cambium

Targeting the Sustainable Innovation Opportunity created by the

CRC ENERGY EFFICIENCY SCHEME

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EXECUTIVE SUMMARY

The United Kingdom's Carbon Reduction Commitment Energy Efficiency Scheme (CRC) legislation requires certain organisations to account for their energy use and pay a new carbon tax on an annual basis from April 2012. Additionally, these CRC 'Participants' (who are among the largest energy users in the UK) will be open to reputational risk as a result of their emissions reduction performance being published annually in league tables from October 2011. A detailed context and history of the CRC is presented in Appendix 2 to this report.

This report, produced by Cambium, provides the first in-depth, systematic analysis of the financial and reputational exposure of the 2,770 Participants in the CRC Scheme. It is aimed primarily at Suppliers of innovative technologies and services that can help the organisations affected by this legislation to reduce their likely tax bills, cut the energy use and protect their reputations as well as be able to promote themselves as responsible businesses.

This unique analysis provides an essential tool for Suppliers to identify and prioritise their opportunities by market sector, enabling them to tailor their business messaging and social value propositions appropriately. A detailed description of the Methodology is included in the report.

The Research results will be of value also to the following audiences:

- Trade bodies and CRC Participants
- Policy makers and Public Stakeholders concerned with ensuring that the legislation achieves the objective of promoting energy efficiency, thereby improving UK energy security
- Investors – Businesses, potential partners, fund managers or individuals who need to identify sustainable sectors with growth potential or who need an objective insight into a specific organisation's ethical standing

CRC Participants were segmented first into key industry sectors. Using web-based research approach, the Cambium Method, Participants were then analysed against a range of Sustainability and energy reduction related Indicators to rank them within the Cambium Index. This approach can easily be extended to cover other Indicators. The initial dimensions that have been measured in this report include:-

- 'Sustainability'– a metric based on search terms that reveals an organisation's general attitude towards the environmental Sustainability agenda, signposting their propensity to participate in low carbon economies.
- 'Carbon' – a metric based on search terms that identifies actions taken by an organization to improve environmental performance through the measurement, reporting and verification of carbon emissions.
- 'Social Awareness'- a metric based on search terms that identifies another important dimension of sustainability: corporate social responsibility.
- 'Environmental ROI' – a metric based on search terms that identifies the extent to which Sustainability initiatives are quantified by an organization in terms of the financial value ascribed to their environmental and social benefits.

The Cambium Index ranking enables Participants to be categorised as a Leaders, Early Majority, Late Majority or Laggards within their sector, providing a measure of their likelihood to invest in and adopt energy saving or other innovative technologies, supporting sustainable economic growth.

The report provides a detailed commentary on the analysis behind these findings and draws out more specific implications for each of the audiences noted above. The Appendices contain in-depth quantitative analysis of the results, opportunities for further research as well as a review of the history and current status of the CRC legislation.

Fig 1 provides a summary of the research, highlighting the difference in attitudes towards Sustainability and the management of carbon emissions amongst CRC Participants in the Private and Public Sectors.

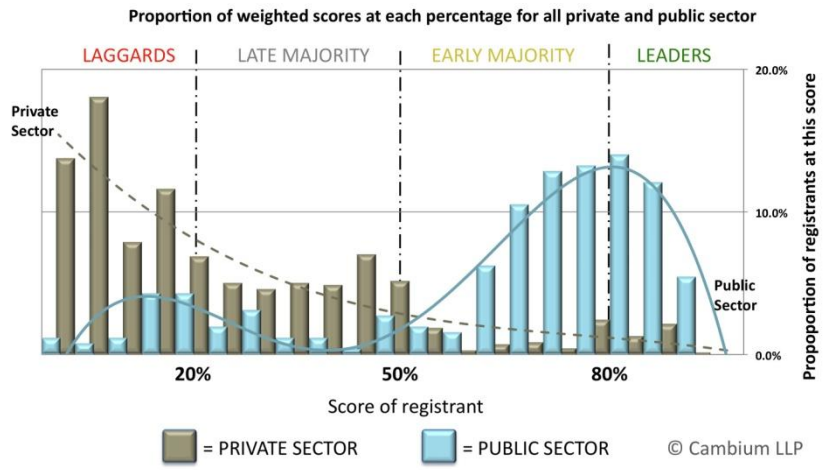

Fig 1 Distribution of Private and Public Sector organisations

This is the first comprehensive analysis of the CRC Participants in terms of Segmentation and their attitude to Sustainability & Carbon management. The data and charts provided in the report provide an essential tool in targeting CRC Participants with appropriate messages and offerings.

CRC Participants are diverse in their composition and needs for sustainable and energy efficiency innovations. Each sub-sector has specific energy demands and varying interests in Sustainability, so Suppliers marketing messages need to be customised to be relevant to each of the sectors identified.

Analysis of the Private sector reveals that:

- Cambium Index scores for the Private Sector indicate that it has fewer Leaders (5% versus 42%) and more Laggards (57% versus 11%) than the Public Sector
- Manufacturing accounts for more than a third of this sector and a quarter of all Participants. Energy and Services have the highest percentage of the leaders
- 15% of the Private sector doesn't mention any of the Sustainability indicators compared to only 3% in the Public sector. Energy intensive sub-sectors like Manufacturing and Food & Drink Production were amongst the lowest in terms of percentage of Leaders

Analysis of the Public Sector reveals that:

- Cambium Index scores for the Public Sector were on average higher than the Private sector. Amongst component indicators of these scores, the strongest indicator is Sustainability
- By comparison with the Sustainability Indicator, interest in the Carbon management Indicator is less well developed with the highest interest being shown by the NHS and the Police
- The observed differences in the behaviour of the Public sector may offer support to the notion of separate CRC league tables to enable meaningful performance comparison. Successful Suppliers to the Public Sector need to ensure that they have good internal policies and practices around Sustainability

This report sheds light onto those CRC Sectors that are most exposed to the dangers of:

- Paying higher taxes.
- Damaging their reputations.
- Failing to save money at a time of widespread austerity
- Missing an opportunity to demonstrate their organisational commitment to sustainable, environmental stewardship.

In summary it provides important insights for the audiences cited to help them mitigate these risks.

OVERVIEW OF THE REPORT

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This Report provides the first comprehensive analysis of the potential financial and reputational exposure of organisations affected by the UK CRC Energy Efficiency Scheme (CRC) since the radical changes introduced in October 2010 that replaced the revenue recycling of Carbon Allowance payments with an annual Carbon 'tax'.

This Report provides details on the size and composition of all of the Private and Public Sector industry segments that are directly implicated by the CRC legislation. The analysis is based on a new proprietary methodology, the *Cambium Method*, used in this instance to assess the sustainability of business practices in organisations affected by the UK CRC Energy Efficiency Scheme. The Method uses a range of carefully researched terms that would apply to any company rather than relying simply on self-assessment returns or surveys of the Participants themselves. The results create an Index of the relative adoption and maturity of sustainability initiatives within and between the market segments affected by the Scheme.

The Research provides valuable insights for four key audiences interested in developing strategies that can build on and benefit from this important Legislation.

- Suppliers of innovative sustainable or energy saving goods and services to the organisations affected by the CRC (the *CRC Participants).*
- Trade *bodies and Participants.*
- Policy makers and Public Stakeholders concerned with ensuring that the legislation achieves the objective of promoting energy efficiency, thereby improving UK energy security.
- Investors – Businesses, potential partners, fund managers or individuals who need to identify sustainable sectors with growth potential or who need an objective insight into a specific organisation's ethical standing.

The insights provided by the analyses presented in this report are different for each audience. .

Suppliers

This research provides Suppliers with the information they need to identify the best CRC market sector opportunities for their innovations with detailed insights that enable them to develop propositions and messaging that are relevant to a given target market of organisations affected by the legislation. This means that marketing programmes can be targeted more efficiently and sales resources can be optimally aligned so that new sales opportunities can be identified and qualified more effectively and quickly.

Trade Bodies and Participants

This is the first public analysis at that level and it enables the Sub-Sector Management teams, interested participants, trade bodies, professional groups, standards bodies and trade Journals to understand the size and composition of their Sub-Sector and how that compares to other Sub-Sectors.

This will allow Participants to assess their performance against that of their Industry, in advance of the first CRC league tables being published in October 2011 contributing to the development of reputational risk management strategies.

Policy Makers and Public Stakeholders

For policy makers this research highlights the different attitudes and approaches to sustainability within the public and Private Sectors.

This information provides new insight into the various drivers behind the adoption of energy efficient and sustainable innovation in the public and Private Sectors. The data allows policy makers to model likely Participant responses to the CRC scheme, thereby providing a tool for refining policies designed to meet the objectives of the policy goals described below.

This is a key resource for Influencers such as Environmental Groups, Think tanks, Political Parties, and Politicians at local, UK and EU level.

Investors

This research provides the detailed evidence needed to identify those industry sectors that are leading the transition to Sustainability. Equally, it identifies sectors that are lagging behind in demonstrating a strong commitment to the Sustainability agenda.

For investors who, for their own purposes or in developing their client's portfolios, need to identify sustainable sectors with growth potential or who need an objective insight into a specific organisation's activities, the analysis below provides pointers to companies and sectors to monitor.

The Cambium Method

The Cambium Method is a proprietary research approach to analysing attitudes and the maturity of sustainable business practices in the Private and Public Sectors and for individual companies within those sectors.

Traditional approaches to assessing the sustainability of a specific organisation's business practices have relied on either the availability of public data, frequently published by the organisations themselves or on surveys of actors within organisations regarding their sustainability initiatives. As a result data quality is largely subjective; in responses to surveys, for example, contributors are often very aware of their organisation's public image and respond accordingly.

Unlike those approaches the Cambium Method includes but is not dependent on data 'published' by organisations. A much broader perspective is taken, drawing on information from suppliers, consumers, commentators and analysts using a rich aggregation of sustainability metrics. It therefore provides a more objective and robust assessment of an organisation's sustainability credentials. Individual organisations operating within the same industry sector may be benchmarked and individual industry sectors may be similarly compared.

Summary of Methodology

A detailed summary of the Cambium Method can be found on page 20.

We have used measures of the frequency of discussion in the organisations around four key Indicators summarised below. These frequencies have been calculated by obtaining data from web searches combining the organisations name and the terms used in the Indicators.

The approach has been validated through a lengthy and rigorous analysis of the research Method, enabling the search criteria to be optimised in order to provide meaningful comparative results. The initial dimensions along which sustainable business practices have been compared in this Report include:

- *'Sustainability* '– A metric based on search terms that reveals an organisation's general attitude towards the environmental sustainability agenda, signposting their propensity to participate in low carbon economies.
- *'Carbon'* – A metric based on search terms that identifies actions taken by an organisation to improve environmental performance through the measurement, reporting and verification of carbon emissions.
- *'Social Awareness'*- A metric based on search terms that identifies another important dimension of sustainability: corporate social responsibility.
- *Environmental ROI* – A metric based on search terms that identifies the extent to which sustainability initiatives are quantified by an organisation in terms of the financial value ascribed to their environmental and social benefits.

These metrics are correlated in the Cambium Method to create the Cambium Index providing a relative ranking of organisations and the sectors within which they operate in terms of their strategic intent and their ability to execute. Organisations within each sector are then categorised into four Segments, namely:

- Leaders
- Early Majority
- Late Majority
- Laggards

An idealised graphical representation of this categorisation is shown below, drawing on the well-known Technology Adoption Lifecycle model (*NB Our analysis combines the segments often referred to as 'Innovators' and 'Early Adopters' into a single Leaders segment*).

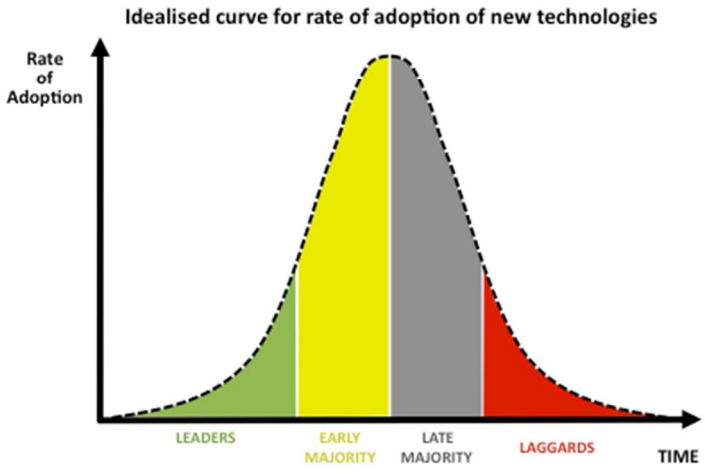

Fig 2 Rate of adoption curve

Market Segmentation of CRC organisations

The first part of the Report summarises research results by segmenting the affected organisations into the Private and Public Sector and the sub-sectors within them.

Each individual organisation has been allocated to a sub-sector reflecting its primary activity. Details of the segmentation analysis are provided on page 29.

The analysis below covers all 2,770 CRC Participants in both the Public and Private Sector.

Public Sector Analysis

A detailed analysis of the Public Sector is provided on page 42.

The Research identifies 5 sub-sectors of the Public Sector affected by the CRC

As with the Private Sector the numerical size of the Sub-Sectors is only one metric that should be considered in identifying potential target markets. Central Government is the smallest of the Sub-Sectors identified but can be realistically expected to have the greatest potential in terms of expenditure on energy efficiency innovations over time.

Private Sector Analysis

A detailed analysis of the Private Sector is provided on page 53.

The Private Sector CRC organisations outnumber Public Sector Participants by a ratio of more than 3 to 1. Within the Private Sector we have identified 14 separate Sub-Sectors affected by CRC and provide data and analysis for each of them.

CRC Organisations Attitudes to Sustainability

In addition to the number of Participants in each Sub-Sector, the Cambium Method enables us to assess the attitudes of organisations within each of the identified segments to the adoption of Sustainable business practices as measured using the Terms defined above.

The Cambium Method reveals sharp and striking differences in the interest level in Sustainability between Private Sector and Public Sector organisations in the CRC Energy Efficiency Scheme. Our Research shows that in general the Private Sector interest levels and maturity of Sustainable best practices are not as advanced as that of the Public Sector.

Whilst this differential response is noteworthy our Research also reveals that each Sub-Sector of the CRC organisations that has been identified has its own specific pattern of interest in and adoption of Sustainable best practices as measured by the Indicators.

Our Methodology also indicates that there are clear Leader organisations in terms of Sustainable business adoption in each Sub-Sector of the CRC market. However, these leaders are few in number and vary between each Sub-Sector. Further evidence of the increased interest in the Public Sector in Sustainability is illustrated by the fact that whilst 42% of Public Sector CRC organisations are scored as Leaders only 5% of all Private Sector CRC organisations are in the Leaders category. Detailed analysis of the Sustainability characteristics of every identified market segment is provided in the narrative, graphs and tables of the Report from pages 42 to 66 as well as Appendix 3 (page 85) and 4 (pages 86-88).

Generally, the Public Sector appears stronger in discussions around Sustainability and Social Awareness but the Private Sector is stronger around discussions of actually reducing carbon/energy. This is most probably due to the first being a policy setter whilst the latter being a huge user of energy.

Public Sector

The Public Sector interest in Sustainability is more advanced than that of the Private Sector. The Research also reveals a variation in the Sustainability interest and maturity within the five Private Sector segments.

Within the Public Sector, Central Government, Local Government and Academia are most the advanced in their interest in Sustainability. This response contrasts with that of the NHS and Police where our Research indicates that the interest level is much more in alignment with the interest levels found in the Private Sector.

Private Sector

Although the results of our Research indicated that the Private Sector had an overall lower level of interest, some Sub-Sectors had higher average scores and a higher percentage of Leaders than others. In this regard the Services, Energy, Financial Services, Media and Publishing Sub-Sectors scored more highly than the average for the Private Sector as a whole.

Private Sector Sub-Sectors with low scores for interest in all aspects of Sustainability and below average numbers of Leaders included the market sectors of Leisure & Hospitality, Manufacturing, Pharmaceuticals & Healthcare as well as Property and Construction.

General points to be made about results for the four Indicators

- Sustainability
  This is the first and most common Indicator to be mentioned by all Sub-Sectors across the Private and Public Sector. It quickly reaches a frequency of discussion at around 10% of the organisations presence on the Web. However, around 15% of the Private Sector below the Laggards, never even mention this first or any other topic.
- Social awareness
  Initially, this is mentioned second by the Private Sector and third by the Public Sector but is second amongst the Leaders in both sectors reaching a frequency of discussion at around 1%
- Carbon
  This comes in third and at a much earlier stage in the Private Sector compared to a late mention only by the Leaders in the Public Sector.
- Environmental ROI
  This is the converse of Carbon. An early indication of interest was followed by a declining level of discussion across all of the Public Sector. This compares with a low discussion, mostly amongst the Leaders, in the Private Sector.

Our detailed conclusions are presented on pages 68 to 71.

In summary the following conclusions can be drawn in relation to the four key audiences identified earlier, Suppliers, Trade Bodies and Participants, Policy Makers and Public Stakeholders and Investors

Suppliers

The findings of our Research clearly indicate that the Organisations affected by the CRC have a wide and varied level of interest in Sustainability. This Report provides essential information to Suppliers that helps them identify the market segments and audiences that are likely to be most receptive to the varying propositions offered by their innovative goods and services.

The details of these strategies will be affected by the nature of the innovations being offered, but it is clear that marketing propositions and messages need to be carefully tuned and aligned to the varying characteristics of each CRC market segment. Suppliers will also need to give careful consideration to their choice of sales strategy and to consider if some CRC sectors may be most optimally served by partnerships with other vendors or indirect channels, rather than a direct sales approach.

The Report provides detailed information on the composition of these markets and the variation in any one of the key influencing characteristics that will influence an organisation's view of any potential innovation, namely their awareness and interest in the adoption of best practices in Sustainability.

In summary the Report provides essential information to help Suppliers optimise the effectiveness of their sales and marketing strategies and to underpin the successful development of new business opportunities amongst the CRC Participants.

Trade Bodies and Participants

The detailed breakdown of the size and maturity of the various CRC market segments provides useful information that can improve their understanding of the Sustainability 'maturity' of the market sector that they participate in.

The Report provides useful insights that support the benchmarking of a CRC organisation's performance with respect to the rest of their Sub-Sector in advance of the publication of the first league tables.

The Research provides a clear indication of where their peers in a given sector are likely to be in terms of their Sustainability journey. As a result this data will support the development of effective risk mitigation strategies regarding any reputational risks arising from the publication of information within the CRC League table later in 2011.

Policy Makers and Influencers

The key finding that the Private Sector Participants in the CRC are not as aware of the benefits of Sustainability as the Public Sector indicates a significant difference in the interest and maturity of practice between the Sectors. It also indicates that Sustainability is not perceived in the same way across the entire Public Sector with the NHS and the Police scoring lower on the indices than other Public Sector segments.

The implications are that a Leadership position by the Public Sector may not be sufficient to achieve the desired policy objectives of the legislation and that more education and other measures may be needed to see the Private Sector adopt best practices in Sustainable behaviour to the same level as the Public Sector.

The many Influencer groups and individuals can use the analysis in this report to inform, shape and help project their effect on the policy makers and the Participants.

Investors

The report shows which Sub-Sectors in the Private Sector are leading around each of the key Indicators. It also gives insights into which Sub-Sectors will most likely be in the chasing group in the Early Majority and trying to catch up. Conversely, it shows which Sub-Sectors are lagging behind in the stakes for demonstrating a strong path along a Sustainability agenda.

It is also possible to extend the view of investors into which of the attractive Sub-Sectors may have sub-contractors, supply chains and Suppliers of Sustainability services that are worth looking at as that Sub-Sector grows in this direction.

Any parties interested in gaining deeper insight regarding the extensive information on the CRC Participants amassed by the Cambium Method, please contact us at: crc@cambiumllp.com

SUMMARY OF THE CRC ENERGY EFFICIENCY SCHEME

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See Appendix 2 for a more detailed description of the CRC Energy Efficiency Scheme.

Implemented into UK law in April 2010, the CRC is a key measure in the government's steps to fulfil its commitments to reducing CO2 emissions.

It targets major energy users, with an entry criteria for Private Sector based electricity consumption greater than 6000 MWh, (equivalent to an electricity bill >£500k). All Public Sector bodies are included in the scheme regardless of size.

All participants in the scheme (2770 registered to date) are now required, on an on-going basis, to complete a 'Footprint Report' detailing their energy use for the year and then purchase allowances (in effect a tax) to cover their emissions.

Note: although the entry criteria are based on electricity usage, the footprint report and the allowances must cover all energy sources (e.g. gas, oil etc.). The timetable for the next year is as follows:

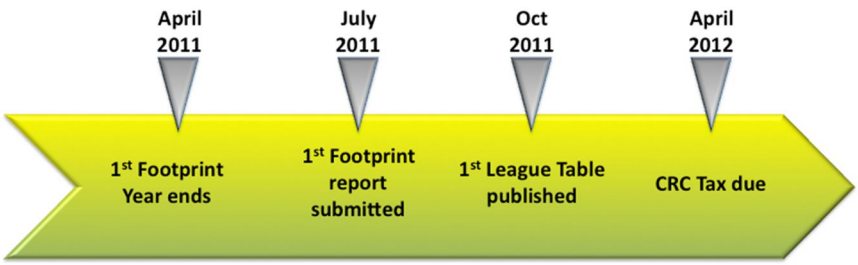


Fig 3 CRC Timetable

The scheme is scheduled to run until at least 2020

In financial terms it represents additional costs equivalent to 7 – 12% of an organisation's total energy bill. There are also substantial penalties for late or inaccurate reporting. See Appendix 6 for details. In addition the footprint reports will now be a matter of public record and as such represent a potential reputational risk or an opportunity to enhance an organisation's environmental credentials.

In terms of background, the Kyoto agreement put in place a binding commitment by the European Union to a 20% CO_2 emissions reduction by 2020 (based on a 1990 baseline). This translates to a 12.5% reduction in the UK. The CRC has received cross-party support and the UK has publically and globally expressed an aspiration for a 34% reduction against this same baseline.

Originally developed by the Department of Energy and Climate Change (DECC) the scheme is now being administered by the Environment Agency (EA) who have the remit to audit and apply fines for non-compliance.

THE CAMBIUM METHOD

THE CAMBIUM METHOD

Overview

The Cambium Method offers a unique and detailed means of ranking all Registrants in the UK Government CRC Energy Efficiency Scheme.

The following section describes the Cambium Method for developing scores for organisations by using analysis of web search results as an index of the organisation's degree of general interest in Sustainability.

The analysis required a means of measuring each CRC Registrant that was available, consistent, and robust and could be applied to all current and future Registrants. There are many challenges with using predefined recorded statistics, financial measures and other metrics that are readily available (or not) over the Internet or via research companies and public databases. None of them cover all Registrants. A Method was developed that met all the criteria above. This is the Cambium Method.

Summary of the Method

A precise vocabulary is used to describe the Method and definitions of the words used can be found in the table at the end of this section – see page 26.

Segmenting by Indicator Analysis

The analysis in this report is based on a measure of the interest level shown by individual CRC organisations on specific key Indicators of the level of adoption of General Sustainable business practices. In this context the definition of General Sustainability is that used by the Brundtland Commission of the United Nations on March 20, 1987:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

General Sustainable business practices therefore seek to adopt business practices consistent with this definition. The Indicators used in this Methodology map out the progression of a typical organisation as they engage deeper upon an agenda that supports best practice in general Sustainability. The Cambium Method is used to explore the use of these Indicators in CRC organisations.

The approach has been validated through a lengthy and rigorous analysis of the research Method, enabling the search criteria to be optimised in order to provide meaningful comparative results. The initial dimensions along which sustainable business practices have been compared in this Report include:

- *'Sustainability* '– a metric based on search terms that reveals an organisation's general attitude towards the environmental sustainability agenda, signposting their propensity to participate in low carbon economies.
- *'Carbon'* – a metric based on search terms that identifies actions taken by an organisation to improve environmental performance through the measurement, reporting and verification of carbon emissions.
- *'Social Awareness'*- a metric based on search terms that identifies another important dimension of sustainability: corporate social responsibility.
- *Environmental ROI* – a metric based on search terms that identifies the extent to which sustainability initiatives are quantified by an organisation in terms of the financial value ascribed to their environmental and social benefits.

Measuring the Indicators

- Relative measure. The measurements are based on how much activity there is on the internet re a given Organisation based on regarding the frequency of discussion within and about an Organisation in these areas and not the absolute amount of discussion. Absolute values would favour the key Indicators in relation to the overall activity of Organisations the organisation on the web.

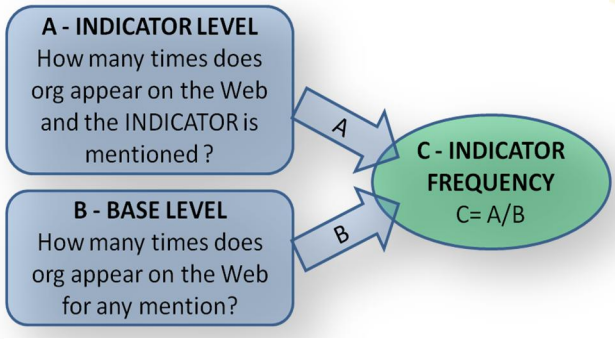


Fig 4 Calculating Indicator Frequency

- In order to define a relative value, the first step is to measure a Base Level (B) of activity for each organisation. This is the number of Web Search results for each Organisation only using the exact organisation name.
- This base level records the amount of search results recorded for discussions by the Organisation themselves or by others mentioning them.

Indicator Level

- Then, for a given Indicator the web Indicator Level (A) is measured by web searches for the organisation. How many times does that organisation appear in searches for that Indicator?

Indicator Frequency

For each organisation, the Indicator Level (A) is divided by the Base Level (B) to give the Indicator Frequency (C). This is a measure of how active this organisation is in the area of this Indicator.

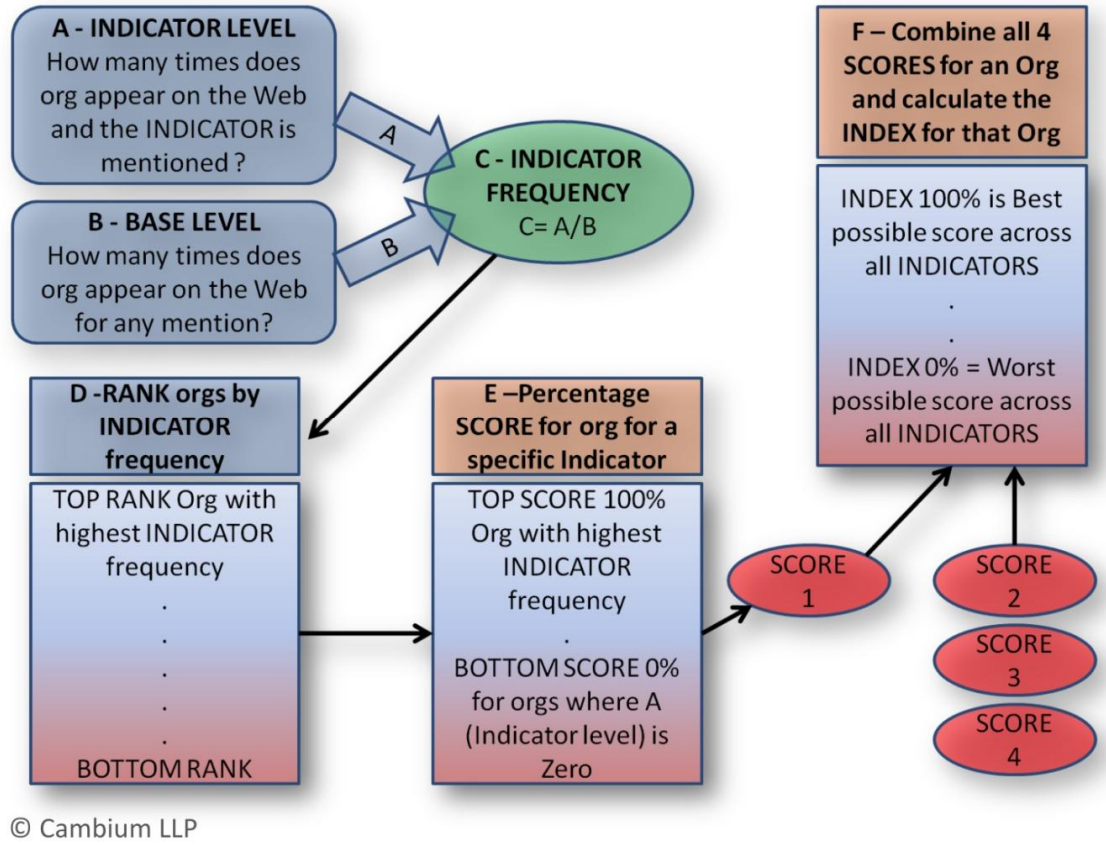


Fig 5 Flow diagram of the Cambium Method

Indicator Scores

- RANK - All the organisations are given a Rank (D) from the highest frequency for an Indicator to the lowest frequency (often found to be zero).A A percentage is then assigned to an Organisation, the Indicator Score (E). The highest ranked getting 100% and the lowest being 0%. All organisations with an Indicator frequency of zero (i.e. no Indicator web search results) are made equal-last on 0%. This generates a league table of the organisations for a given Indicator.

The Cambium Index

- The Cambium Method is used to measure four different Indicators for each organisation.
- Given a large number of organisations it is also possible to measure the Coverage of an Indicator. This gives the percentage of organisations that make at least one use of that Indicator. By definition, the rest make no reference to that Indicator at any time.
- By combining these Indicator scores for an organisation, it is possible to calculate a single Cambium Index value.
- The Indicators scores are combined by giving more weight to the advanced/least used Indicators compared to the common Indicators thus highlighting leadership or deeper activity in the area being researched.

- It is better to use the data to help define the Indicator weighting values rather than make arbitrary choices.
- In this case, each Indicator weighting value was chosen by using 1 divided by the Coverage value. This means for example, that a high Coverage value of 80% would have a weight of 1/0.8 which is 1.25 and a low coverage value of 25% would have a weight of 1/0.25 which is 4.0.
- The Cambium Index is then calculated by taking each Indicator Score, multiplying by the Indicator Weighting Value, then summing this across all four Indicators.

Sampling the CRC Registrants to assess interest in Sustainability

The Cambium Method has been applied to the CRC organisations to enable the assessment of an Organisation's attitude to the adoption of sustainable business practices. In turn this provides a sense of their likely response to the elevated reputational exposure and risks created by the CRC.

The rest of this section describes how the Cambium Method was applied to a range of Indicators that enabled the assessment of an organisation's interest level in General Sustainability

Sector Analysis

- In this application of the Cambium Method, the organisations are the CRC Registrants.
- This report is looking at the different behaviours and possible segments of the Sub-Sectors, both Private Sectors and Public Sectors and not individual Registrant in the CRC scheme.
- In order to define values to a reasonable accuracy for any given sub-sector, a sample must be made of a given and different number, for each sub-sector by well-known statistical techniques that gives a 94% confidence level in the results. The answers are +/- 3%. This is accurate enough when it can be seen in the data that the best Sub-Sector is 200% better than the worst so this 3% variation makes little difference overall.
- Many months were spent researching over 60 possible Indicators that would create a spectrum across the Registrants and show who were most or least advanced down the General Sustainability route. A small subset of these Indicators was chosen to perform the measurements and create the analysis.
- Time based analysis of Index "drift". Analysis showed that on average, the measurement for any given Registrant for an Indicator only varied up or down by up to 1.1% a week and then that was mostly for middle-ranking Registrants. The high and low scorers remained even more consistent over time than that, with less than 0.3% variations per week. The good ones stayed good and the bad ones did not get much better.
- To avoid even this small variation, a team of Researchers did all the measurements for any given Indicator in fewer than four days per Indicator.
- Across the CRC organisations the highest coverage for an Indicator was 88% for a common one in wide use and our lowest was 27% for a more specialised Indicator mostly used by companies more advanced in their general attitude to Sustainability. The total number of CRC Registrants now stands at 2770 as of March 2011. We measured to meet the 94% confidence limit criteria it required measuring 980 random organisations from across the population in detail to derive sufficient data to calculate each sub-sector value.

- The smallest sub-sector had 24 Registrants so all of these had to be measured. The largest single sub-sector had 744 Registrants so only 86 random organisations needed to be measured to provide the averaged data for that sub-sector to within the +/- 3% criteria. This same standardised statistical approach was used on every Sub-Sector to achieve the same confidence level.
- The sample was chosen by assigning all CRC organisations a unique number and then using a random number generator to pick the organisation names within each Sub-Sector.

Grouping Organisations into Market Segments using their Cambium Index

These metrics are correlated in the Cambium Methodology to create the Cambium Index providing a relative ranking of organisations and the sectors within which they operate in terms of their strategic intent and their ability to execute. Organisations within each sector are then divided into four Segments;

- Leaders
- Early Majority
- Late Majority
- Laggards

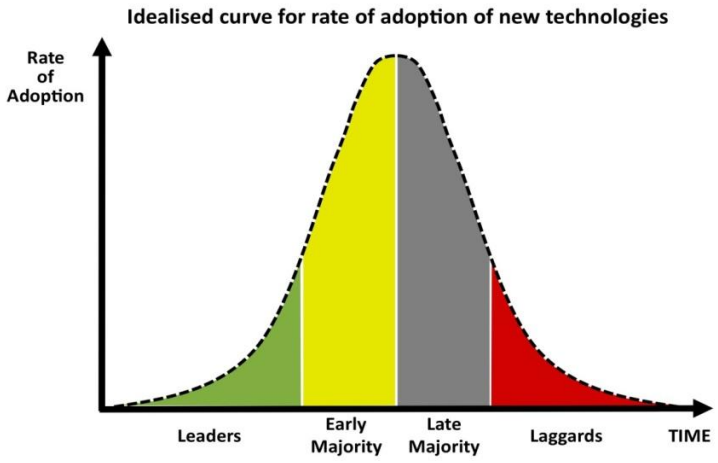


Fig 6 The Rate of adoption curve

An idealised graphical representation of this segmentation is shown above. It draws on the well-known Technology Adoption Lifecycle model (*NB The Cambium analysis combines the segments often referred to as 'Innovators' and 'Early Adopters' into a single Leaders segment*). The model is typically used to describe the penetration of a new technology in terms of the progression of the types of consumers it attracts during its useful life.

In this instance it is applied by using the size of the Cambium Index score to identify those CRC organisations within the market that have shown a response to the adoption of Sustainable business practices. In this variant a high Cambium Index score indicates a higher more sophisticated level of Sustainability response or interest, whereas a low score indicates limited awareness of Sustainability as a best practice or policy.

A detailed description of the four segments is provided below.

1. Leaders Have a Cambium Index > 80% of the best score
   These are the participants who have scored highly for all 4 key terms. Organisations in this category can be expected to have well-developed strategies to implement Sustainable business practices and would be therefore interested in propositions from Suppliers that supported these objectives. A high score is likely to also indicate a higher degree of perceived reputational risk from the CRC, since these Sustainability strategies are likely to have been communicated to external and internal stakeholders.

   This category accounted for 5% of the Private Sector and 42% of the Public Sector.

2. Early Majority 50%- 80% of the best score
   This category relates to organisations that have scored highly in 2 or 3 of the key terms. Their profile was similar to the leaders except their focus was usually only on either their operational carbon footprint or their CSR activities. In these cases more investigation of the individual organisation would be required by a potential supplier to identify if a value proposition relating to the mitigation of reputational risk or of improved energy efficiency would resonate best with an organisation in this category. This group accounted for 13% of the Private Sector and 37% of the Public Sector.

3. Late Majority 20%-50% of the best score
   This group represents the organisations with only modest scores in 2 or 3 terms covered. Their profile suggests that activities and investment around Sustainability is more focused on cost control with a limited emphasis on reputation management.

   This group accounted for 26% of the Private Sector and 11% of the Public Sector.

4. Laggards < 20% of the best score
   This group is the organisations with low and in some cases zero scores against the 4 key terms. This lack of activity has been interpreted as an indication that the organisational activities and priorities are not yet aligned around the Sustainability agenda.

   This group accounted for 57% of the Private Sector and 10% of the Public Sector.

Definitions used in the Cambium Method

Fig 7 Cambium Method Glossary

Word Used	Definition
BASE LEVEL	The number of Web search results for an organisation or subject for all/any activity
CAMBIUM CRC INDEX	Our unique Cambium Index value assigned to a CRC Registrant for their degree of movement along the general Sustainability journey.
CAMBIUM INDEX	A Cambium score derived from the Cambium Method (can be applied to a wide range of subject matter and targets). This Index uses Indicator weighting values for each Indicator Frequency
CAMBIUM METHOD	A Method of developing a ranking for a subject or organisation using relative web search results
COVERAGE	What percentage of organisations mention a given Indicator
EARLY MAJORITY	Have a Cambium Index between 50%- 80% of the best score
LATE MAJORITY	Have a Cambium Index between 20%-50% of the best score
INDICATOR	One or more exact terms used in the web searches
LEADERS	Have a Cambium Index more than 80% of the best score
LAGGARDS	Have a Cambium Index less than 20% of the best score
REGISTRANT	A UK Organisation registered on the UK CRC Scheme
SECTOR	Highest level grouping of Registrants (I.e. Public or Private Sector)
SEGMENT	Four divisions as classified by the Cambium Index (I.e. Leaders, Early Majority, Late Majority or Laggards)
SUB-SECTOR	Types of organisations within a sector (E.g. NHS, Police, Water, Retail ICT etc.)
ORGANISATION	An organisation or subject being studied by the Cambium Method
TARGET ORGANISATION NAME	The exact name used by the registrant as part of their CRC filing data
INDICATOR FREQUENCY	What percentage of the “base level” does the “Indicator level” represent As an equation, Indicator Level/Base Level
INDICATOR LEVEL	The number of Web search results for An organisation for a given Indicator
INDICATOR SCORE	Where does an organisation sit on the league table of Indicator frequency as a percentage value

Summary of section

- The Cambium Method is based on four key Indicators of web-based activity and interest in a given topic around general Sustainability
- The Method uses web search results for specific organisation names and these indicators
- This has been applied to the 2770 organisations in the CRC database
- A sample of the database was chosen to derive results for all the 19 Sub-Sectors to within +/- 3%
- Each Sub-Sector was then divided into four market segments showing who are Leaders, Early Majority, Late Majority and Laggards

CRC PARTICIPANT ANALYSIS

CRC PARTICIPANT ANALYSIS

The qualification and registration rules for individual Registered CRC organisations have been covered in the Summary of the CRC Energy Efficiency Scheme – see appendix 2 (page 76).

The Market Segmentation of Registered CRC Organisations

This preliminary analysis reveals that amongst the 2,770 Participants in the CRC Scheme, the Private Sector CRC organisations outnumber the Public Sector CRC ones on a numerical basis by more than 3:1 with 2,132 Private Sector to 638 Public Sector CRC organisations.

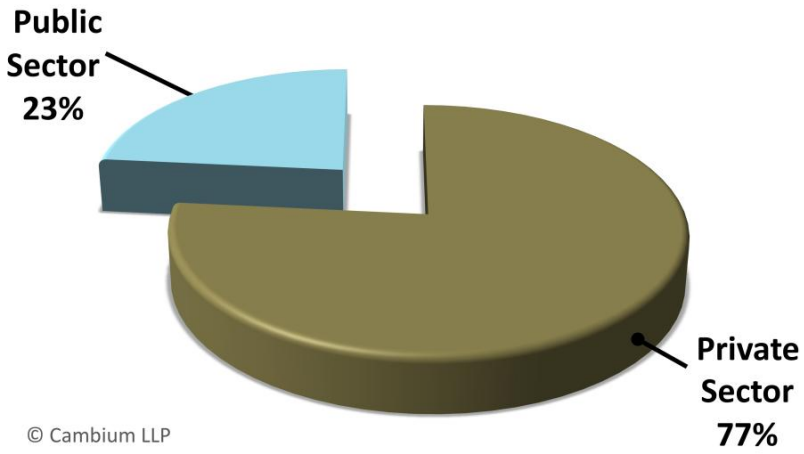


Fig 8 Proportions of Public and Private Sector organisations

Our analysis of the CRC organisations commenced with the separation into Private and Public Sector due to the differences in both the drivers and processes of procurement in operation between the Public and Private Sector. This initial segmentation decision was then further validated by the analysis of the Sustainability attitude scores on pages 85 to 88.

Having completed this initial segmentation it is then possible to look at the component Sub-Sectors for both the Private and Public Sectors.

In order to analyse the CRC organisations at this Sub-Sector level, we adopted the following Segmentation rule. Each individual organisation has been allocated to a Sub-Sector reflecting its primary activity rather than its legal or organisational relationship to other CRC organisations. For example Hospitals and NHS trusts have been allocated to the NHS segment, as opposed to the Pharmaceutical & Healthcare segments or the Central Government segment. Individual schools and colleges that have registered have been allocated to the Academic sector, even if they are managed by a Local Authority.

This approach is consistent with the flexibility for reporting allowed by the CRC legislation itself and also allows the creation of segments with similar energy and emissions management challenges to be addressed more easily by potential Suppliers of relevant goods and services.

It is important to recognise that although a Sub-Sector may be smaller numerically than another in terms of CRC organisations, this does not necessarily reflect the usage of energy (and hence Carbon footprint) of individual organisations or in the whole Sub-Sector

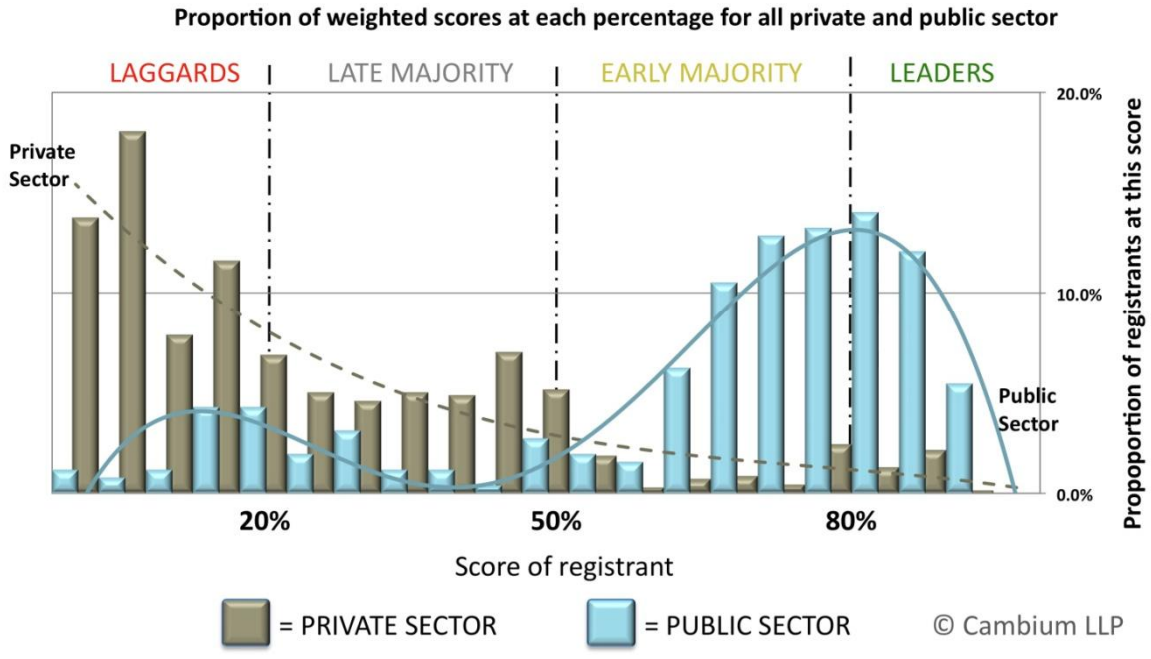
Nonetheless this segmentation does enable Suppliers of relevant innovations or services to assess the number of potential audiences and opportunities that may exist in each Sub-Sector.

Comparison of Private and Public Sector Results

Throughout this study the same Methodology and Indicator analysis is applied to both the Public and Private Sectors as a single population. This showed very clearly that the Public Sector has a higher propensity to communicate on the Indicators comprising the Cambium Index score relating to Sustainability. These Indicators were:

- *'Sustainability* '– a metric based on search terms that reveals an organisation's general attitude towards the environmental sustainability agenda, signposting their propensity to participate in low carbon economies.
- *'Carbon'* – a metric based on search terms that identifies actions taken by an organisation to improve environmental performance through the measurement, reporting and verification of carbon emissions.
- *'Social Awareness'*- a metric based on search terms that identifies another important dimension of sustainability: corporate social responsibility.
- *Environmental ROI* – a metric based on search terms that identifies the extent to which sustainability initiatives are quantified by an organisation in terms of the financial value ascribed to their environmental and social benefits.

. This trend shown by their Cambium Index Scores is shown in the chart below.



This large gap is interpreted as the fundamental differences in the respective organisations and how they present themselves to their stakeholders. In the case of the Private Sector commercial factors such as profit, revenue growth, market share, dividend payments, product developments etc all compete alongside all the other activities that organisations (Public and Private) are doing

and communicating to the outside world. Further research is required to test and verify this interpretation.

It can also be argued that like other legislatively driven changes (For instance the various. Equality legislation introduced in the past 25 years), the Public Sector has a track record of taking the first steps until the changes required have become business as usual. In view of the differences in response recorded by the Cambium Method our report analyses the response within the subsectors of Private and Public Sector CRC organisations separately.

Variation in Indicators between the Public and Private Sectors

The Research is based on the four Indicators (see above) of discussions within and about any organisation. By looking at an Indicator across a whole population such as the Public Sector, it is possible to look at the trend of that Indicator across the complete range of segments described on page 24 in figure 6 showing the Technology Adoption Curve as we go from Laggards up to Leaders. This analysis provides great insight regarding the attitudes, intentions and potential activity levels in that population as they relate to each of the four Indicators.

In the first chart below for all the Public Sector, the horizontal axis plots the Cambium Index Scores from Right to Left following the Laggards up to the Leaders based on their Cambium Index Scores. The dotted line shows the bell curve that is often found when looking at how populations adopt products or ideas, there often being a few Laggards, many in the middle zone and a few Leaders and we have noted those labels along the horizontal axis.

The vertical axis is a measure of the frequency of discussion about a specific Indicator with the highest at the top being 100% (if they spoke of nothing else!) down to levels of around 0.01% which means that for every 10,000 discussions in/about an organisations, the Indicator term is only mentioned once.

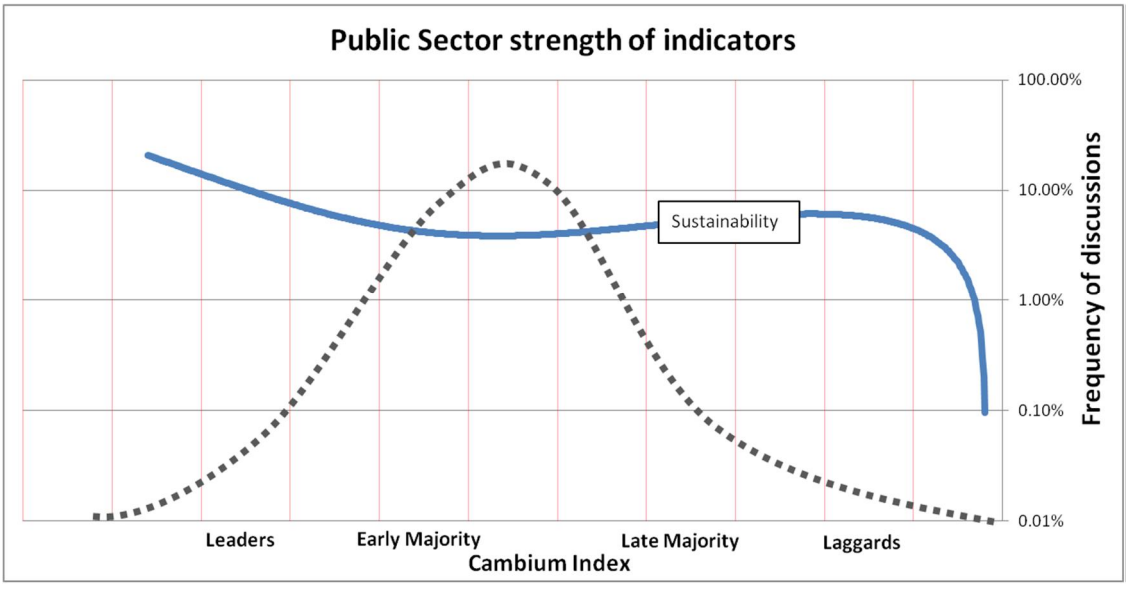


Fig 10 The Sustainability Indicator Curve

The first curve above shows how the frequency of discussion around the "Sustainability" Indicator varies as organisations go from Laggards to Leaders.

For "Sustainability" the curve rises steeply on the right amongst the Laggards and quickly reaches a frequency of discussion at around 10% (1 in 100) of the time in the average Public Sector organisation even at very low Index Scores amongst some Laggard organisations. That frequency of discussion stays at around 10% to 15% as the populations is rated as Late Majority, Early Majority and then into the Leaders. We can infer from this that the subject is very common across the Public Sector, does not differentiate much between Leaders down to many Laggards and there is a "natural" level of Web discussion on this subject at around 1 in 10 of all discussions in most of the Public Sector.

When we add the other three Indicator curves for the Public Sector we see a different story.

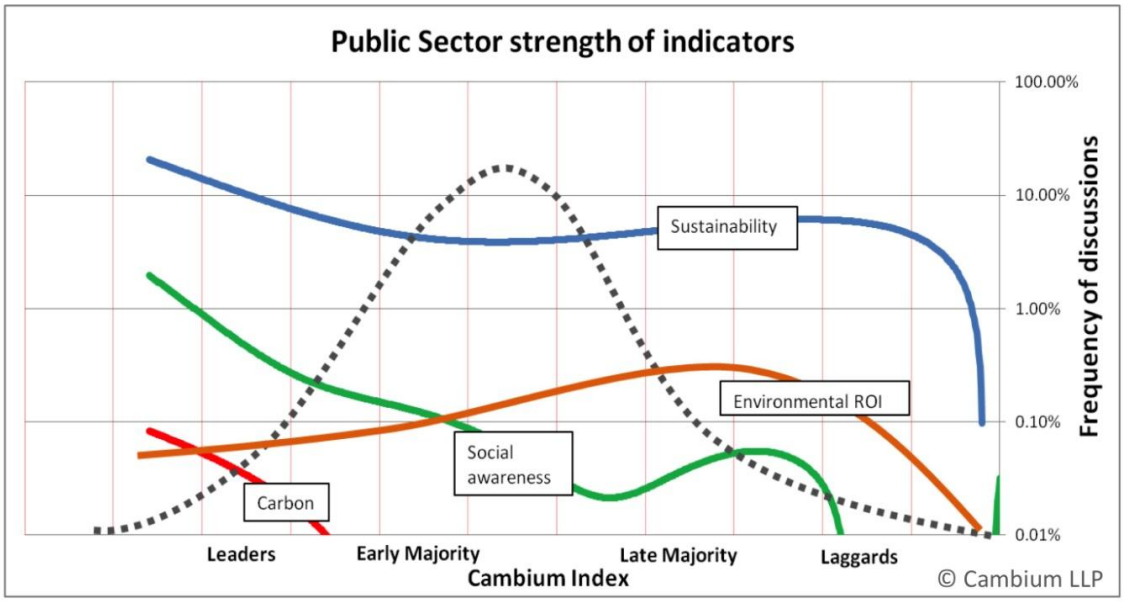


Fig 11 All four Indicator Curves for the Public Sector

As we have seen in the earlier chart, as we go from Laggards (right) to Leaders (Left) it can be seen that "Sustainability" is the earliest Indicator and it rises quickly to a high level of 10%-15% of all web search results for the Public Sector.

The second Indicator to come into play is a rise in discussions around "Environmental ROI" that peaks in the centre at around 0.5% (approx 1 in 200) then falls away amongst the Leaders. Deeper examination of the data for the Public Sector shows that this is mostly due to the NHS being low on the Index but high in discussions on "Social Awareness" and "Environmental ROI".

The next Indicator to come into play is "Social awareness" with an initial peak at a frequency of discussion just below 0.1% (approx 1 in 2,000) as we move into the Late Majority population. This is due again to the effect of the NHS data at the start of the curve but it falls after that effect before the trend starts to move up again across the rest of the Public Sector.

Finally and of great interest is the fact that the Public Sector has relatively low and few discussions around the "Carbon" Indicator at a frequency below 0.1% (1 in 1,000) and this is

nearly always amongst the Leadership segment. This lack of focus upon Carbon management within the Public Sector will be addressed later in the analysis.

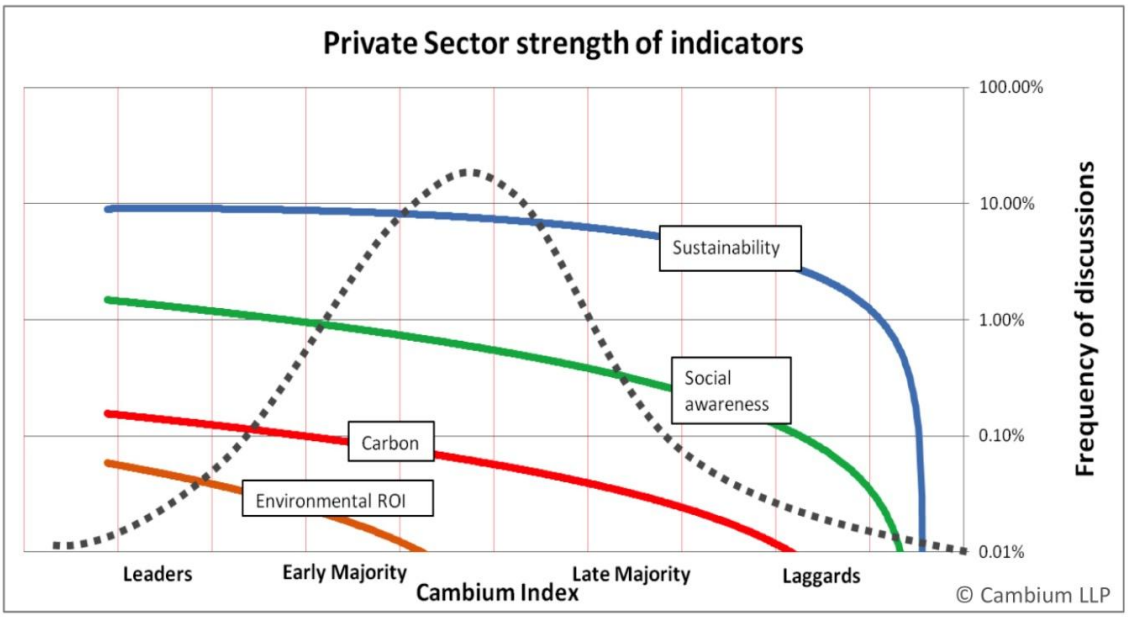


Fig 12 All four Indicator Curves for the Private Sector

From the above summary of the whole Private Sector data, it can be seen that the four Indicators each come in to play rising progressively and smoothly as we go from Laggards on the right, to Leaders on the left. They do not overlap and this suggests an even rate of change in each Indicator signifying that no single part of the Private Sector has a dominating view on these Indicators that could unduly influence the whole Sector.

At first the only Indicator discussed by the Laggards is "Sustainability" with the first 10% of the index only on that Indicator at the extreme bottom right of the curve. This eventually rises to a density of being mentioned in 10% (1 in 10) of all the organisations web search results.

Next into play and at a lower frequency for the Late Majority, is an increased level of discussion on "Social awareness" which steadily rises to a maximum of 1% (1 in 100) amongst the Leaders.

The third Indicator coming into play is "Carbon" and is contributed more by the Early Majority and reaches a final level of discussion around 0.1% (1 in 1,000).

The lowest frequency Indicator and last to be mentioned is ""Environmental ROI" mostly amongst the Leaders segment at a frequency of 0.01% (1 in 10,000) to 0.1% (1 in 1,000) of discussions. Detailed charts like the above are available for all 14 Sub-Sectors in the Private Sector. General points to be made about results for the four Indicators. It should be noted that the Public Sector and Private Sector are two very different populations that are difficult to compare as a whole since the Public Sector has higher Cambium Index values.

Consequently, the following analysis reviews how similar segments such as those in the Early Majority within the Public and Private Sector are discussing any specific component Indicator.

- Sustainability – Public Sector mentions 99% / Private Sector mentions 85%
  This is the first and most common Indicator to be mentioned by all Sub-Sectors across the Private and Public Sector. It quickly reaches a level of discussion at around 10% of the organisations presence on the Web.

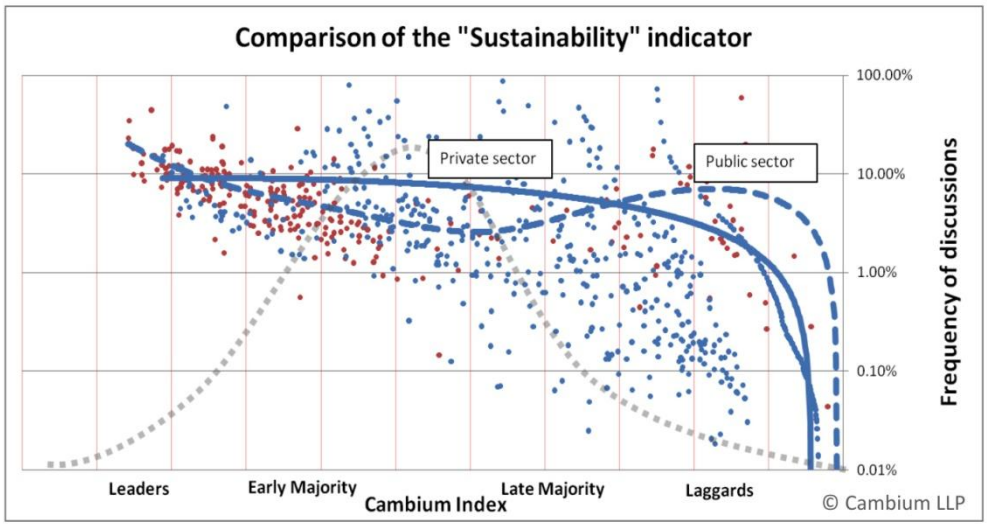


Fig 13 Comparison of Sustainability Indicator Curves for Public and Private Sectors

- Social awareness – Public Sector mentions 96% / Private Sector mentions 61%
  Initially, this is mentioned second by the Private Sector and third by the Public Sector but is second amongst the Leaders in both sectors reaching a level of discussion at around 1% (1 in 100). The Public Sector curve is shifted to the left due to most of the organisations being in the Leaders and Early Majority segments.

  Of particular note is that within the Private Sector Early and Late Majority segments there is a more frequent discussion of Social awareness than the Public Sector Early and Late Majority segments.

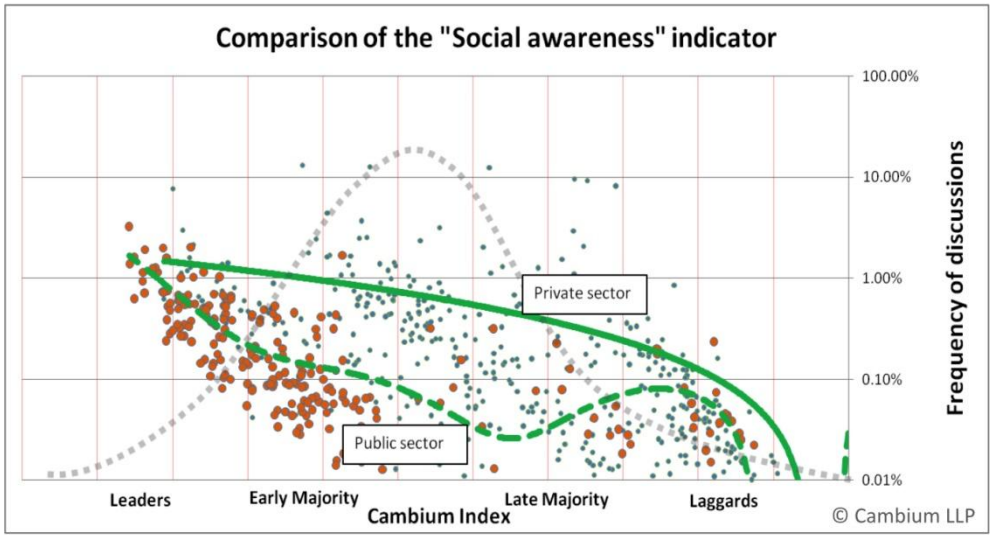


Fig 14 Comparison of the Social Awareness Indicator curves for Public and Private Sectors

- Carbon – Public Sector mentions 82% / Private Sector mentions 36%

  This Indicator comes in third and at a much earlier stage in the Private Sector compared to a late mention by the Leaders and Early majority in the Public Sector.

  This Indicator has the biggest difference between the two sectors within each of the Leaders > Laggards segments and we discuss this in more detail later in this section. The Public Sector curve is pulled to the left due to most of the organisations being in the Leaders and Early Majority segments.

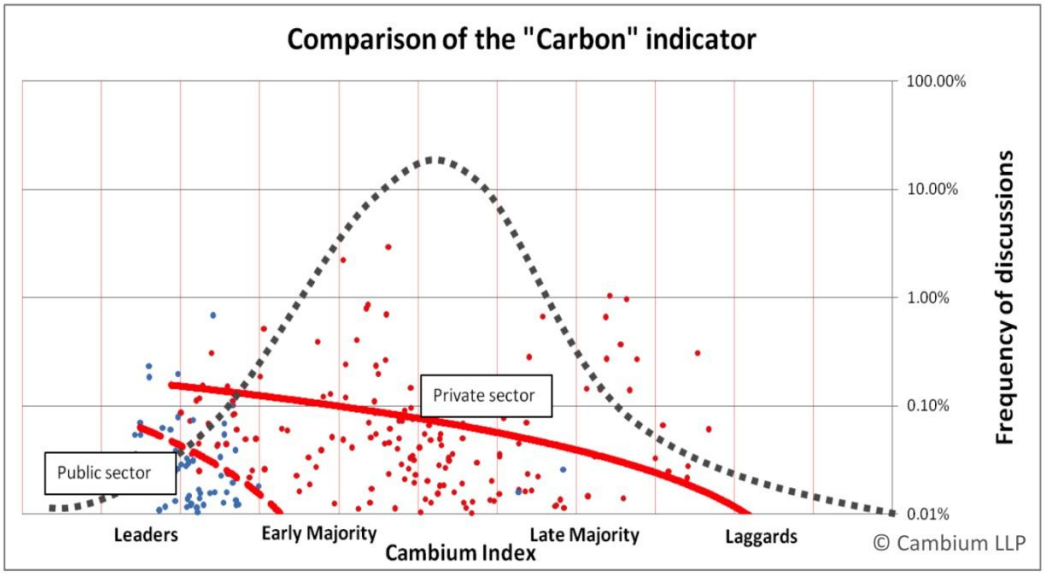


Fig 15 Comparison of Carbon Indicator Curves for Public and Private Sectors

Within the Private Sector Early and Late Majority segments there is a more frequent discussion of "Carbon" than the Public Sector Early and Late Majority segments. This indicates a broader level of interest in Carbon management in the Private Sector than the Public Sector.

Environmental ROI – Public Sector mentions 80% / Private Sector mentions 9%

This is the converse of Carbon. There is early interest (mostly in the NHS) followed by a declining level of discussion across all of the Public Sector. By comparison there is a very low level of discussion, mostly amongst the Leaders, in the Private Sector.

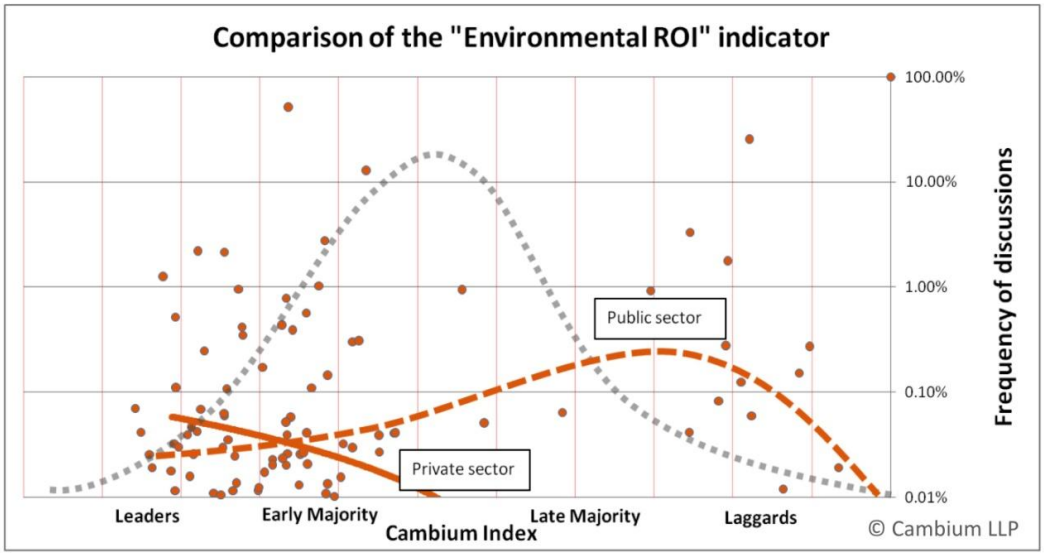
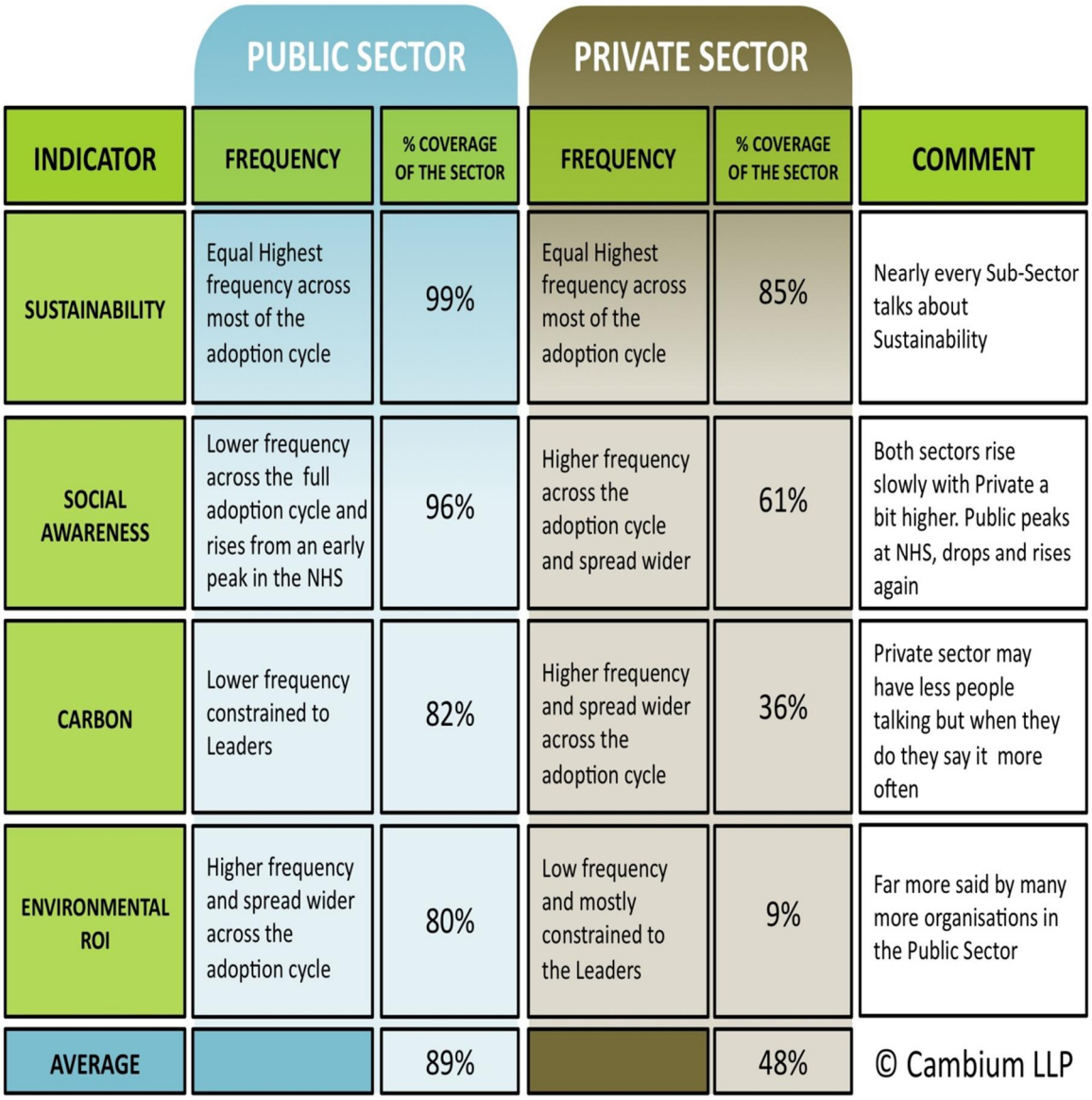


Fig 16 Comparison of the Environmental ROI Indicator Curves for Public and Private Sectors

Summary of Indicator Scores for Public and Private Sectors Over the Adoption Cycle



	PUBLIC SECTOR		PRIVATE SECTOR		
INDICATOR	FREQUENCY	% COVERAGE OF THE SECTOR	FREQUENCY	% COVERAGE OF THE SECTOR	COMMENT
SUSTAINABILITY	Equal Highest frequency across most of the adoption cycle	99%	Equal Highest frequency across most of the adoption cycle	85%	Nearly every Sub-Sector talks about Sustainability
SOCIAL AWARENESS	Lower frequency across the full adoption cycle and rises from an early peak in the NHS	96%	Higher frequency across the adoption cycle and spread wider	61%	Both sectors rise slowly with Private a bit higher. Public peaks at NHS, drops and rises again
CARBON	Lower frequency constrained to Leaders	82%	Higher frequency and spread wider across the adoption cycle	36%	Private sector may have less people talking but when they do they say it more often
ENVIRONMENTAL ROI	Higher frequency and spread wider across the adoption cycle	80%	Low frequency and mostly constrained to the Leaders	9%	Far more said by many more organisations in the Public Sector
AVERAGE		89%		48%	© Cambium LLP

Fig 17 Summary of Indicator Scores for Public and Private Sectors

Why the Cambium Index Scores for the Public Sector rank higher than the Private Sector

It is clear from the Cambium Index Scores, that the Public Sector has a much higher average score (66%) than the Private Sector (23%) (See chart 1 on page 8 showing distribution of the populations).

However, there are a number of Indicators on which the Private Sector scores well across the adoption cycle. How are these apparent conflicting differences reconciled?

1. There is a large proportion of the Private Sector that does not appear on the Indicator curves (approx 15% of the whole sector) as they have no score on any Indicator. This brings down each Private Sub-Sector average where this happens, especially in Manufacturing.
2. On average the Public Sector mention the Indicators 89% of the time but this is only 48% for the Private Sector
3. We can disregard the Sustainability Indicator when comparing these two groups since they behave in much the same way at this high level view of the sectors.
4. In the case of the Carbon Indicator there is a wider and higher level of discussion in the Private Sector across the adoption cycle but point (1) above and only 36% coverage for this Indicator severely reduces the impact of this level of discussion.
5. For the Environmental ROI Indicator there is a wider and higher level of discussion in the Public Sector across the adoption cycle and nearly all of these contribute to the Public Sector high indexes. There are very few Public Sector organisations that fail to mention all four Indicators (approx 3%).
6. Overall, the Public Sector talk about every Indicator across the adoption cycle enough to raise the average for the whole sector a lot but where the Private Sector lead in some Indicator frequencies, they are not consistent enough to score as highly as a group.

Conclusions from the Overall Analysis of the CRC participants

From our analysis of the Cambium Index scores and the behaviour of the component Indicators across the whole populations of the Public and Private Sector Participants, we are able to reach a number of clear conclusions.

The Cambium Method is a valid method of assessing sustainability in emerging markets e.g. CRC. It also has general applicability to other markets and sectors.

The Report highlights a number of ways in which the Cambium Method can be applied to reveal deeper insights about the Sustainability dynamics of the emerging CRC market. It is a method that does not require costly and time consuming surveys or the publication and analysis of publicly available data. It provides valuable, qualitative early insight to support effective decision making in the early phase the CRC market enabling first mover advantage for those prepared to act upon it.

The CRC Participants have been segmented for the first time publicly. It is now possible for Participant organisations to understand the size and composition of their peer group. The report provides essential information to analyse the likely response characteristics of the other

Participants with which they will be compared and to develop reputational risk management strategies

There are major differences between the Public and Private Sector populations in the CRC scheme. There are therefore limited grounds for comparing organisations across these boundaries and many potential dangers in doing so. This strongly supports the need for two different league tables for tracking the performance of the Participants.

There are sharp and striking differences in the general interest level in Sustainability (as measured by the Cambium Index Scores) between Private Sector and Public Sector organisations. 42% of the Public Sector is classified as Leaders on the Index whereas the Private Sector only has 5.2% in the Leadership segment

Benchmarking metrics in the Public Sector are likely to feature measures of Sustainability. If you are a Public Sector participant understand what your policy and strategy is to ensure performance is in line with peers.

Characteristics of Products and Services regarding General Sustainability may be well received by the Public Sector and less well by the Private Sector. Suppliers need to tune their messages regarding Sustainability appropriately dependent upon the segment that they are addressing

Response and League tables for the CRC Participants can be compared between market segments to provide meaningful measures of benchmarking best practices

The ratio of Private to Public Sector organisations in the CRC scheme is over 3 to 1. There is therefore a bigger overall opportunity for the adoption of general Sustainability innovations in the Private Sector. Suppliers should take this into account in optimising the selection of target markets to maximise long term market potential returns on investment

The adoption /interest curves for General Sustainability Indicators both in the Private and Public Sectors do not follow Normal Distributions. All CRC stakeholders therefore need to consider the adoption curve for each Sector and Sub-Sector. They should analyse the data, select appropriate targets to ensure that optimise their opportunity.

Although the opportunity in the Private Sector is larger than the Public Sector, it is dominated by Manufacturing and is also more diversified and due to the different energy dynamics in play in the Private Sector. As a result, marketing messages will need to be customised more widely in the Private Sector than the Public Sector. Small innovators will need to assess if they can succeed in all markets and must determine which are the most accessible and addressable to match their resources.

Investors can now know the relative size and shape of the market for new innovation being created by the CRC legislation. Relative size of all markets for the innovation can be determined enabling better assessment of market opportunity and potential

Public Sector score relatively low across the adoption cycle on Carbon because most are in the Leaders (Relative to Private Sector). Carry out a risk assessment / benchmarking exercise (with Private Sector).

Public Sector may not be as active in Energy Management as the Private Sector which could lead to exposure on the league tables. This is an opportunity for Carbon Management suppliers.

Summary of the CRC Participant Analysis Section

- ¾ of the CRC population are in the Private sector
- The Public Sector score higher because on average they mention the indicators 89% of the time compared to only 48% for the Private sector
- All sectors talk at a high level about the Sustainability Indicator
- The Private sector is stronger on Carbon and hence this shows a higher level of discussion for lower index organisations
- The Public Sector is stronger on Environmental ROI
- The Public and Private sectors should be in two different league tables

ANALYSIS OF THE PUBLIC SECTOR

ANALYSIS OF THE PUBLIC SECTOR

Public Sector Segmentation

Regardless of the size of the electricity bill, all Public Sector organisations are registered participants in the Carbon Reduction Commitment Energy Efficiency Scheme. This has been broken down into five sub-segments:

- Academia
- Central Government
- Local Government
- National Health Service (NHS)
- Police

The largest sector in terms of numbers of CRC organisations is the Local Government segment in terms of individual energy users, although it is likely that the major Central Government departments are likely to have the highest average energy consumption given their size and scope of operations.

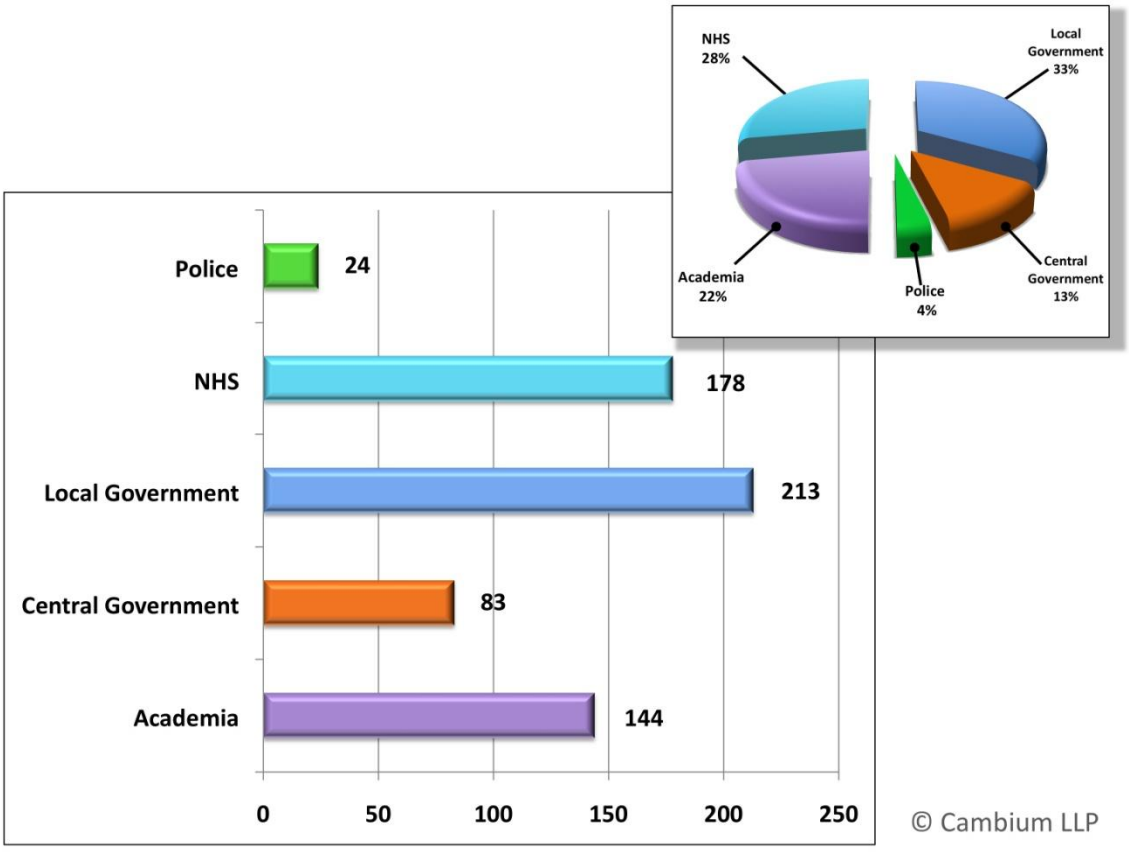


Fig 18 numbers of CRC Participants in Public Sub-Sectors

The number of individual CRC organisations within each sector is shown in the graphic above. The Sustainability scores of the Public Sector CRC organisations have been sumarised and allocated into one of the four categories of response, namely Leaders, Earl Majority, Late Majority and Laggards for each Sub-Sector. This is provided in Appendix 3, page 85.

Sustainability leadership within the Public Sector

Looking specifically at the Leadership analysis, the data shows a high percentage of Leaders with an overall average of 42% across the Public Sector as a whole.

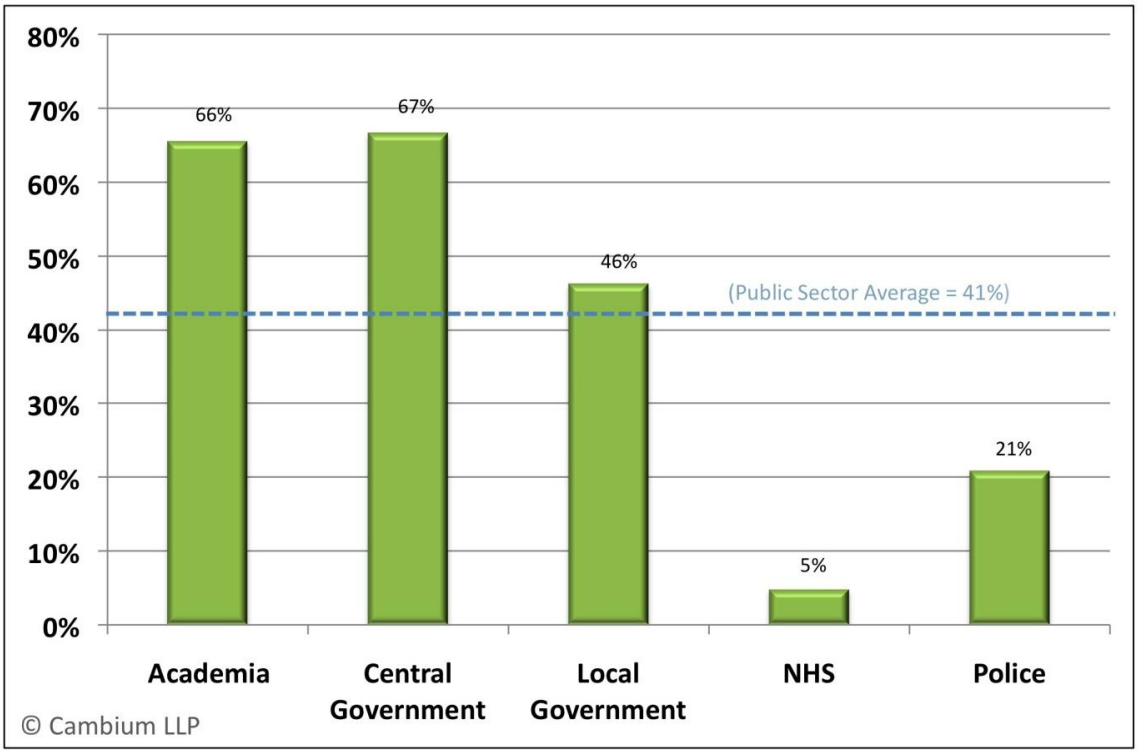


Fig 19 Proportion of each Public Sub-Sector that are in the Leaders segment

The largest percentage of Leaders is Central Government CRC organisations (67%), followed closely by the Academia Sub-Sector (66%). Local Government organisations came out close to the sector avarage with a percentage (46%).

The Police (21%) and the NHS (5%) scored significantly lower than the sector average and in fact were closer to the scale of scoring in the Private Sector. See Analysis of the Private Sector, in appendix 4 pages 86 to 88.

From a leadership position it is perhaps not surprising that Central Government and Academia have the highest proportion of Leaders given their shared interest in the leading edge of Sustainability policy. Central Government is clearly interested in demonstrating a leadership position in the adoption of best practices in Sustainability.

Academic interest in Sustainability may also reflect the fact that a large body of stakeholders belonging to a younger demographic group. Additionally Institutions with strength in Science, Engineering and technology innovation can be expected to have a strong interest in Sustainability.

For Suppliers, whilst the data indicates that there is a high interest in Sustainability in these market sectors, the ability to take action by adopting more Sustainable Innovations may be curbed in practice by the Government's drive to cut Public Expenditures. Academic Institutions may be more able to invest in these innovations by virtue of a diversity of potential funding sources other than the public purse.

Local Government has a relatively large proportion of Leaders, but less than Central Government. We infer from this that local considerations and political priorities will influence the level of focus upon Sustainability. Suppliers will need to consider this in determining the best targets within this Sector.

The fact that the Police have a lower that average score may reflect a higher operational focus on other Government targets, such as crime figures. For the highest cost of operation is salaries which may indicate why this has not received the same level of attention as other areas of the Public Sector.

In a similar vein the NHS has, recent years, been subject to a regime of process optimisation and targeting. This focus on other key metrics may also indicate why the NHS has the lowest percentage of Leaders.

Looking at the analysis of Leaders in terms of numbers.

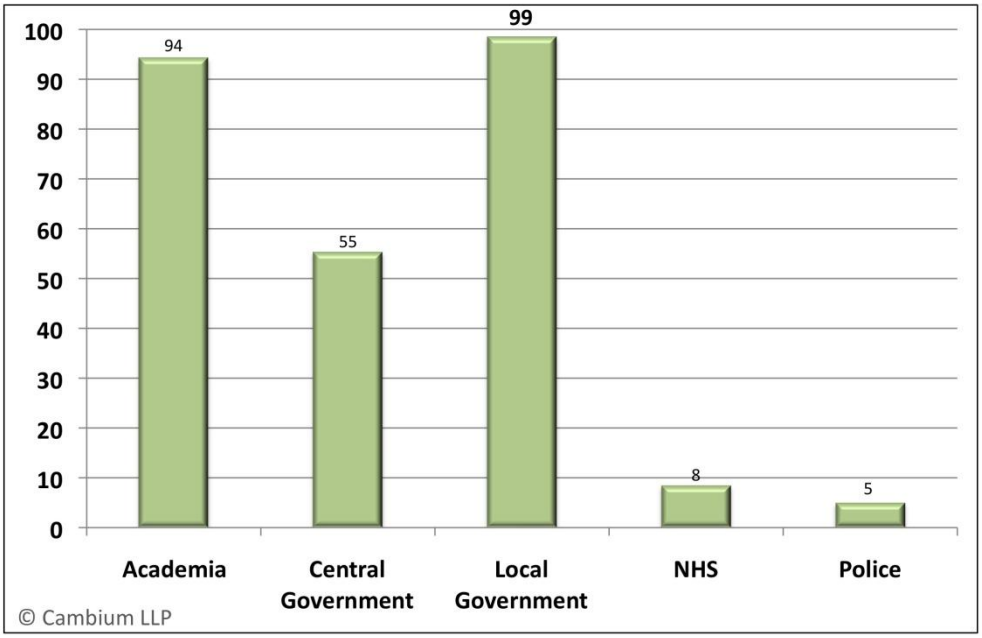


Fig 20 Total number of Leaders segment in each Public Sub-Sector

Although Central Government and Academia score highest in terms of the percentage of Leaders, the sector with the largest number of CRC organisations with a Leadership attitude towards Sustainability is the Local Government sector. Our analysis shows that this Sub-Sector has 99 organisations, which would be receptive to innovations offering benefits relevant to the achievement of Sustainability goals. This is closely followed by the Academia Sub-Sector which contains over 90 leaders and then Central Government has 55. Although these sectors are the largest in numerical terms the Leading organisations will not necessarily be the largest in terms of their use of energy and size of carbon emissions.

For suppliers who see the Public Sector as a major market the key finding is there are two main grouping in terms of attitude towards sustainability. Central Government, Local Government and Academia versus NHS and Police. This indicates that a single value proposition (even a broad based one) is unlikely to have the same appeal across the whole of the Public Sector.

For suppliers who traditionally trade in the Private Sector and are considering the Public Sector - the Sustainability Index for the Police and NHS is similar to that of the Private Sector. As such the themes and value propositions that have worked well in the Private Sector may have similar appeal to these Public Sector organisations.

By the same token, for suppliers already in the Public Sector, the themes and value propositions that have worked well for government (Central and Local) and Academia may not be as successful for Police and the NHS. A degree of tuning will therefore be required and where the supplier is already operating in both Public and Private Sectors there may be opportunities leverage that breath of experience.

Sustainability Laggards within the Public Sector

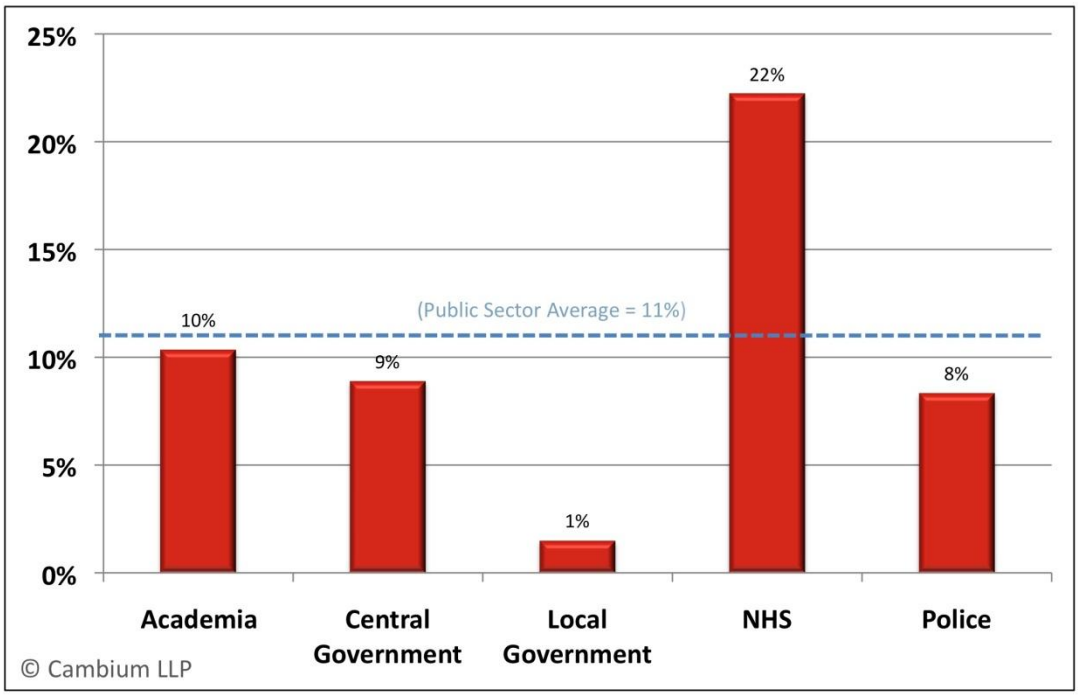


Fig 21 Proportion of each Public Sub-Sector that are in the Laggards segment

The breakdown of the percentage of Laggards (as defined in our Methodology, page 25) in terms of their Sustainability Index is shown here. The data indicates that the percentage of Laggards in the Public Sector CRC organisations is low with an average of only 10%. This compares favourably with the Private Sector where on average the equivalent percentage is 57%. Across the Public Sector the NHS has the highest percentage of Laggards, with 22% falling into this category. However, this percentage is still less than half of the Private Sector average percentage for Laggards. Of the other sectors, Academia, Central Government and Police all have a percentage of Laggards of around the Public Sector average. Local Government has the lowest percentage of Laggards according to our Methodology. This sector only has a percentage of 1.5%.

In analysing the actual numbers of CRC organisations in each of these Categories following breakdown is revealed across the Sub-Sectors.

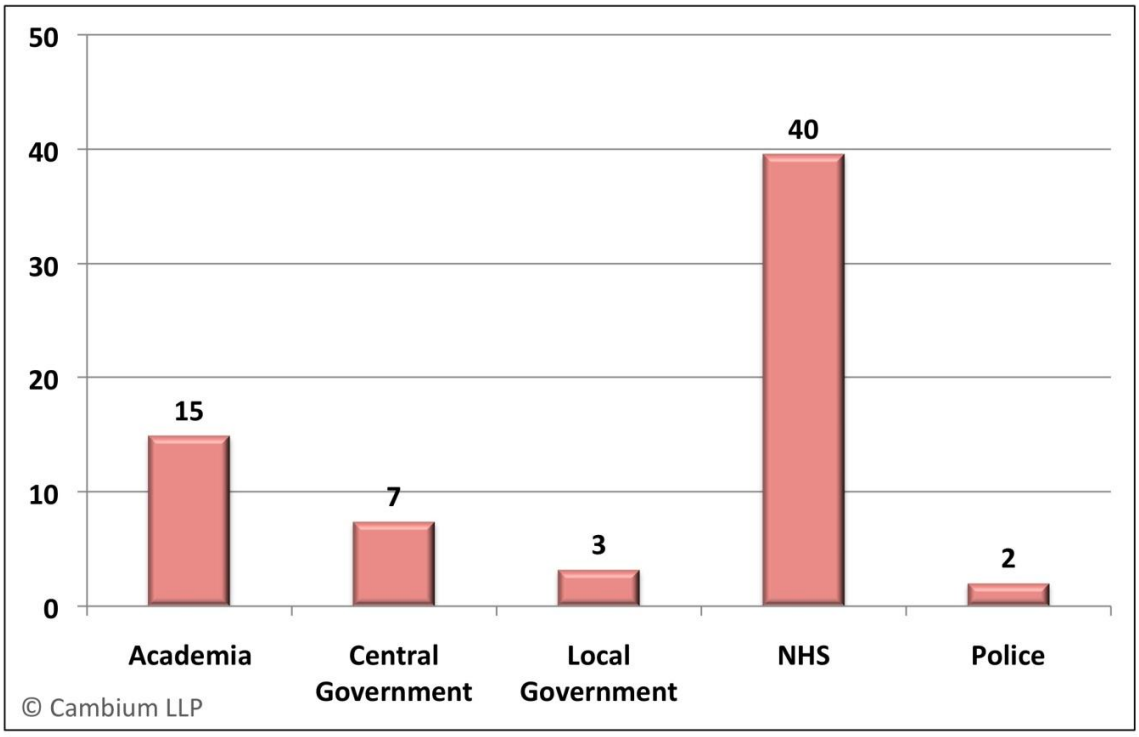


Fig 22 Total number of Laggards segment in each Public Sub-Sector

With a total of only 67 CRC organisations falling into this category Laggards in the Public Sector is not a large target segment, most of these being located in the NHS and Academia sectors.

For those targeting or already operating in the Laggards, the messaging to CRC Participants should focus on impact on energy / carbon management. Wider Sustainability benefits will only be of interest to Leaders in these Segments.

Further insight into the Public Sector Laggards is provided through the analysis of scores in terms of the individual Indicators that make up their Cambium Index scores.

Public Sector - Indicator Analysis

The response of the Public Sector as a whole to the Indicators that form the Cambium Index has been reviewed on pages 43 to 46 and the graph of these Indicators is presented below.

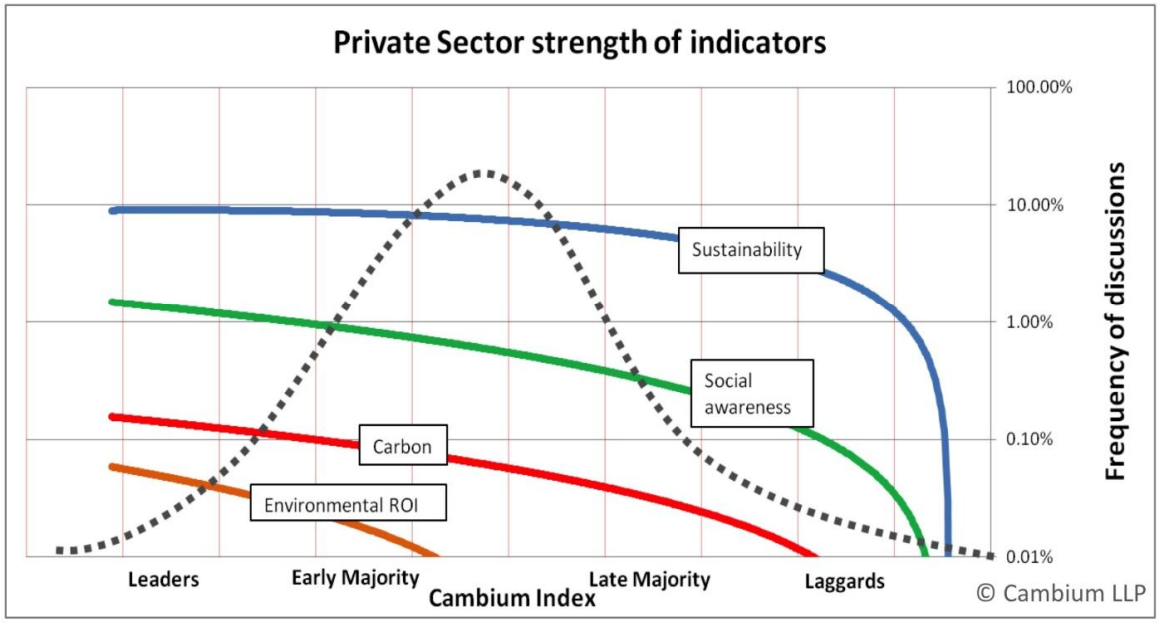


Fig 23 Public Sector strength of Indicators

Public Sub-Sector Analysis

The overall response has been analysed earlier, but in the same way that we can analyse the Public Sector as a whole, it has also been possible to review the response of these same Indicators at the sub-sector level to understand the impact variation in response to these Indicators between the sub–sectors. This provides useful information to Suppliers on marketing themes that will resonate with a specific sub-sector. Equally Participants in the sub-sector will also find them of interest for assessing the overall response of the Sub-Sectors of which they are a member.

In order to illustrate this point we shall review the component Indicator chart for the Academic sector.

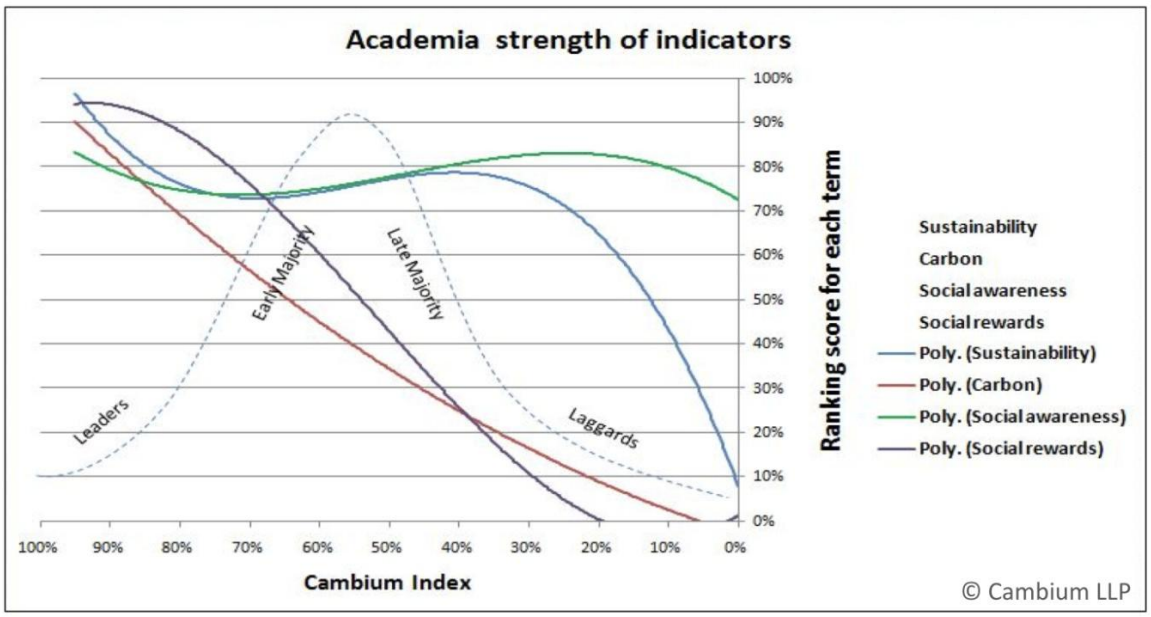


Fig 24 Academia Sub-Sector strength of Indicators

The first conclusion to draw from this analysis is that the Academic sector has a strong consistent score for "Social awareness". This means that whilst all Participants in the Academic sector recognise its importance. It is important for suppliers to this sector to be aware of it and to understand that high standards of corporate social responsibility will be expected. It should also be noted that given the strength of the Indicator score that although this will be required it but will not necessarily create sufficient differentiation.

A similar trend can be seen for the general Sustainability with only a small percentage of 'Laggards' that have not yet discovered the importance of this Indicator. The response to Social responsibility and Sustainability are not surprising given the thought leadership, age profile and involvement by Academia in Research on the environment.

Evidence of the advanced thought leadership around Sustainability is shown by the interest in Sustainability initiatives that are quantified in terms of the financial value ascribed to their environmental and social benefits expressed by a strong performance in terms of Environmental ROI. This Indicator registers with over 60% of organisations with a high awareness level amongst the leaders in the Sector. This recognition of the holistic value and importance of Sustainability initiatives may explain the lower interest in Carbon, where there is evidence that as a driver it is less well understood.

The Cambium Index scores combined with the analysis of the relative strength of the four Sustainability Indicators within specific sub-sectors provide valuable insight into the variation in attitudes to Sustainability and the management of Carbon across the Public Sector. They offer a new practical toolset that can bring benefits to Suppliers in the selection of target markets, and in the development of strong value propositions that will appeal to their chosen target markets.

Implications for Suppliers to the Public Sector

The analysis of attitudes to Sustainability discovered by our Research has important implications for Suppliers that are contemplating an entry into the CRC market. Ultimately any selection of target market and messaging will be dependent upon Supplier specific criteria such as Product or Service track record and the nature of any goods or services provided. The conclusions drawn here cannot be universally applied to all Suppliers, but nevertheless provide important insight for consideration in selecting target sectors and marketing messages.

Target Market Selection

In terms of selecting the best market opportunity a supplier needs to consider both the number of CRC organisations as well as their average size in terms of energy use and potential to invest in Sustainable innovations. From this perspective our report shows that the Public Sector is less than a quarter of the size of the Private Sector as measured by the number of CRC organisations in the CRC Scheme.

In terms of number of individual CRC organisations the Local Government sectors is the largest with the Police Sector being the smallest. Particularly noteworthy are the large number of Academic institutions that are impacted by the CRC.

The Public Sector scores highly on both the Cambium Index as a whole and also in terms of the interest in Sustainability in general. These high scores particularly in Central Government may spring from the ambitions of the coalition to be the 'greenest Government in history' and also from the declared aim of reducing carbon emissions by Central Government by 10% within a year. The high scores shown in our study provides some evidence that these policy initiatives appear to be gaining traction given the overall level of discussion picked up in our research.

That being said the low scores shown for the apparent interest in managing carbon emissions within the Public Sector is surprising and it will be very interesting to understand whether this impacts performance in the footprint reports to be published later in the year. This lower level of awareness indicates that the Public Sector is potentially an attractive opportunity for specialist carbon management suppliers.

The general Public Sector trend shown in our results of high interest in Sustainability and lower interest in Carbon management was not apparent all of the Public Sector, especially in the Police and NHS sectors. In these sectors the trend was reversed with higher than average interest in Carbon management than for the Public Sector as a whole.

The variation in the number of CRC Participants and the interest levels in different aspects of the Sustainability agenda have important implications for Suppliers in terms of marketing messages.

Value Propositions and Messaging

As we mentioned on page 29 a decision to separate out the Private and Public Sector was made due to the significant difference in the results between the Public and the Private Sectors. Specifically there was a much higher response to the Sustainability agenda in Public Sector CRC organisations.

Suppliers to the Public Sector will know already that its procurement processes are already governed by strict, transparent procurement rules designed to ensure transparency and that taxpayer's get value for money.

Given this level of scrutiny of Public Sector procurement it can be assumed that similar rules will apply to Suppliers Sustainability credentials. Specifically more detail will be required and greater weighting will be given to having clear published, Sustainability policies, goods/services and processes that conform to best practice standards.

This awareness of Sustainability will increasingly become part of the '*table stakes'* that a Supplier will have to provide to do business with these Public Sector CRC organisations. Suppliers also need to note that each of the subsectors for the Public Sector has very different business models and operations and each sector has different challenges in ensuring the optimal consumption of CRC regulated energy.

As a result any messages designed to appeal to each sector need to reflect these challenges and to provide solutions that help optimise energy use and to reduce environmental impact. The different requirements for each subsector in terms of energy use also means that ideally Suppliers should also be able to provide quantified reference examples of how the technology or service has reduced energy consumption or tangibly improved the achievement of Sustainability goals in a similar Sub-Sector.

Due to the high interest in Sustainability across the Public Sector, it offers a good potential market for innovations that can support the delivery of wider Sustainability objectives e.g. sustainable change management offerings. Our results indicate that the Central Government and Academic sub-sectors would be the best markets to target by suppliers with this kind of innovation. Conversely the NHS and the Police sub-segments would appear to have less interest in these broader Sustainability initiatives at this time.

Within the Public Sector the interest level in carbon management is highest in the NHS and the Police subsectors. In recent years both the Police and the NHS have been subject to regimes of stringent process optimisation and targeting. As a result these subsectors may be more receptive to Supplier propositions that prioritise the financial benefits of energy efficiency. For new Suppliers with a proven track record of delivering energy efficiency in the Private Sector, the interest in carbon and energy management in these sectors may offer the best market entry point into the Public Sector.

The low interest in Carbon management across the Public Sector means that it may offer a good opportunity from suppliers of carbon measurement and management services. Equally those innovations enjoying success in delivering effective management of emissions or energy

efficiency innovations in the NHS or the police sector may be able to extend their success in these segments into other Public sub-sectors due to this track record.

Finally, the drive to secure more value from Government expenditure as part of the Coalition's deficit reduction programme in conjunction with rising commodity costs is likely to see a greater focus on all operational costs and in particular around energy.

As a result the value of reducing energy consumption will continue to be a vital compelling driver of investments to ensure compliance with the CRC. Consequently, any Supplier targeting Public Sector CRC organisations needs to ensure that the bottom line benefits of its innovation or service are quantified and clearly reflected in its core marketing messages.

Section summary

- The Public Sector has high Cambium Index scores that on average are higher than the Private sector. Amongst component indicators of these scores, the strongest indicator is in Sustainability
- Central Government and Academia have the highest Cambium Scores and interest in Sustainability with the NHS and the Police being the lowest
- By comparison interest in the Carbon management indicator is less well developed with the highest interest being shown by the NHS and the Police. In this regard they show a similar trend to the Private sector.
- The observed differences in the behaviour of the Public Sector may offer support to the notion of separate CRC league tables to enable meaningful performance comparison
- Each Public Sector sub-sector has specific energy demands and varying interests in Sustainability, so Suppliers marketing messages need to be customized to be relevant to each of the Public Sector sub-sectors
- Successful suppliers to the Public Sector need to ensure that they have good internal policies and practices around Sustainability
- Carbon management specialists may find the Public Sector to be a fertile market opportunity
- For suppliers, early CRC Supplier case studies and references relating to the management and reduction of carbon emissions (energy saving) in the NHS and Police sectors may be of interest and relevance to other sectors within the Public Sector
- For Suppliers with no track record in the Public Sector, but with energy saving innovation proven in the Private Sector, then the Police and NHS may be most receptive to this track record and messaging
- For Suppliers with innovations that support Sustainability as a wider objective should focus on the Central Government and Academic sectors of the Public Sector
- Any Supplier targeting Public Sector CRC organisations must ensure that the financial benefits of its innovation or service are quantified and reflected in its core marketing messages.

ANALYSIS OF THE PRIVATE SECTOR

ANALYSIS OF THE PRIVATE SECTOR

Private Sector – Market Segmentation

The Private Sector participants in the CRC outnumber the Private Sector Participants on a numerical basis by more than 3 to 1 with 2,132 Private Sector to 638 Public Sector CRC organisations. For suppliers the size of the potential innovation opportunity is significantly larger than that offered by the Public Sector. In order to understand the composition of this opportunity the Private Sector has been further divided into sub segments (Sub-Sectors), which are reviewed in detail in this section.

For reasons stated earlier on page 29, we have separated our review of the Public and Private Sector

Public Sector Segmentation Method

In analysing the Private Sector CRC organisations we have followed the same segmentation rule as per the Public Sector, where individual organisations have been placed into a Sub-Sector that reflects their primary business activity rather than their legal or organisational relationship with other Registered CRC organisations.

The reason for this is that the CRC legislation allowed for the disaggregation of any large subsidiaries of organisations that could be eligible to participate in the CRC in their own right as a *Significant Group Undertaking* (SGU). This disaggregation could be done at any level of grouping of subsidiaries and the resultant SGU is treated as a separate Organisation for the purposes of the legislation. This disaggregation was not allowed if the remainder of the organisation then fell below the 6,000 MWh qualification level for the Scheme.

As a result our segmentation Method may contain variations from other segmentation approaches. That is some Participants will be classified in our analysis into a single category, when in reality they may have several significant subsidiaries that may be operating in a wide diversity of sectors with some outside of the core market into which the organisation has been segmented in this summary.

However, our Method is in alignment with the flexibility for reporting allowed by the CRC legislation itself and still allows the creation of segments with broadly similar energy and emissions management challenges to be addressed by potential Suppliers of relevant goods and services. The segmentation is designed to be a qualitative assessment to support the development of go to market plans rather than to be definitive at a quantitative level.
It is important to recognise that although a segment (Sub-Sector) may be smaller numerically than another in terms of CRC organisations, this does not necessarily reflect the usage of energy (and hence Carbon footprint) either in total by all individual CRC organisations within a sector or indeed at an average level for each individual Organisation.
Nonetheless this segmentation does enable Suppliers of relevant innovations or services to assess the number of potential audiences and opportunities that may exist in each market sector.

Composition of Private Sector Participants

The data for the segmentation is shown below and has identified 14 separate Sub-Sectors. Within these manufacturing is the largest Sub-Sector comprising 744 organisations. This is over four times larger than the next largest sub-sector. This is not surprising given the high energy requirements of most manufacturing processes.

Given its size there is significant potential for further segmentation of the Manufacturing Sub-Sector further detail. This is not included in this report.

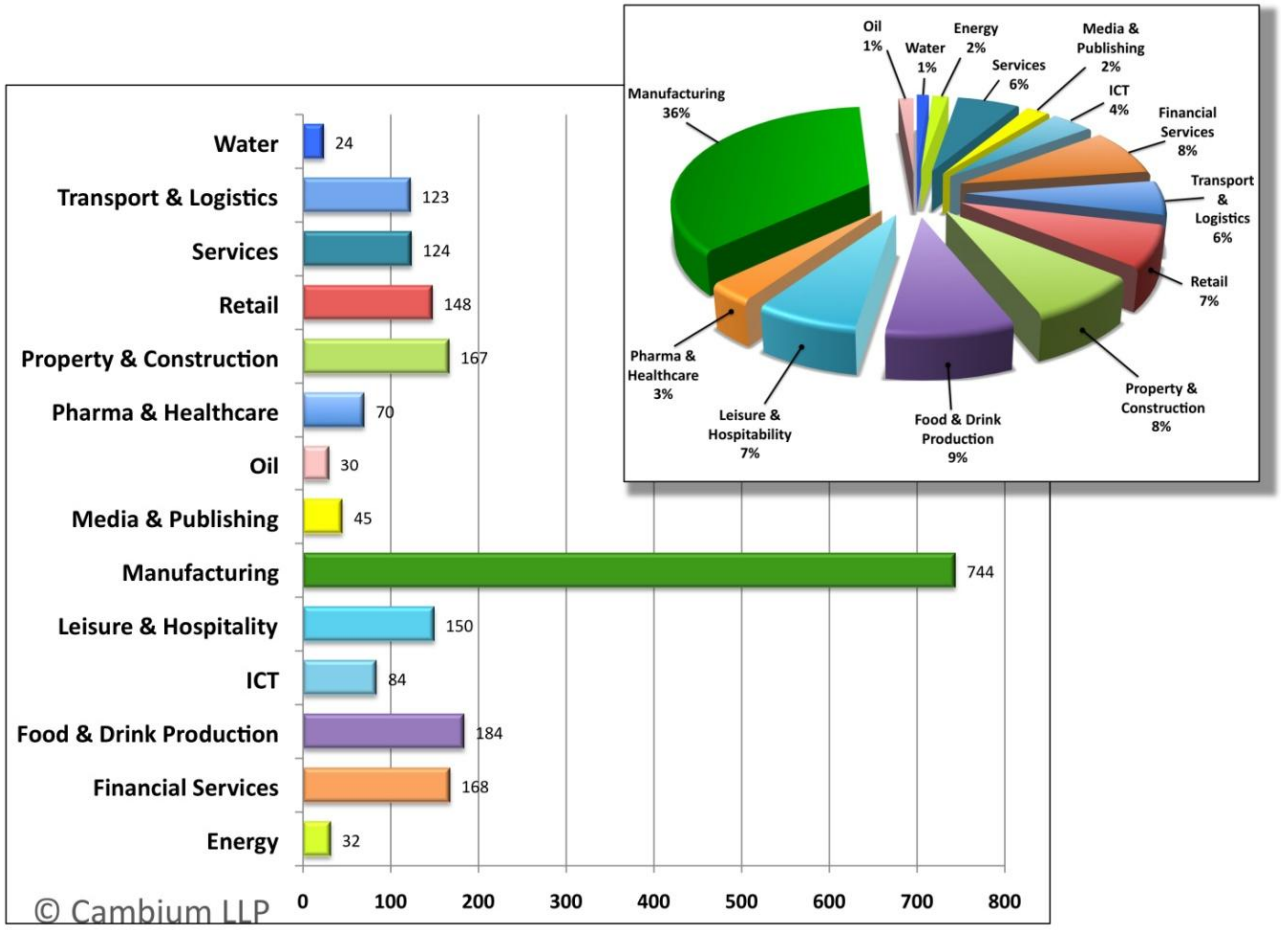


Fig 25 Distribution of Private Sub-Sectors in CRC

Although a particular Private Sector Sub-Sector may have a relatively small number of CRC organisations it can nevertheless be a large consumer of energy and therefore represent a large opportunity for innovative Suppliers with relevant solutions.

A good example of this is the Water sector, where energy use is very high due to the need to pump and oxygenate large volumes of water, consuming significant quantities of Energy. Although the Water sector is a very large user of energy it is numerically small in terms of the number of CRC organisations at 24. This is important information for prospective Suppliers to consider in optimising their allocation of sales and marketing resources between these sectors.

As explained in Appendix 2 - Current Status of the CRC Energy Efficiency Legislation on page 76, the CRC was originally designed to include and incentivise the adoption of energy efficient technologies by moderately energy intensive industries. Unsurprisingly businesses with large numbers of offices and retail units are included in the Scheme. As a consequence Sectors such as Property & Construction, Financial services, Leisure & Hospitality and Retail are included.

The graph above highlights the wide diversity of industry amongst Private Sector Participants. In each sector the use of energy is very different. This diversity of energy use profile has important implications for Suppliers of Energy Saving innovations.

The variety of challenges that energy and emissions management pose to each sector will require the creation of specific and customised marketing messages and value propositions to be relevant to the needs of each sector.

This diversity has important implications for smaller innovative businesses, as they need to consider carefully assess whether a single value proposition or message will resonate across all sectors. The resource constraints in these cases may mean that it is better to focus sales and marketing efforts upon a selection of sectors with customised messaging, rather than a potentially less effective 'one size fits all' strategy.

The breadth of market sectors in the Private Sector is also an important consideration for investors in assessing the likely potential for a given innovation. Not all innovations will necessarily be successful in all sectors, so the relevance of an individual Product or Service to each of these sectors is an important consideration in assessing its potential market value.

The Cambium Method enables us to understand variation in interest level amongst Private Sector Participants in relation to the Sustainability Indicators within and between the Sub-Sectors.

Private Sector CRC Organisation attitudes to Sustainability

As per the Method used for the Public Sector, the Sustainability scores of the Private Sector CRC organisations have been summarised and allocated into one of the four categories of response, namely Leaders, Early Majority, Late Majority and Laggards for each subsector. The individual breakdown of organisations across these four categories within each Sub-Sector is provided in Appendix 4, pages 86 to 88.

In the course of the Research Cambium identified a small number (5 – 10) of organisations that appear to have set up separate 'holding entities' as the official registered name under the scheme. From what has been gathered these 'holding entities' have no trading history or annual reports despite being clearly associated with large well-known UK businesses. The exact reason for this set up is not clear at this time but will be monitored and commented on in future reports. Our Research therefore did not find any significant "Sustainability" activity for these organisations as named in these CRC registrations.

Sustainability leadership within the Private Sector

An analysis of the Leaders category for the Private Sector shows that on average only 5%, of Organisations in the Private Sector are Leaders. This is much lower than the Public Sector, which by comparison had an average percentage of Leaders of 42%.

Within the Private Sector the Energy and Services Sub-Sectors recorded the highest score for Leaders (16% and 15% respectively), which is two and a half times the Private Sector average.

This is perhaps to be expected for Energy given the core nature of their business. This sector can be expected to maintain this interest in the Sustainability agenda as implementation of the CRC legislation continues.

Looking at Services in more detail indicates that it comprises a large number of Professional Services organisations, in particular the field of Law and Consultancy were very well represented. These businesses need to be expert in the field of Sustainability in order to provide effective advice to their clients. The first wave of needs arising from the CRC legislation has focused upon understanding compliance obligations and innovative Services organisations have taken advantage of these early market dynamics. It is therefore understandable that they scored well.

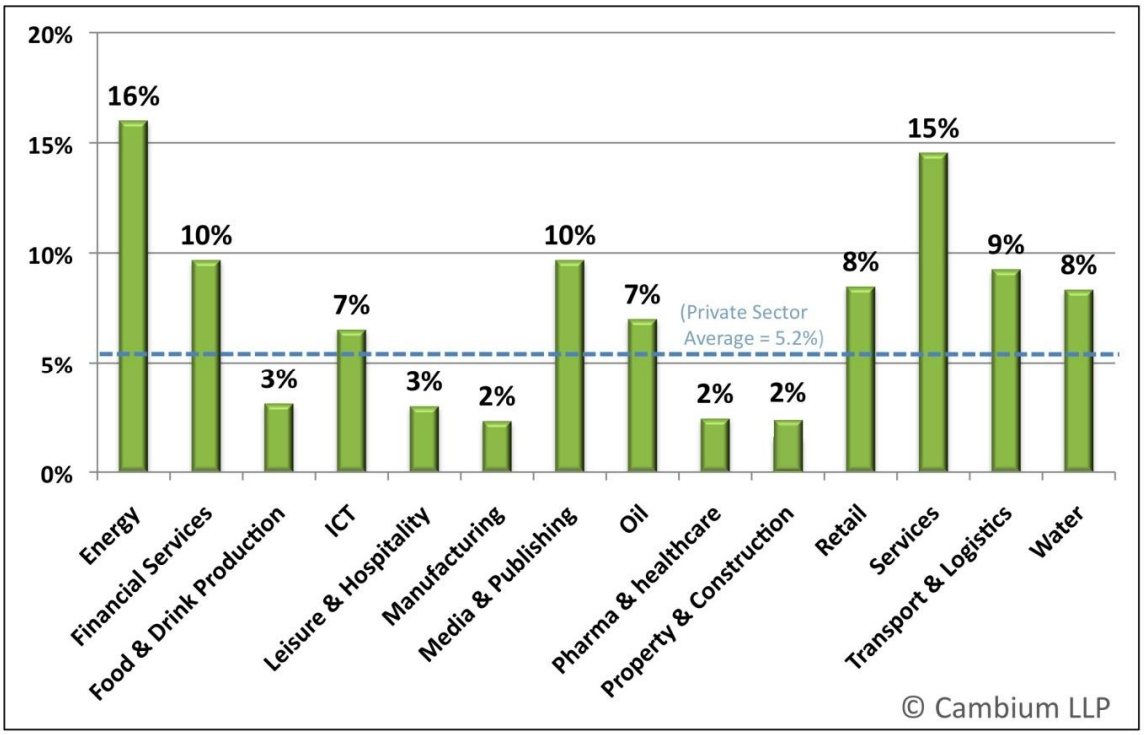


Fig 26 Proportion of each Private Sub-Sector that are in the Leaders segment

Others sectors with higher than average scores for Sustainability include: Financial Services, ICT, Media & Publishing, Retail, Transport & Logistics, Water and Oil.
Examining the drivers in each of these sectors in turn:

Financial Services (10%) registered a good score, due in part to the large parts of the UK Financial Services market are in the retail financial services sector. These organisations will be aware of the interest from consumer stakeholders in Sustainability. They also employ large numbers of people and it is understood that a strong internal Sustainability agenda can play an important role in attracting and retaining employees. For those financial institutions in the Investment sector, Corporate Social Responsibility (CSR) and Sustainability are seen as being important elements of ethical investment and this may have provided another reason for the higher score.

Media and Publishing (10%) is required to cover new emerging themes in society both from a news and education perspective. It is natural that these organisations will have an awareness of Sustainability best practices and the drive towards the increased use of recycled products for printing may have underpinned some of their Sustainability interest and scores.

Energy is a key cost for the Transport and Logistics Sub-Sector (9%) sector and whilst not explicitly covered by CRC, the environmental impact of transportation will have lead to an appreciation of the Sustainability agenda hence a higher score. For those markets where Transportation is a key element of the supply chain, e.g. Retail, the trend to adopt more Sustainable business practices will bring growing client driven pressures to the suppliers.

Retail (8%) has a history of players that have strategies promoting Sustainability in response to increased demands for Sustainable products from consumers, so a high percentage of leaders is predictable.

Water (8%) also scored above average although it may have been expected to have a higher score, as prior to their privatisation the Water industry also had statutory responsibility for environmental protection. Management and cleaning of water is still a prime responsibility and energy costs are very significant, hence this higher score.

ICT (7%) scored just above the average for the Private Sector. Energy is a key cost for ICT organisations, particularly data centres. As a result there is a great interest in optimising energy consumption within ICT organisations. The importance of energy efficiency to this sector has created significant industry concerns with the provisions of CRC, which are perceived as being disproportionate on their impact upon data centre operators. The growing interest in Sustainability is also driving an increased demand for more measurement and optimisation of energy consuming processes ('smart' technologies). This in turn is creating increased demand for ICT services.

Oil (7%) was perhaps surprisingly, given their operational focus, only slightly above average. A likely assumption is that the engineering bias of the sub-sector has already optimised the more energy intensive production processes. Opportunities in this sector may be limited to Suppliers with specialist knowledge of the production processes or innovations targeted at the relatively non-intensive energy such as heating, lighting and transport.

Food & Drink Production (3%) and Manufacturing (2%) stood out with unexpectedly low scores this was particularly surprising given their higher than average operational process energy (as opposed to heating and lighting) costs.

It is possible that the more energy intensive businesses have traditionally focused on energy costs. In this context Energy Efficiency innovation may be considered a 'business as usual' where the perceived marginal value in investment in additional energy efficiency measures may not be as clear as in other sectors. However on the wider issue of Sustainability the benefits of adopting new best practices does not appear to have gained traction with these industries to date. As a result it does not receive the same high profile as it would in other types of organisations adopting the same technology.

It may also be the case that the majority of businesses in these two Sub-Sectors are suppliers to others (E.g. Retail) and as such they may see themselves with less of a public profile. The introduction of the League Table and the inevitable supply chain pressures are likely to create changes in these Sub-Sectors.

Property & Construction (2%) also ranked low amongst the Leaders. This is likely due to the extremely tough trading conditions in this market where the focus for the past 12 months or so has been around cutting costs and internal restructuring.

NUMBER IN EACH SUB-SECTOR IN THE LEADERS SEGMENT

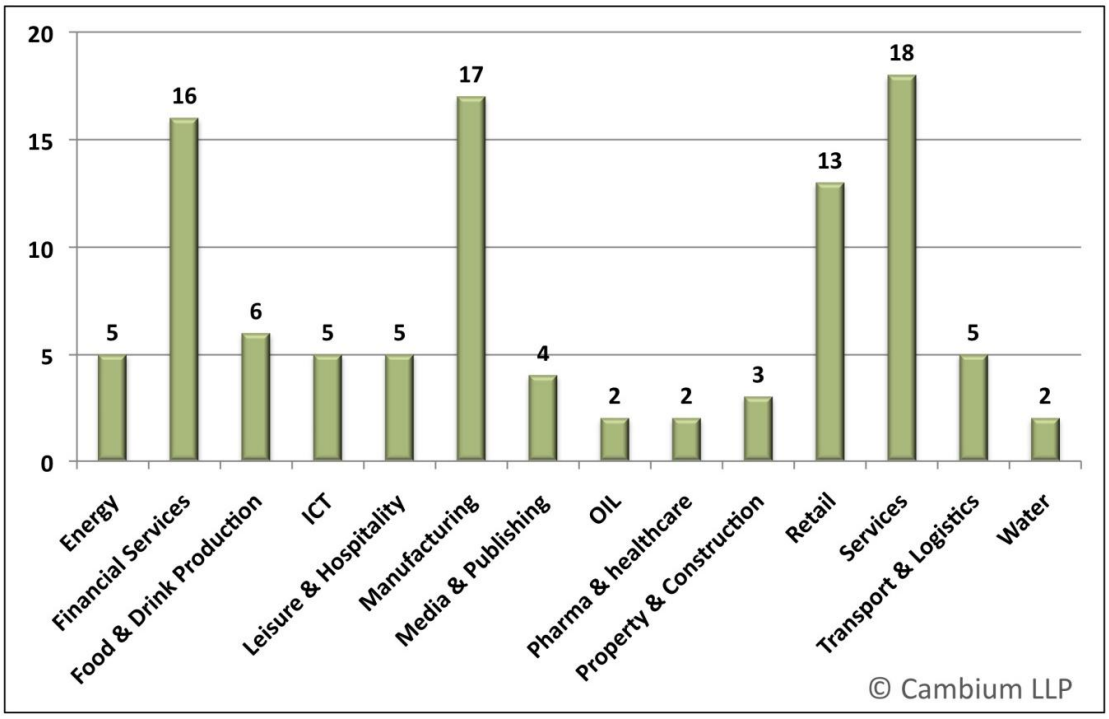


Fig 27 Total number of each Private Sub-Sector that are Leaders

Analysis of the actual numbers of Organisations in the Leaders category of the Private Sector is consistent with the percentage Leadership findings with Services scoring highest. By contrast, from an absolute numbers perspective, Manufacturing as a consequence of the size of this sector, comes as one of the top sectors with 17 organisations in the Leaders category. Overall the low score for Leaders in the Private Sector in numerical terms are borne out by the fact that there are only 110 Leaders in the Private Sector category as whole. Other sectors with significant numbers of leaders include Financial Services and Retail.

Financial Services also scores high in terms of numbers and as a sizeable Sub-sector (168) represents good potential marketplace for sustainable innovation products and services.
The next highest score comes from Retail, where despite the number of UK Retailers with well publicised commitments to Sustainability the Retail ranking is fairly modest. Joint 6th on a percentage basis and 4th on actual numbers of organisations. It can realistically be expected that the size and influence of the major retailers driving forward an aggressive Sustainability strategy, will accelerate a trend in the sector that will either create competitive advantage for the early adopters through consumer preference or establish benchmarks that will become the norm for the industry. Either way it means that other retailers will have to invest to remain competitive, making it a potential attractive sector from a Supplier perspective.

Sustainability Laggards within the Private Sector

The graph below depicts the percentage of Laggard organisations in terms of their Cambium Index score within each of the Sub-Sectors of the Private Sector.

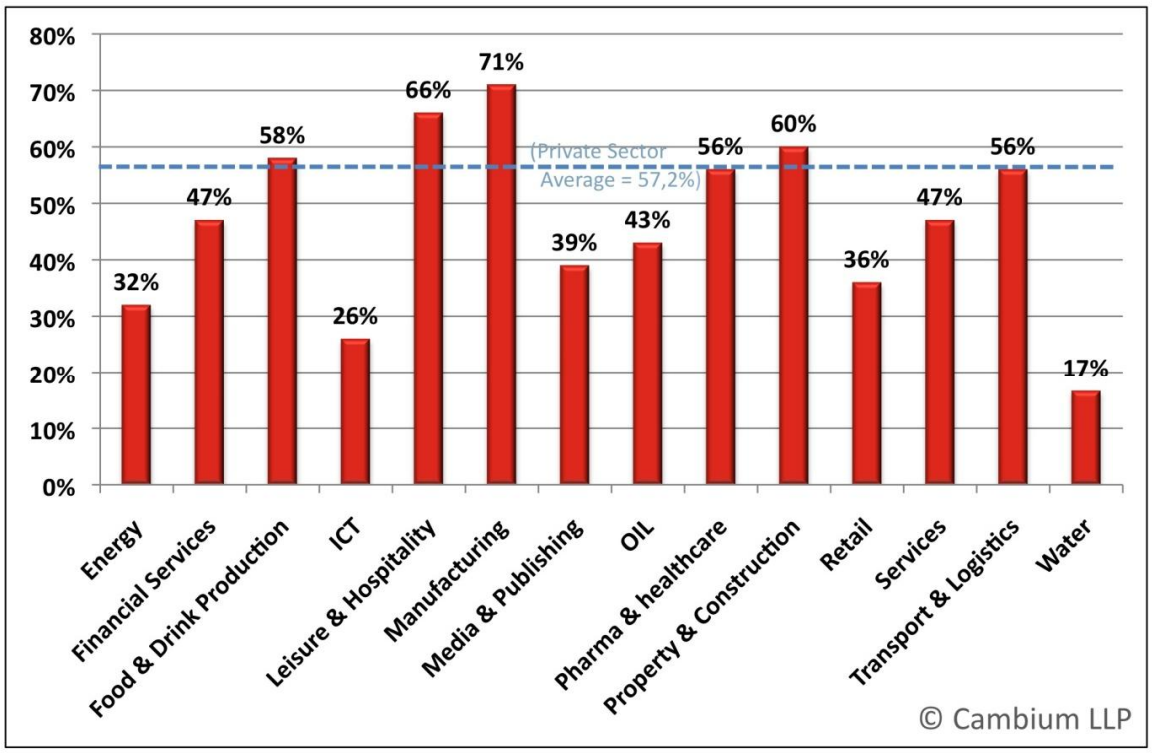


Fig 28 Proportion of each Private Sub-Sector that are Laggards

The overall total of 57% of Private Sector organisations being classified as Laggards indicates that the majority of UK Private Sector Participants in the CRC do not yet see Sustainability as a core strategy within their business.

Even for energy intensive industries like manufacturing the Laggard score is high. The size of the Manufacturing Sub-Sector alone means that 25% of the whole Private Sector lies in this one Sub-Sector as Laggards.

Analysis of the number of Laggards showed a similar profile:

(Note the full height of manufacturing [528] is 5 times the next Sub-Sector)

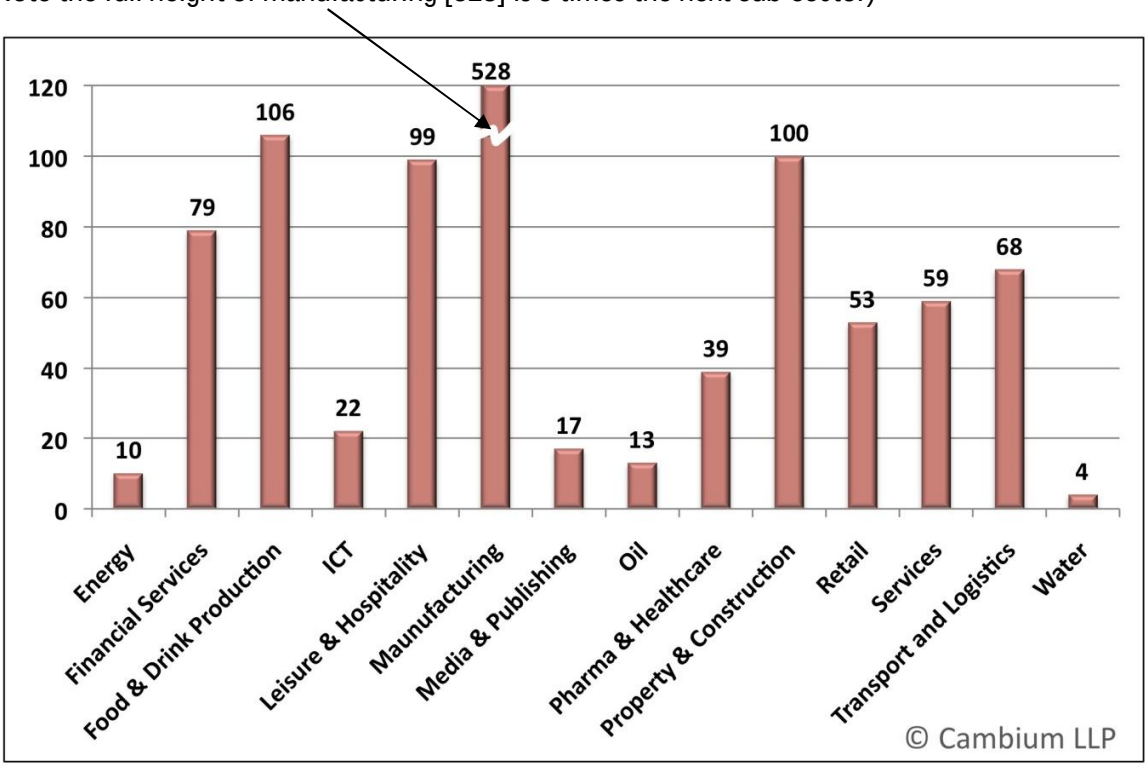


Fig 29 Total number in each Private Sub-Sector that are Laggards

Outside of Manufacturing, three other segments had a greater amount of Laggards than the average. These were:

(a) Food & Drink Production
(b) Property & Construction
(c) Leisure & Hospitality

Like Manufacturing, Food and Drink Production processes can be very intensive in their use of energy. In addition they may begin to be affected by the impact of growing interest in Sustainability amongst Retailers, who can be expected to review their value chains to investigate the adoption of Sustainable business practices. The secondary effect of these Supply chain changes will create new opportunities for Suppliers within this segment.

For Leisure & Hospitality the reputational exposure and risk is likely to be as high and potentially as impactful as the Retail segment. Although the full effect may lag behind this segment could provide a useful entry point for a carefully positioned value proposition or as part of a second phase in a market broadening strategy.

Property & Construction are perhaps a surprising high scorer among the Laggards. This is despite the introduction in 2006 of the Department for Communities and Local Government's (CLG) Code for Sustainable Homes - a new national standard for Sustainable design and construction of new homes. However given the impact on public awareness through the likes

of Retail and the Public Sector as a whole, consumers are more likely to be making house buying decision based on the total cost of ownership (including the ever rising cost of energy).

For Commercial Property operators the CRC brings potential operational headaches as they are obliged to report on energy bills that they pay even though energy consumption within a property may lie outside of their direct control driven by the energy use of their tenants. The data indicates that Sustainable business practices may not yet be a driver for innovation adoption by this sector. However, innovations that can save energy and mitigate these additional CRC cost impacts are likely to a productive message for Suppliers to deliver to this sector.

Transport & Logistics and Pharma & Healthcare are close to the average. It could be argued that their focus is elsewhere (I.e. Vehicle fuel costs – not presently covered under CRC and Research cost/clinical effectiveness). Although less exposed from a reputational point of view Transport & Logistics (and Food & Drink Production) are coming under increasing pressure from the retailers as part of 'greening' the supply chain. Similarly, Pharma & Healthcare's main customer by far is the NHS and this too might eventually lead to supply chain pressures.

Analysis of Private Sector Indicators

Further insight as to the status of thinking on Sustainability within the Private Sector Laggard organisations can be revealed by investigating how each Sub-Sector scores in terms of the individual Indicators that make up their Cambium Index scores.

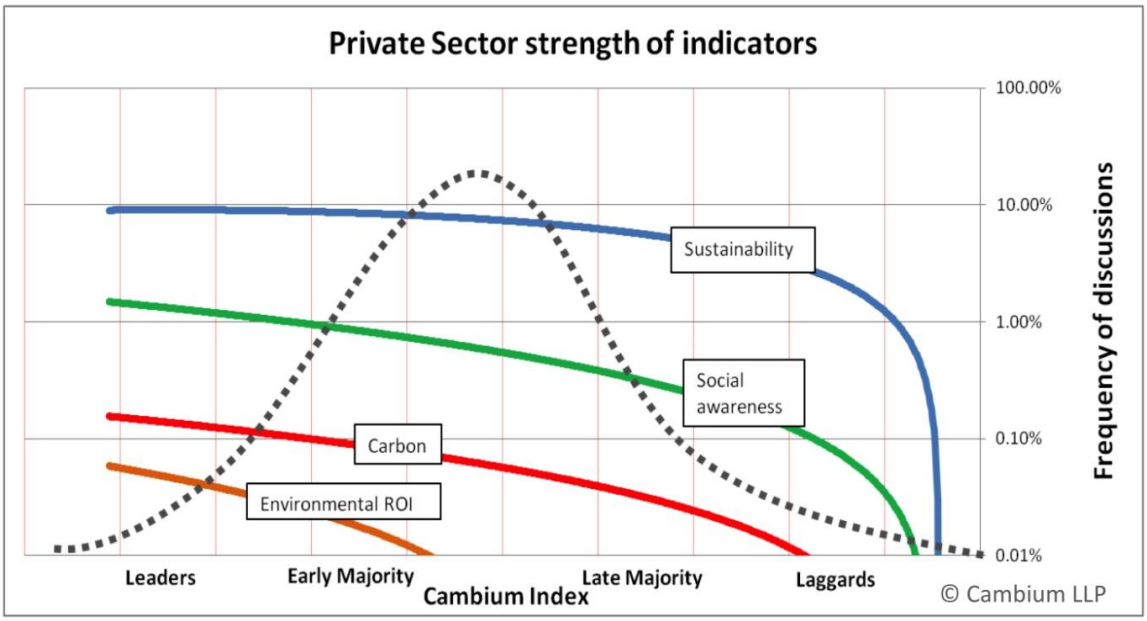


Fig 30 Private Sector strength of Indicators

The highest scoring Indicator here is Sustainability and the shape (flat with a sharp tail) shows that there is an almost consistent level around this term for most of the Sector. This means that this term will be of interest and importance to the majority of the organisations. The story on Social Awareness is similar except that the overall level of interest is lower and drops away much more quickly. Interest around Carbon is lower still and non-existent for the Laggards and this

Sector. A point that certainly should be of interest to policy makers and an area worth watching in terms of impact post publication of the League Tables.
Since the Carbon marker relates to the area of energy efficiency which is at the heart of the CRC scheme, Participants may be concerned that the Laggards (which makes up over 50% of the population) are showing little are no interest in this area and this is likely to have implications for individual Sub-Sectors as a whole.

The Environmental ROI curve shows that this area is only on the radar of the Leaders and part of the Early Majority. It will not therefore have broad appeal in terms of messaging but will be of value for suppliers looking to target Leaders as part of their overall strategy.

Sub-sector Indicator graphs

When we look deeper into the data, we can prepare a wide range of sub-sector charts such as the example shown below for Financial Services.

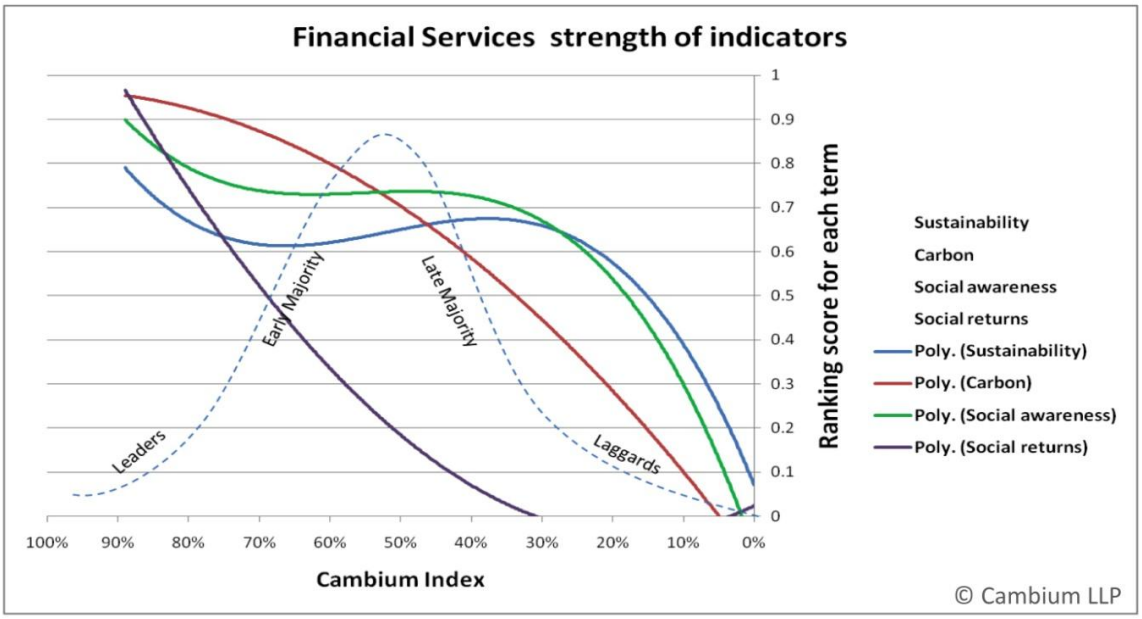


Fig 31 Financial Services strength of Indicators

Taking each curve in turn, the line indicating attitudes towards the Carbon Indicator (see Methodology page 21 for detailed description) shows an almost straight line from top left to bottom right. This indicates that the interest is high amongst the Leaders and drops of proportionally across the whole of the Sub-Sector. Messaging around the Carbon will therefore have more impact with the Leaders and virtually none with the Laggards.
Curves for Sustainability and Social Awareness follow very similar paths and a key point to note is the flattening out of the curves for the upper 50%. This indicates that messaging and Value Proposition addressing these two areas would have strong appeal for the top 50% of organisations in the Financial Services Sector.
The curve representing the area of Social Interest starts in the top left and falls sharply. This is a stronger marker for Leaders in the Sub-Sector. It also indicates that messaging around this topic will have little or no resonance with the lowest 30% in Financial Services

Leaders and Laggards Summary for the Private Sector

This chart below maps, for each Sub-Sector, the relative scores for the in the Leaders and Laggards in the Private Sector. It shows two distinct groupings of High Leader / Low Laggard score (Green Zone) and Low Leader / High Laggard (Red Zone). Note also that the size of the circles represents the number of organisations in the Leader and Early Majority segments. That is the organisations in the top 50% of Sustainability Index scores

As a diagram it provides a single view of all the Private Sub-Sectors and the attractiveness to suppliers in terms of the Sub-Sector's attitude towards Sustainability and the relative size of the market in that Sub-Sector.
It is based on the assumption that suppliers to this market will find the 'best' prospects amongst the Leaders and the Early Majority. The size of the circles equals the size of the 'best' prospects. The chart also differentiates between the size of the Leaders and Laggards in each Sub-Sector. This means that the upper right quadrant (Green) represents the best market for goods and services that can address a wide range of issues on the Sustainability agenda. Suppliers with a more targeted proposition around energy reduction and a strong financial ROI will have greater sales effectiveness with organisations in the bottom left quadrant (Red).

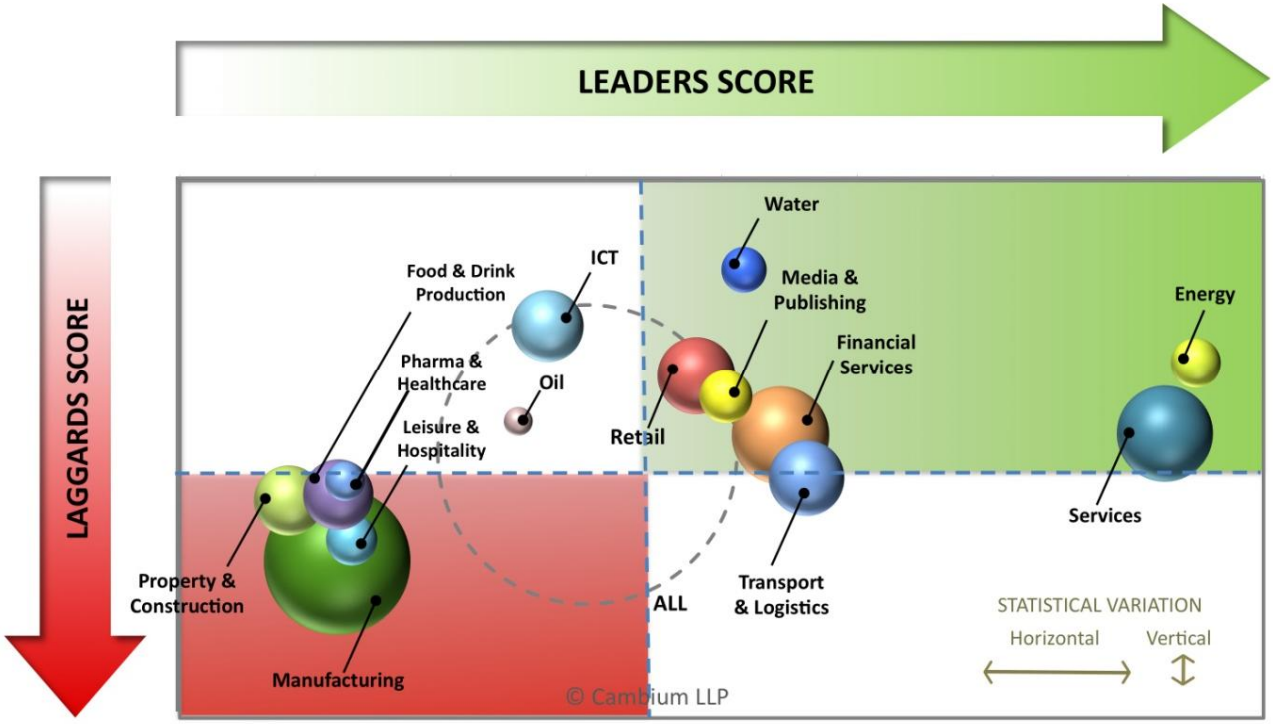


Fig 32 Private Sub-Sectors Market Attractiveness

Implications for Private Sector Suppliers

Target Market Selection

For Suppliers looking to address the Leaders, Energy, Services and Financial Services are the three groups that score highly by number and by percentage. Energy by the nature of its core business is likely to be looking out for truly leading edge technologies that can improve their processing energy costs. However, there may be opportunities to address their non-core business costs around people and data management (heating, lighting and IT).
For Services and Financial Services, people and data management are likely to be the main operational costs and represent good opportunities for suppliers with innovations and services to address the needs in these areas.

Manufacturing also represent a large market albeit a small percentage of the sub-sector overall. As previously commented, Manufacturing is typically an energy intensive business and as such it may already have implemented many of the technologies that are only just being adopted elsewhere. The opportunities are therefore likely to stem from the following three areas:

(a) Suppliers with innovations that are genuinely leading edge and can deliver best in class returns on investment
(b) Suppliers who have innovations that address the 'non-core' of manufacturing process (E.g. IT, Office heating, Warehousing etc)
(c) Manufacturers that supply directly to Sustainability leaders and will be coming under supply chain pressures in terms of their environmental credentials.

Points (b) and (c) also applies to Food and Drink Producers

Value Propositions and Messaging

Compared with the Public Sector the Private Sector represents a more diverse picture in terms of attitudes towards sustainability. Marketing messages will therefore need to be customised more widely. Small innovators will need to assess if they can succeed in all markets and must determine which are the most accessible and addressable to match their resources.

Clearly there is a balance of emphasis to be struck in terms of financial return, other wider Sustainability benefits and reputational risk/enhancement. This three-way balance will of course be guided by the attributes of the offering. Organisations in the Leaders segment are more likely to respond favourably to propositions leading with wider Sustainability benefits and reputational enhancement. However, all Private Sector organisations contained Leaders so the trend of adoption of sustainable business practice will cover all sub-segments albeit at different rates.

In addition to the number / percentage of Leaders, the value proposition and messaging will depend on a number of factors including:

- The profile and influence of the individual Leaders within the sub-sector
- The impact of supply chain pressures (particularly Suppliers to the Retail and Public Sectors)
- Energy costs as a percentage of overall costs
- Reputational exposure through the league tables

For those organisations looking to refine their targeting the Indicator Curve (See Financial Services Example) provide a more detailed insight and in addition to improving the value proposition may also assist in the qualification process for the sales teams.

In terms of timing, analysis shows that the markets in the Sub-Sectors are moving at different speeds. With the size of the Leader segment signifying the likely rate of adoption, Suppliers are in a position to assess and monitor (against the points of differentiation of their offerings) when and where they are best placed to address specific Sub-Sector

For organisations such as Pharma & Healthcare and Transport & Logistics where the number of Leaders is low and there is a large proportion of Laggards, the sales approach is likely to involve an educational / awareness raising approach. Applied well this can be a very effective way of building long terms relationships and therefore perhaps best suited to suppliers looking for this type of relationship. That is NOT simply transactional in a highly cost sensitive market.

In looking at each of the Sub-Sectors in term of the individual Indicator curves we can identify that Water, Energy, ICT, Services, Financial Services as good markets to target in the medium term, Particularly if you have a innovation that is strong on Sustainability as broad theme as opposed to narrowly focused on energy savings or carbon reduction.

In contrast organisations with the lowest scores (i.e. Leisure & Hospitality, Food & Drink Production, Pharmaceuticals & Healthcare, Property & Construction, Manufacturing) messaging to CRC Participants should focus on impact on energy / carbon management. Wider Sustainability benefits will only be of interest to Leaders in these Sub-Sectors,

Private Sector Analysis Section Summary

- As a percentage the Private Sector has fewer Leaders (5% versus 42%) than more Laggards (11% versus 57%) the Public Sector
- The Private Sector is diverse in terms of attitudes towards sustainability and requires messages and value propositions to be tuned to specific audiences
- The Sustainability agenda and adoption of technologies and best practice is moving at different rates in different Sub-Sectors
- The Private Sector showed strong interest in Sustainability generally across the sector but less of an interest in Carbon in terms of level of interest and the breadth of the audience
- Only the Leaders and some of the Early Majority in this Sector showed interest in Environmental ROI.
- Manufacturing accounts for more than a third of this sector and a quarter of all Participants
- Energy and Services have the highest percentage of leaders
- Energy intensive sub-sectors like Manufacturing and Food & Drink Production were amongst the lowest in terms of percentage of Leaders
- Water, Energy, ICT, Services, Financial Services are good markets to target in the medium term if you have a innovation that is strong on Sustainability
- Suppliers with a proposition specifically targeting energy / carbon management should be targeting Leisure & Hospitality, , Pharmaceuticals & Healthcare, Property & Construction,
- In Sub-Sectors with low percentage of Laggards, market penetration will require customer education and a more consultative approach.

ADDITIONAL CONCLUSIONS BY AUDIENCE

ADDITIONAL CONCLUSIONS BY AUDIENCE

The following section considers each primary audience in turn and the relevant conclusions drawn from the Research that have not been covered previously in this report. These conclusions should be considered in conjunction with the additional value that further Research might bring to each audience. The authors have provided a summary of these potential areas for further Research in Appendix 1 of this Report – see page 73.

Conclusions for Suppliers

General Points

Characteristics of Products and Services regarding Sustainability may be well received by the Public Sector and less well by the Private Sector. Suppliers will therefore need to tune their messages regarding Sustainability appropriately dependent upon the segment that they are addressing.

Suppliers will benefit from recognising that the differing responses to the Sustainability agenda across the affected sectors demands a variety of tactics. Consequently the most effective positioning of innovative solutions may not always be via a direct approach. Working in collaboration with other innovators may be the quickest route to offering a more complete solution. This highlights the importance of a diversity of sales and marketing strategies and channels to maximise success in these emerging markets.

Public Sector

With regard to interest in the Carbon Indicator, the NHS and Police show a similar trend to the Private Sector. Suppliers looking to enter the Public Sector market. This is further evidence and reinforcement of the earlier point regarding the need for Suppliers to tune their messages and value propositions to specific audiences

For Suppliers, early CRC related case studies and references relating to the management and reduction of carbon emissions (energy saving) in the NHS and Police sectors may be of interest and relevance to other sectors within the Public Sector

Private Sector

Analysis of Leaders showed a wide variation in scores (16% to 2 %) indicating that the Sustainability market is moving at different speeds across the Sector which highlights the need for Suppliers to tune their messages and value propositions to specific audiences

Overall, the dominant feature of the Private Sector was the large number of Laggards (57%) of which (15%) scored zero on all Indicators. The Indicator Curves, see example on page 33, have provided deeper insight to addressing this market. Specifically messaging around Sustainability and Carbon are the two strongest indicators within the Laggards.

In addition the nature of the market may require Supplier investment in customer education and a more consultative approach. This typically requires longer sales cycles and greater costs.

Clearly this approach is best suited to high value bespoke services and Suppliers should evaluate the potential cost of this investment on this basis..

Water, Energy, ICT, Services, Financial Services are good markets to target in the medium term if you have an innovation that is strong on Sustainability. Suppliers with a proposition specifically targeting energy / carbon management are likely to be more effective in the Leisure & Hospitality, Pharmaceuticals & Healthcare, Property & Construction Sub-Sectors.

Conclusions for Policy Makers and Public Stakeholders

Close examination of the data reveals subtle insights into the variation of response for sub-sectors of the CRC market to compare and contrast behaviour between the sectors. The Cambium Method can be readily extended to consider other dimensions of Sustainability with policy implications such as the interest level in other metrics e.g. Water or Waste disposal.

The Cambium Method is highly efficient and avoids the need to carry out costly and time consuming surveys and analysis to gain insight into the response to policy. As a result it can be used at an early stage in the formulation of policy to understand early response to new legislative change or to anticipate Participant response to new policy initiatives. This provides useful information for policy makers, politicians and industry stakeholders.

Sustainability Indicator Response of CRC Participants

The sharp differences in the Sustainability indicator between the Public and Private Sectors indicate that that there is still education required amongst a significant part of these high energy consuming organisations in the Private Sector. The fact that these businesses have not as yet begun to consider Sustainability as an important business agenda has potential implications for Central or Local Government supported education programmes such as the Waste & Resources Action Programme (WRAP).

This low level of awareness of Sustainability as a concept is also an unexpected finding given that many high profile leading businesses in the Private Sector have already made significant corporate commitments to driving forwards with their Sustainability agenda. Despite these torch bearers' commitments, this data indicates that policy makers, politicians and the public cannot afford to become complacent over the level of debate required to ensure that Private Sector businesses take the issue of Sustainability seriously.

Carbon Indicator Response of CRC Participants

The Carbon Indicator shows that the Private Sub-Sectors are highly differentiated across the whole Private Sector population by this measure. The data indicates a stronger interest in the Private Sector in the financial and reputational impact, more sensitive to energy management as a way to manage costs / tax. Consequently it will be important that Private Sector organisations across these Sub-Sectors seek benchmark information on their competitors' interest in Carbon.

The lower response level on the Carbon Indicator highlights potential risks for the Public Sector. If the low frequency for discussion regarding this Indicator was matched by poor performance in the Public footprint reports to be issued in October it would create two significant challenges. Firstly, it would create a credibility gap for the Public Sector in demonstrating leadership to other sectors in relation to the adoption of best practices in terms of Carbon management and Energy Efficiency. Secondly it would bring political fallout given the coalition's public policy pronouncements regarding their 'green' credentials.

Conclusions for Trade Bodies and Participants

This report provides insights into the differing attitudes across the Public and Private Sub-Sectors. It shows the comparative level of interest in the Indicators within each Sub-Sector and across the segments of Leaders, Early Majority, Late Majority and Laggards in each of those Sub-Sectors.

This is the first public analysis at that level and it enables the Sub-Sector Management teams, interested participants, trade bodies, professional groups, standards bodies and Trade Journals to understand the size and composition of their Sub-Sector and how that compares to other Sub-Sectors.

The data in this report therefore provide a potential early view as to how major Sectors and Sub-Sectors are likely to fare when the footprint reports are published in October 2011. The report also contains essential information to analyse the likely response characteristics of Participants in the same Sub-Sector i.e. the Peer group with which they will be compared. This will help industry bodies and Participants in the development of reputational risk management strategies.

On Carbon, the Public Sub-Sectors only show a strong response in their Leaders segment, this could lead to political embarrassment and leadership credibility for a number of Sub-Sectors and as such, they should be encouraged to carry out risk assessment and benchmarking relative to the Private Sector.

Benchmarking metrics in the Services, Energy and Financial Services are likely to feature measures of Sustainability. If you are a Private Sector participant in the sectors of Services, Energy and Financial Services, it will be necessary to understand what your policy and strategy is to ensure performance is in line with your peers.

Conclusions for Investors

This report provides the first segmentation of all the CRC participants and is in advance of the publication of the league tables. It provides a useful assessment of the Sub-Sectors across both the Public and Private Sectors and has identified the following additional key points for Investors in CRC Participant Organisations or in Suppliers to these organisations.

Participant Investment Risks

In examining the potential risks for Investors it is clear that the legislation may affect any CRC Participant, whose reputation suffers as a consequence of poor performance in the Scheme. The magnitude of these risks will vary across the Sectors reviewed.

Supplier Investment Risks

Energy and Services are showing strongest in terms of Leaders indicating that these are likely to be the fastest growing sectors. However this also means that organisations in those Sub-Sectors not exhibiting a move towards more sustainable operations will be exposed sooner rather than later.

The overall strength of the Public Sector indicates that Suppliers to Public bodies are at risk if they are not able to point to and demonstrate adherence to a Sustainability policy including an ongoing record of continual improvement.

This report identifies many recommendations for Suppliers to this market see page 68. Investors should use this as a summary to evaluate the potential depth of thinking and the growth potential of their investments in Supplier organisations. This analysis will also help Investors assess the risks to any existing or planned investments in Supplier organisations to the CRC Scheme Participants.

APPENDICES

APPENDIX 1 - FUTURE RESEARCH OPPORTUNITIES

This report is the first in a series of analysis in and around Sustainability and in the uptake of technologies and best practices in addressing this agenda.

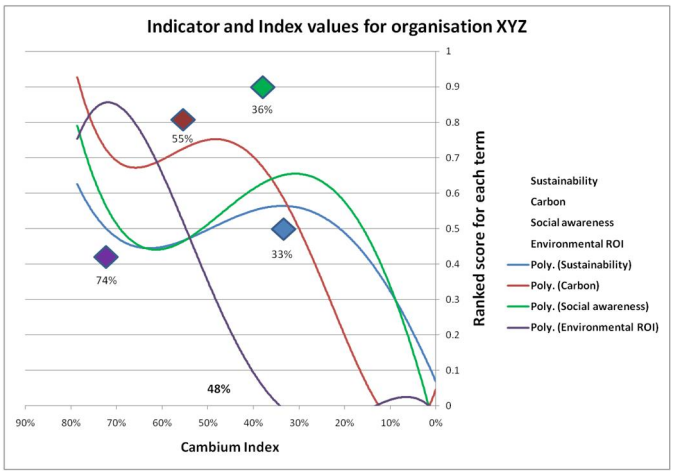
This section contains an outline of the market research and sales development work offered by Cambium. For further information or to discuss specific needs please contact Cambium on the details provided at the end of this section

Future Publications under consideration:

- Further detailed segmentation to identify and isolate new sub segments
- Comparison of the results achieved via the Cambium Method with an analysis of the Footprint report data to be published along with the CRC League Tables In October
- Sub-Sector by Sub-Sector analysis using all four terms of the Indicator Curves – also available as bespoke research (See Fig 1 below)
- Further detailed segmentation to identify and develop new sub segments e.g. Manufacturing
- Application of the Cambium Method to additional metrics of Sustainability
- Application of the Cambium Method to other legislative frameworks

Bespoke Research Opportunities:

- Deeper analysis of Trend data for a Market segment, collection of Participants or an individual organisation
- Competitive assessment of the Sustainability maturity of key named organisations
- Company specific reports indicating company score and attitude to other organisations and to market segment averages
- Individual analysis for any given organisation (even those outside of CRC) using the Indicator Curves. See chart below.

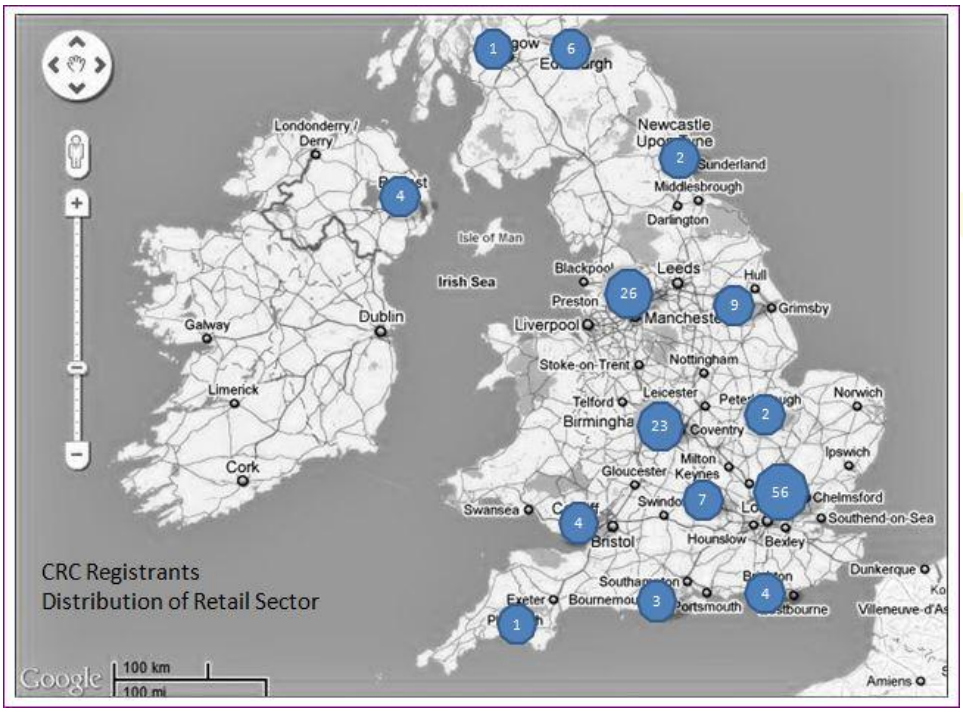


Appendix Figure 1

Bespoke Research Opportunities (continued):

- Mapping of CRC Participants or Segments of Participants to support planning and policy development

  Many forms of maps and data analysis are available. The following is a GeoTagging example for the Retail Sub-Sector.



Appendix Figure 2

For any enquiries in relation to these publications or to explore bespoke market Research opportunities, please email Research@cambiumllp.com

Cambium CRC Related Services Overview

In addition to the Research work evidenced by this Report, Cambium also offers a number of services to help innovators rapidly respond to the new market opportunities being created by the CRC Scheme. These include:

CRC marketing campaign support
Supporting clients to optimise CRC messaging and marketing campaigns, including:

- Development of CRC Value Propositions
- Client executive briefings / focus groups
- Lead Generation & telemarketing
- CRC Collateral development

Direct Sales
Sales support in prioritizing and developing accounts and territories from a CRC opportunity perspective. Including:

- Better understanding and alignment with the Sustainability agenda in their accounts
- Sales development by capitalising on the opportunities for energy reduction
- Building powerful business cases for their goods and services

Channel Sales
supporting the selection and engagement of the best partners to leverage your innovation in CRC market:

- Channel Partner identification and recruitment
- Development of Partner propositions

CRC education
CRC and Sustainability education to enable executive dialogues with your clients for all roles within your extended sales teams including:

- Sales
- Pre-sales
- Marketing
- Professional Services
- Channel Partner

More details on these services can be found by visiting our website at: www.cambiumllp.com or email us: info@cambiumllp.com

APPENDIX 2 – THE STATUS OF THE CRC LEGISLATION

Introduction

This section of the report provide an overview of the status of the CRC legislation and how it is designed to support the UK Government's objectives of reducing greenhouse gas emissions by 2050 by at least 80% compared to the 1990 baseline. This section of the report therefore summarises the history, context and current implications of the CRC legislation at the time of writing in April 2011 and whilst not every nuance of the scheme, it aims to provide sufficient information to create a context for the Research results and analysis presented later in this report.. Up to date information relating to the CRC scheme can be found at the Department of Energy and Climate Change (DECC) website:

http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/crc/crc.aspx

DECC are the architects of the legislation, and are responsible for ensuring that the legislation achieves its objectives in the context of UK Climate Change policy and legislation.

Details of the compliance requirements and operational processes of the Scheme can also be found at the Environment Agency's website:

http://www.environment-agency.gov.uk/business/topics/pollution/98263.aspx

The Environment Agency is the administrator and regulator for the CRC in England and Wales. The other regulators are the Scottish Environment Protection Agency (SEPA) and the Northern Ireland Environment Agency (NIEA).

CRC and the UK Government's Climate Change Policy

In late November 2008 the UK Government introduced the world's first long-term legally binding framework to tackle the dangers of climate change – the Climate Change Act 2008. The Climate Change Act aimed to manage and respond to climate change in the UK, by setting legally binding targets for CO_2 emissions by the UK and establishing clear and regular accountability for achievement of these targets to the UK Parliament and to the devolved legislatures. At the time the Act had two primary objectives:

1. to improve carbon management, helping the transition towards a low-carbon economy in the UK

2. to demonstrate UK leadership internationally

These objectives were underpinned by a number of key provisions of the Act, which included:

1. A legally binding target of at least an 80 percent cut in greenhouse gas emissions by 2050, to be achieved through action in the UK and abroad. Also a reduction in emissions of at least 34 percent by 2020. Both these targets are against a 1990 baseline.

2. A carbon budgeting system which caps emissions over five-year periods, with three budgets set at a time, to ensure that the UK remained on track for the 2050 target. These Carbon budgets run from 2008-12, 2013-17 and 2018-22, and were set in May 2009. The UK Government is obliged to report to Parliament its policies and a proposal to meet these budgets, and this requirement was fulfilled by the UK Low Carbon Transition Plan. Published in July 2009.

3. The creation of the Committee on Climate Change (CCC) - an independent, expert body to advise the Government on the level of carbon budgets and on where cost-effective savings can be made. The Committee submits annual reports to Parliament on the UK's progress towards targets and budgets.

The CRC sits as an important piece of legislation designed to support the achievement of the first of these objectives cited above.
The CRC in relation to other climate change legislation the Climate Change Levy and EU ETS

Climate Change Levy (CCL) and Climate Change Agreements (CCAs)

Prior to the introduction of the CRC, the UK government had already implemented two other schemes in the form of the Climate Change Levy (CCL) and the European Emissions Trading Scheme (EU ETS). The Climate Change Levy (CCL) was introduced in 2001 as an energy tax on energy intensive industries such as aluminium, cement, ceramics, chemicals, foundries, glass, non-ferrous metals, paper, and steel. An 80% discount from the Levy was given for all those sectors that agreed to undertake programmes for improving energy efficiency and/or reducing carbon emissions. These were in the form of Climate Change Agreements (CCAs). This was introduced in 2004 and based on the following criteria.

- The industry sector as a whole has an energy intensity of ≥ 10% (Energy costs / total costs)
- Energy intensity >3% and <10% and import and export penetration ratio of 50%

European Emissions Trading Scheme (EU ETS)

The EU ETS is a European-wide cap and trade scheme and has been in place since 2005 and covers the very largest energy consumers. It requires the EU member states to set an upper limit for emissions (at a country level) and for the participants to buy carbon credits against their forecast level of emissions. In theory (as with the original concept for the CRC) the trading mechanism combined with continually reducing emission limits would start to set a market price for carbon (i.e. the cost of adding greenhouse gases to the atmosphere). Critics of the EU ETS have claimed that to date the overall level of allowances (credits) available has been too high and therefore the price of carbon credits have been too low. This has significantly reduced the effectiveness of the scheme. In response proponents have argued that it had been difficult to assess the overall level emissions across Europe and therefore set a meaningful emissions level target. They also argue that the data collected so far allows them to set more accurate targets going forward.

In relation to the CRC it is important to note that both CCL and the EUETS affect there are high intensity energy users, whilst the CRC affect primarily organisations with low energy intensity use in relation to their core activities. That said, some Participants have operations that are a combination of low and high energy intensity activities. For this reason the CRC Scheme provides concessions allowing Participants whose emissions by from core Sources are already covered by the EUETS and CCL to be exempt from the CRC scheme. For clarity this report focuses on only CRC participants

Legislative History

Formerly known as the Carbon Reduction Commitment, a moniker that continues to be used widely to this day, the CRC Energy Efficiency Scheme is a mandatory carbon emissions management Scheme that originally came into the force in April, 2010 under provisions set up under the Climate Change Act 2008. The fact that this legislation passed into law following broad cross political party support during the middle of the 2010 UK General Election has meant that the legislation did not receive the usual public attention that often accompanies new legislation. For this reason the CRC has suffered from a low level of general awareness and it is only in recent times that it has become more visible due to various controversies surrounding proposed changes by the new Coalition Government to its scope, and impacts and timetable. The CRC Scheme was originally designed to raise awareness about energy consumption and their environmental implications in large organisations - especially at senior level - and to encourage changes in behaviour and infrastructure.

Original Design of the CRC Scheme

The scheme is designed to raise awareness about energy consumption and environmental implications in large organisations - especially at senior level - and to encourage changes in behaviour and infrastructure. The original design of the CRC Scheme was as a market driven, climate change mitigation Scheme, with incentives for Participant organisations to invest in Energy Efficiency infrastructure that reduced their carbon footprint with both financial and reputational benefits for Participants that made such investments. Each year, all qualifying organisations were required to report on their energy consumption levels so that it could be determined whether these emission levels were inappropriately high, and whether enough was being done to reduce energy inefficiencies. Those organisations above an initial energy consumption threshold were required to participate fully in the scheme, purchasing and submitting sufficient allowances to meet their annual emissions in the energy categories specified.

Qualification Criteria

Qualification for CRC was based on half hourly electricity supply received during the 2008 calendar year. All organisations that had at least one half hourly meters settled on the half hourly market in 2008 were required to do something under the CRC, and inform the Environment Agency.
Two thresholds were originally set for Participation:

1. An organisation qualified a full participant in CRC if: at any point during the qualification period it had at least one half hourly meter (HHM) settled on the half hourly market, and its 2008 annual electricity supply through all HHMs was at least 6,000 MWh.

2. Organisations that had at least one HHM settled on the half hourly market, but whose annual energy supply was less than 6,000 MWh did not have to participate in CRC. However, these organisations do have to make an information disclosure.

Registration for participation in the CRC was required to happen by 30th September 2010. Originally it was expected that around 20,000 organisations were potentially liable, although the majority of these were only expected to be required to make an information disclosure about their energy usage. 5,000 organisations were expected to be Full Participants that had to not only record and monitor their CO_2 emissions, but also purchase allowances. After the registration date had passed the Environment Agency published a list of Registered Participants that were full Participants in the Scheme. These numbered 2,770 and it is these Participants to which the rest of this report considers in terms of their likely response to the legislation. The other respondents were called Information Declarers and numbered some 11,303 organisations.

The first year of reporting began in April 2010, with the first sales of allowances originally expected to be held in April 2011. These allowances must be purchased for each tonne of carbon dioxide an organisation emits. During the introductory phase, all carbon emission allowances were to be sold at a fixed price of £12 per tonne of CO2. From April 2013, it was planned that allowances were to be auctioned by the Government, with fewer available each year. This was in line with a structure known as a '*Cap and Trade*' system. In the event of excessive CRC allowance prices, a 'safety valve' mechanism would have allowed EU Emissions Trading Scheme (ETS) allowances to be purchased via the Environment Agency for use in the scheme. Proceeds from the sale of allowances were also originally expected to be distributed back or 'recycled' amongst the organisations within the scheme, based on their progress with emissions.

A bonus or penalty was to be applied based on the extent to which companies had reduced their emissions - or not - compared with other Participants. Essentially, the scheme was set up with a carrot to reward those that had reduced their emissions and a stick to penalise those who didn't take proactive measures to cut their carbon emissions.

Footprint Reports

The primary form of reporting required under the Scheme is for Participants to determine which of their energy uses fall within the scope of the CRC provisions. They are then required to submit an annual Footprint Report to the Environment Agency covering all energy sources including electricity, gas and any other fuel types in use within the organisation such as coal, LPG and diesel. Energy sources that are not considered for CRC purposes are sources including transport, domestic accommodation and unconsumed supplies. The report also requires that the organisation produces an Evidence Pack providing information in support of the footprint report e.g. energy bills, meter readings and fuel delivery.

Once energy consumption has been established the CRC legislation provides conversion factors for energy consumption from all sources to be converted into a total Carbon footprint measured in tonnes of Carbon dioxide equivalents (CO_2e). It is this data that is received from all Participants that forms the basis for the calculation of the overall League Table. The first Footprint reports covering the Footprint year 2010/11 are required to be submitted by the Participants to the Environment Agency by the 29th July 2011.

League Table Implications

The league table was initially designed to be a way of calculating the recycling payments (now withdrawn from the current scheme) and creating a public profile where organisations' energy management performance could be assessed. Over the initial period of the scheme (first 3 years) the intention was to reward organisations that had invested in a formal energy management system (e.g. the Carbon Trust Standard) and infrastructure (E.g. Smart meters). Over time these metrics would give way to an assessment based on energy usage performance compared with previous years.

There has been much criticism of this aspect of the scheme around how can you compare manufacturing with say Financial Services or the NHS. It was also argued that organisations who had already taken steps to reduce their energy consumption would not have the same opportunities for 'quick wins' of the less energy focused organisations. Nevertheless the information provided by the Participants will become a matter of public record and as such the information will start to create significant reputational exposure.

Impact of non-compliance

The CRC is a serious initiative, with serious implications for organisations that fail to cooperate. These range from escalating fines (starting at £5,000) for registration and reporting delays, and penalties of £40 for each tonne of CO2 (tCO2) of emissions incorrectly reported (applied wherever there is a margin of error greater than 5%), to imprisonment of up to three years for deliberate omissions or manipulation of the data. Full details of the legal penalties are covered in Appendix 4

The Environment Agency (EA) has already commenced enforcement action against those who have refused EA offers of help to register and appear to be pursuing a non-compliance policy.

Current Status of the CRC

Following significant lobbying by industry regarding the complexity of the original legislation, In the October 2010 Spending Review, the UK Government announced that the CRC was to be simplified to reduce the burden on businesses, with the first allowance sales for 2011/12 emissions now taking place in 2012 rather than 2011. The Government made the surprise announcement that the Revenue from the sale of CRC allowances, expected to be £1 billion a year by 2014/15, was to be used to support '*the public finances, including spending on the environment, rather than recycled to participants'*.

Financial Impact of the changes

This simplification was probably not the kind expected by Industry and has resulted in the new allowance charges being dubbed a new 'Carbon tax' and it has borne the brunt of much criticism and controversy as a result. The *price signal to participants and to support the public finances*. To 'soften the blow' of this unwelcome financial impact upon Participants in the Scheme the date of the first sale of allowances was postponed until 2012 instead of 2011. The precise timing of the need to purchase these allowances has yet to be confirmed, but it seems likely these allowances will need to be bought in April 2012. This change has also meant that Participants now only need to purchase allowances to cover their 2011/12 emissions at the end of the 2011/12 compliance year.

The Treasury still retains the right to set the allowance price of £12 per tonne of CO_2e. In order to give a flavour of the likely impact of these changes Cambium has constructed the following

table of the likely impact in terms of the additional allowance costs for a range of Participants. Although the qualifying criteria for the CRC Scheme are based on electricity usage, the cost of allowances is based on all forms of energy used (even if it is renewable energy). Based on figures provided by the Environment Agency there is a conversion factor which calculates how much CO_2 is produced for every kilowatt-hour of electricity used. Similar conversion factors have been used for fuels like natural gas and oil that are used for heating or stand-by generators. The examples below are based on typical sector figures and ratios of electricity

CRC ENERGY EFFICIENCY SCHEME



Type of Organisation	SMALL (University)	MEDIUM (Enterprise Data Centre)	LARGE (Central Government)
Electricity Bill	£4.0m	£12.0m	£60.0m
Other Energy Costs	£2.0m	£4.6m	£23.0m
CRC Tax	£0.4m	£1.2m	£6.5m

Appendix Figure 3

usage/costs relative to other sources.

More information on our allowance model can be obtained by contacting us at: crc@cambiumllp.com

Reputational Impact of the Changes

As far as the Reputational Impact of these changes is concerned the main reputational driver within the Scheme is now the Performance League Table. This has been retained with no accompanying changes to either the metric weightings or the publication dates envisaged in the original legislation. This means that the first Performance League Table will be published in October 2011 with a deadline of submission of the first footprint reports to cover the year 2010/11 by the 29th July, 2011.

Ongoing Simplification Consultation Process

At the time of the October 2010 Spending Review, DECC also announced a formal Consultation on ways to simplify the Scheme. Two consultations have already been completed.

First Simplification Consultation

The first of these consultations ran from the 17 November to the 17 December 2010 and the Government response was published in February 2011. This consultation has resulted in an initial amendment to the CRC Energy Efficiency Scheme Order 2010 came into on the 1st April

2011. These amendments were primarily focused on extending the introductory phase and postponing the start of Phase 2 until 2014/15.

DECC have cited that the objective of this delay is to *facilitate future amendments to be made to the legislation underpinning the scheme as a result of a broader simplification review.*

The other key change made in this consultation was to remove the concept of Information declarers so these 11,003 organisations have no further responsibility under the Scheme at present. However, it is generally assumed that these organisations will be brought under some form of carbon emissions control at a later date in all probability around the start of Phase 2 of the Scheme.

Second Simplification Consultation

In January 2011 DECC published a further five discussion papers relating to potential simplification of the CRC legislation. These papers covered the following areas:

- Supply rules
- Qualification rules
- Organisational rules
- Timing and frequency of allowance sales
- Overlap between energy efficiency /climate change instruments

Any changes announced in relation to the Scheme are not anticipated to affect the operation of the legislation in the first phase. DEC and the Environment Agency have been at pains to stress that Participants need to meet their obligations under the existing legislation irrespective of the outcome of this consultation. The consultation concluded on the 11th March, 2011

DECC has indicated that any changes to the CRC will consider these areas in the light of:

- Wider policy developments in other areas e.g. the implementation of a carbon price floor by the Treasury, Electricity Market Reform, implementation of a Green Deal for business, the review of Climate Change Agreements, and company reporting of greenhouse gas emissions
- The perceived complexity of the CRC scheme and hence the administrative burden on:
    - those organisations which are subject to the scheme
    - the administrators of the scheme
- Optimising the projected energy savings attributable to the CRC scheme.

DECC has also indicated that any formal legislative proposals will be subject to public consultation with the intention that they would come into force before registration for the second phase of the scheme begins in April 2013.

The results of this consultation and any changes to the scheme will be published on DECC's website: http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/crc/crc.aspx

Who is now affected?

The report provides a detailed analysis of the composition of the 2,770 Participants in the CRC Energy Efficiency Scheme (CRC), by industry sector covering both Private and Public Sector Participants.

It analyses the breakdown of Participant s between and within those organisations in the Public and Private Sector. These two primary sectors have been further segmented into key component market segments as follows:

Public Sector analysis is included for each of the following sub segments:

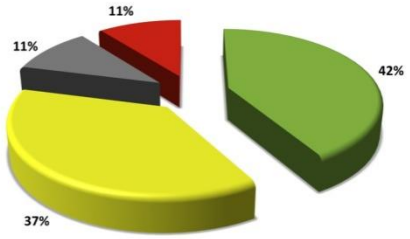
- Central Government
- Local Government
- National Health Service
-
- Police
- Academia

Private Sector analysis is provided for each of the following sub segments:

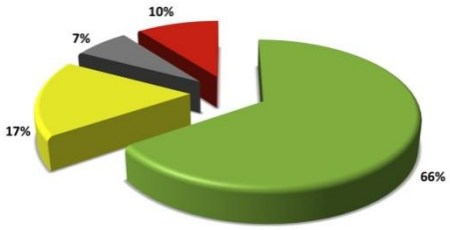
- Energy
- Financial services
- Food and drink production
- Information and communications technology (ICT)
- Leisure and hospitality
- Manufacturing
- Media and publishing
- Pharmaceutical and Healthcare
- Professional services
- Property and construction
- Retail
- Transport and logistics
- Water

APPENDIX 3 – PUBLIC SECTOR – SUB-SECTOR ANALYSIS

ALL Private Sectors Participants



Academia



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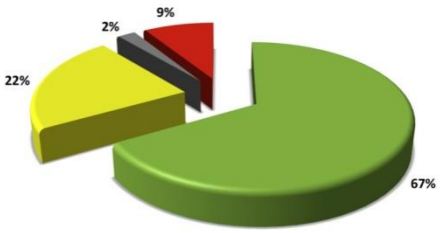
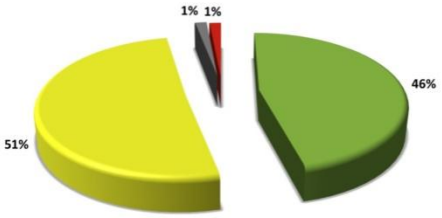


Local Government



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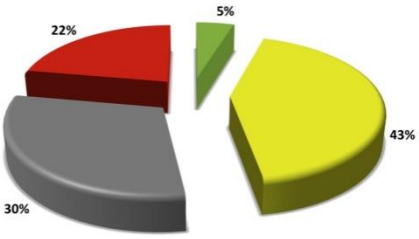

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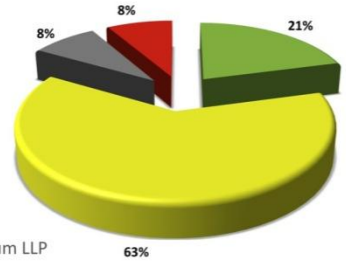
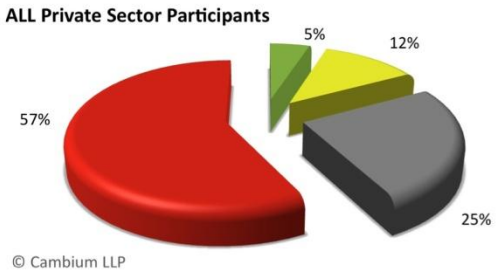
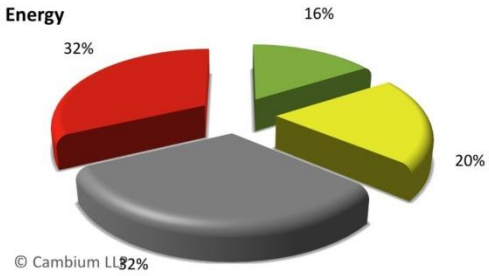
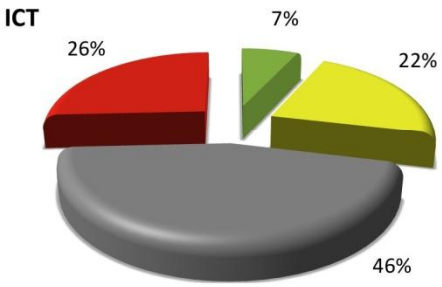


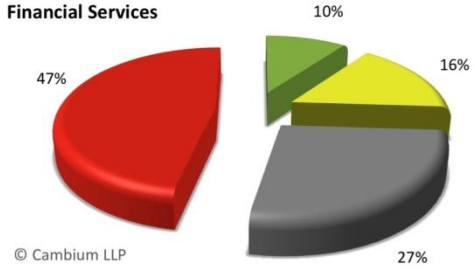
= LEADERS = EARLY MAJORITY = LATE MAJORITY = LAGGARDS

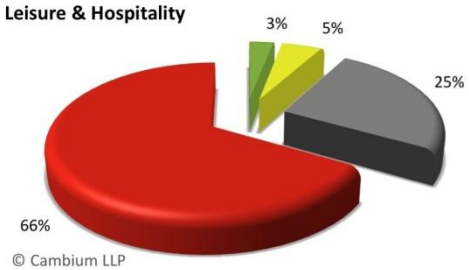
APPENDIX 4 – PRIVATE SECTOR – SUB-SECTOR ANALYSIS

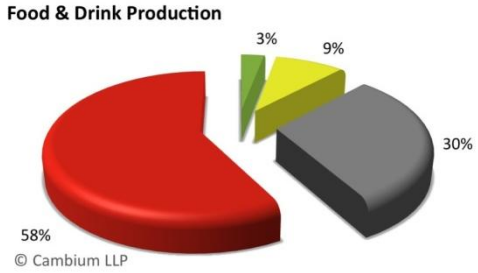












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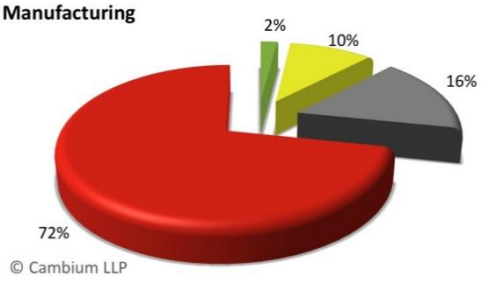
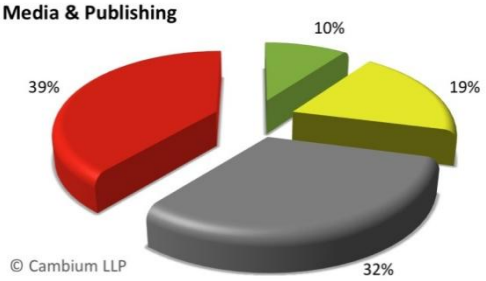


Media & Publishing



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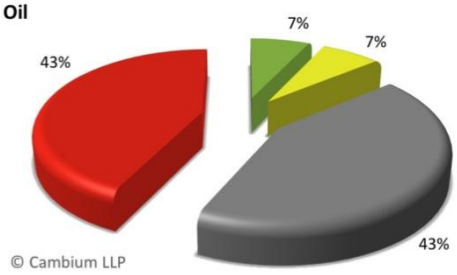

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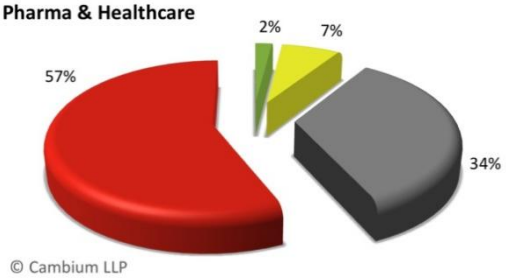
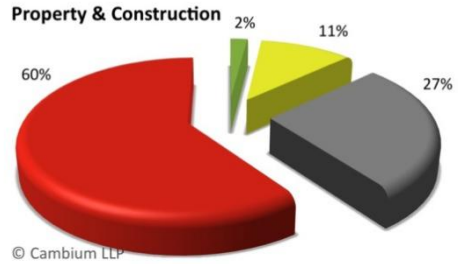
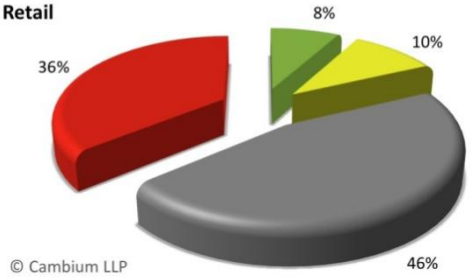


Property & Construction



Retail



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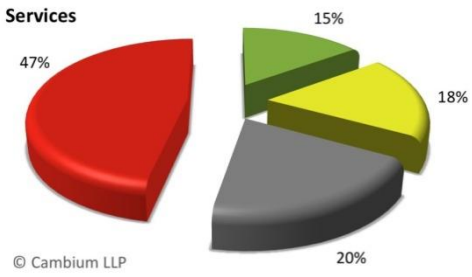
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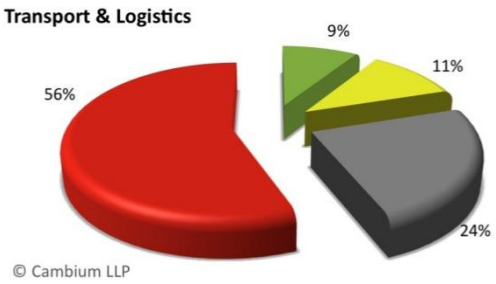
Transport & Logistics
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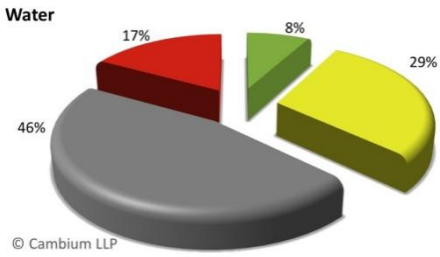
Water
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= EARLY MAJORITY
= LATE MAJORITY
= LAGGARDS

APPENDIX 5 – CRC COMMITMENTS TIMETABLE AND ENFORCEMENT

COMMITMENT	RECURRING DEADLINES	FIRST YEAR DEADLINES	PENALTIES
Participant registration	Last working day of all phases of the CRC Energy Efficiency Scheme	30-09-10	£5000 + £500 per day delay
Submission of Footprint Report	Last working day in July	29-07-11	£5,000 + £0.05 per tonne of CO2 unreported. Penalties increase after 40 days.
Submission of Annual Report	Last working day in July		£5,000 + £0.05 per tonne of CO2 unreported. Penalties increase after 40 days For reporting inaccuracies.
Maintain records	On-going		Up to £5 per tonne of CO2 for all of the previous year's emissions. Equivalent to over 40% of the organisation's CRC tax for the year.

APPENDIX 6 – ABOUT CAMBIUM LLP

The market for these Sustainable Innovations is forecast to be worth $1.3 trillion by 2020.*
**HSBC – 'Sizing the Climate Economy' – Sept. 2010.*

Cambium accelerates the adoption of these Sustainable technology innovations that save money, improve profits and make best use of valuable resources.

Established in 2008 Cambium is a specialist consultancy that accelerates the growth of technology businesses in the Cleantech, ICT, and Engineering sectors market sectors. Our aim is to help these innovators to capitalise on the growing trends by large organisations towards the adoption of Sustainable business strategies and policies
Our services help our client's by enabling their sales, marketing and professional services teams to understand and then exploit the Sustainability agenda with the objective of driving scalable, growth in revenues.

During the last two years we have been helping technology Suppliers, such as HP and Philips, as well as many smaller innovative companies to capitalise on the market opportunities being created by the implementation of the CRC Energy Efficiency Scheme (CRC) in the UK.
We offer a number of services to help innovators rapidly respond to the new market opportunities being created by the CRC Scheme. Our CRC services include:

- CRC Target market Research and selection
- CRC Marketing campaign support
- CRC Sales development– direct and Indirect
- CRC Education

More details on these services can be found In Appendix 1 of this report, alternatively please visit our website at: www.cambiumllp.com or via email

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