755
Q5	0.000	-2.856	-1.768	-3.164	0.307

For example, the formula for "Tried and Tested" is:

2.443 + (0.138 x Q1.1) + (0.743 x Q1.2) + (1.649 x Q2.1) + (0.171 x Q2.2) + (0.461 x Q3.1) - (1.230 x Q3.2)

+ (0.645 x Q3.3) - (1.656 x Q3.4) + (0.207 x Q3.5) - (0.520 x Q3.6) + (0.409 x Q4.1) - (0.224 x Q4.2)

- (1.261 x Q4.3) + (0.015 x Q4.4) + (0.194 x Q4.5) - (1.768 x Q5)

In this formula Q1.1 is replaced by the answer the participant gives to that question: 1, 2, 3, 4 or 5. Similarly for the other questions.

Once all 5 formulae are calculated, the participant is allocated to the segment whose formula gives the highest score[12].

[12] The score for Techy and Innovative is always zero. This is because the other 4 segments are all scored relative to this one

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