

Customer Segmentation Report Peer Review

Capacity to Customers (C₂C) Project



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APPROVAL

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GLOSSARY OF TERMS

| Abbreviation | Term |
|------------------|--------------------------|
| C ₂ C | Capacity to Customers |
| CEP | Customer Engagement Plan |
| I&C | Industrial & Commercial |
| LCNF | Low Carbon Network Fund |
| LC | Latent Class |
| MNL | Multinomial Logit |

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1. EXECUTIVE SUMMARY

The Customer Segmentation Report assesses the potential demand for C₂C commercial agreements, and the terms of these contracts. It presents an analysis of 180 Industrial and Commercial (I&C) customers who participated in a customer survey. The report provides an overview of the customer survey results. The analysis is meticulous and detailed. It provides a good understanding of customers' perceptions of C₂C, and the level of interest among customers in signing up to the initiative; together with contract attributes that affect acceptance or rejection of the agreement.

2. OBJECTIVE OF THE PEER REVIEW

The Customer Segmentation Report presents an analysis of 180 I&C customers who agreed to participate in a one-off customer survey. This peer review of the customer survey results is intended to maintain standards of quality, improve performance, and provide credibility.

This review has been undertaken by Professor Ken Willis. Ken Willis is Emeritus Professor of Environmental Economics at Newcastle University. His research concentrates on environmental valuation (using stated preference, and revealed preference travel-cost and hedonic price models) and cost-benefit analysis; covering biodiversity, cultural heritage, energy, forests, landscape, quarries, recreation, transport, waste disposal, and water quality and supply.

He is currently the Editor of the Journal of Environmental Economics & Policy. He has undertaken research projects on Renewable Energy and Its Impact on Rural Development and Sustainability in the UK, for the Department of Trade and Industry; on The Growth Potential for Micro-generation in England, Wales and Scotland, for the Department of Business, Enterprise & Regulatory Reform; a Cost-Benefit Analysis of Sustainable Public Procurement, for the Department for Environment, Food & Rural Affairs; and consumer values and uptake rates for photovoltaic systems by households in Cyprus..

Ken also has a wealth of experience in evaluating the suitability of market research methodologies and the application of advanced statistical analysis techniques onto market research data. Given his expertise within the energy sector he is well placed to provide a peer review of the C₂C survey results.

The rest of this report focuses on an assessment of the Customer Segmentation Report to OFGEM by Electricity North West, and is based entirely on the informed opinion of Ken Willis.

3. CUSTOMER SEGMENTATION OBJECTIVES

The objective of the Customer Segmentation Report is to present the general findings of a customer survey of 180 Industrial and Commercial (I&C) customers who have premises in the Electricity North West operating region. The survey sought to assess whether the C₂C

method will effectively engage customers in a new form of demand side response to electricity supply.

The research was designed to identify any variations in the needs of different customer segments with respect to energy, and the value customers place on the constituent parts of C₂C, including their preferences on further engagement in C₂C. The study also aimed to identify the type of customers who are likely to have greatest interest in C₂C, and the specific attributes any C₂C contract would need to include to increase the appeal and likely take-up of C₂C.

The report presents information on;

- The level of interest amongst I&C customers in the North West for C₂C;
- The level of interest by industry sector;
- The relationship between the level of interest and the relative size of the electricity demand in each sector;
- The contract elements (attributes) that are required to make C₂C attractive.

The report assesses the potential demand for C₂C commercial agreements, and the terms of these contracts.

4. REPORTED RESULTS

The Customer Segmentation Report presents the customer survey results which address the research objectives. The results are presented with clarity and alacrity.

However, the early stages of the Report do not delve into detail about the statistical significance of the results. The general finding that “52% of customers found C₂C appealing” and that “this dropped to 26% when customers saw the scope of the contracts in more detail (the size of the reward for participating in the scheme)” is probably seen intuitively as being statistically significant. However, it would be useful to see the statistical confidence limits for these two percentage figures.

The conclusion that “31% indicated that they would recommend their organisation consider opting into a C₂C contract, dropping to 26% when they had seen the potential scope of the contracts in more detail (e.g. the size of the financial reward as presented in the Stated Preference exercise)” may not be statistically significant. Confidence intervals for these percentage figures would be helpful in interpreting the results. This also applies to Table 2.2a for interest in C₂C by industry sector: it is not obvious that the differences between the two sectors (manufacturing & processing; and all other sectors) are statistically significant.

Manufacturing and processing firms account for 46% of the sample (n=82). The next largest sector or segment was commercial and office premises with 8% of the sample (n=14); and eight sectors only accounted for 3% or less each (n ≤ 5) of the sample of 180 (e.g. health & social work; storage/warehouse; accommodation & food; transportation; agriculture, forestry

& fishing). Clearly accurate, reliable and robust conclusions cannot be drawn for individual manufacturing sectors on the basis of such small samples of customers. Hence the analysis rightly aggregated all of the non-manufacturing and processing sectors into one segment which accounted for 54% of responses (n=98).

The results reporting the potential take up for different contract elements appears to be logical. The level of compensation required increases as the number of supply interruptions increases, for 1 hour, 2 hour and 3 hour durations.

The coefficients for the contract attributes that would have been produced in the analysis of the stated preference choice based tasks are not reported, but each coefficient will have a standard error. It would be useful to know if the difference between manufacturing and other sectors in Chart 2.2b (potential take up for different contract elements) is statistically significant. And also whether the statement “a significantly higher uptake was observed among customers in Manufacturing and Processing versus those in other sectors (24% v 20%)” is indeed true. In fact there is no statistically significant difference at the 95% level between these two percentages. This has important policy implications for C₂C aims to target specific sectors in the economy, given that manufacturing and processing is seen as the key target sector.

The fieldwork for the survey was expertly managed. Duplicate records were removed from the data base. A consistent survey process was followed.

The sample size depends on the relative accuracy the investigator requires in the estimate of p , the probability of this accuracy, the largest number of levels of each attribute, and the number of choice scenarios presented to each survey participant. Variations in taste and the number of attribute levels will increase the sample size, as will reductions in the number of choice scenarios respondents are required to complete. So whilst a sample size of 100 for each sub-group is often taken as a rule of thumb, it is not a definitive recommendation for every stated preference study.

The descriptive statistics on I&C customers' perceptions of the C₂C concept provide a wealth of information about attitudes towards C₂C. Again, it would be useful to have some confidence limits for the percentages, especially where comparisons are being made e.g. between “manufacturing and processing” and “other” industries.

The “margin of error” in estimates is mentioned in section five of the report: results of specific examples of C₂C contracts. This ‘margin of error’ is derived from the NML coefficient estimates. Again it would be helpful if some of the statistically significant results in Charts 5.3, 5.4 and 5.5, on different contract elements (payment type, length of contract, and safeguarded days) were highlighted.

5. CONCLUSION

The Customer Segmentation Report by Impact Research provides an effective overview of the survey results. The analysis is meticulous and detailed. It provides a good understanding of the customers' perceptions of C₂C, and the level of interest among

customers in C₂C; together with contract attributes that affect acceptance of C₂C by I&C customers.