PRODUCT DIFFERENTIATION AND NON-PRICE COMPETITION IN LIBERALISED ENERGY MARKETS: WHAT POTENTIAL FOR ENERGY SERVICES?

R A Harper, T N Oliver

Aston University, United Kingdom

SUMMARY

The paper describes the inherent marketing problems associated with the supply of energy commodities within liberalised energy markets. The authors consider the potential of Energy Services as additional, tangible benefits in order to provide a complete 'energy package'. The paper draws upon data collected during a study of High Voltage (HV) industrial customers within the United Kingdom (UK).

The energy products form a unique grouping, located at the boundaries between products and services. Therefore, important considerations particularly with respect to marketing must be administered in order to serve and retain customers effectively. Electricity and gas are sold and purchased as products. For industrial consumers both commodities are essentially ubiquitous, and the quality governed by industrial standards. In a practical situation, it is unit price that governs the decision on energy supplier.

The intangible nature of energy classifications, particularly electricity, has important marketing implications. The degree of product intangibility determines the difficulty of both establishing new customers and retaining existing ones. Marketing theory provides evidence that consumers of intangible products are seldom aware of being served well. This is especially true for situations where intangible products have, for the duration of a contract, constant continuity in supply. An important aspect of intangible marketing principles, remains that ‘a consumer may not be aware of what they receive until they don’t receive it’. Therefore product absence, or an aspect of product absence, leads to dissatisfaction and may result in the customer being vulnerable to competition from alternative suppliers.

The last decade has been witness to substantial restructuring of the UK energy markets, particularly in the Electricity Supply Industry (ESI). The incremental onset of supply competition has resulted in increasing numbers of second-tier suppliers (the term given to companies supplying energy to users not within the franchise boundaries of the regional distribution network). There are currently in excess of 25 electricity suppliers operating within the UK, all of whom compete for customers, yet offer essentially the same product. The differentiating factor amongst the products is unit price (pence per kilowatt-hour of energy). The consequence of energy market liberalisation and competition in generation and supply, has been a reduction in the unit cost of industrial energy.

A potential solution acknowledges the requirement for customers to be regularly reminded or updated with regard to what is being received as a product. The strategic implications for marketing could provide a new dimension to the supply of energy. By providing tangible benefits through the form of Energy Services, energy suppliers present a more complete energy package to the consumer. A package that may provide greater incentive for the industrial customer as new legislation and regulatory measures emerge.

An extensive study has been conducted on 50% of all High Voltage customers with a maximum electricity demand in excess of 1MVA. The study covered a single franchise region of a UK distribution company. The study aimed to assess corporate attitude towards energy efficiency investment, and energy conservation programme’s and policy. It was also the aim of the study to assess the priority of energy efficiency programme investment among customers covering a broad spectrum of industrial sub-sector classifications. The study provides evidence for the existence of energy services administered through the supply side of the electricity industry.
DIFFERENTIATION DE PRODUIT ET CONCURRENCE NON FINANCIERE DANS LES MARCHES D'ENERGIE LIBERALISES : QUEL EST LE POTENTIEL POUR LES SERVICES DE L'ENERGIE ?

R A Harper, T N Oliver

Université d'Aston, Royaume-Uni

RESUME

Ce document décrit les problèmes de marketing inhérents associés à la fourniture des produits électriques dans les marchés d'énergie liberalisés. Les auteurs considèrent le potentiel des Services de l'Energie comme des avantages supplémentaires tangibles afin de procurer un 'produit global d'énergie'. Ce document utilise de l'information collectée pendant une étude des clients industriels utilisant les Hautes Tensions (HT) au Royaume-Uni (R-U).

Les produits d'énergie forment un groupe unique placé à l'intersection des produits et des services. Il est donc important d'administrer des considérations importantes, spécialement en ce qui concerne le marketing, afin de servir et de retenir d'une façon efficace la clientèle. L'électricité et le gaz sont vendus et achetés comme des produits. Pour les clients industriels, les deux matières premières sont essentiellement des matières omniprésentes, dont la qualité est régie par des standards industriels. En pratique, c'est le prix à l'unité qui gouverne la décision concernant le fournisseur d'énergie.

La nature intangible des classifications d'énergie, spécialement l'électricité, a des implications importantes en ce qui concerne le marketing. Le degré d'intangibilité de produit détermine la difficulté d'établir des nouveaux clients et de retenir les clients existants. Les théories de marketing fournissent l'évidence que les clients de produits intangibles sont rarement conscients d'être bien servi. Ceci est spécialement vrai pour les situations comportant des produits intangibles ayant une continuité d'alimentation constante pendant la durée d'un contrat. Un important aspect des principes de marketing de l'intangible, est qu'un client n'est peut-être pas conscient de ce qu'il reçoit tant que l'alimentation de ceci n'a pas été coupée. Donc, l'absence de produit, ou un aspect d'absence de produit, apporte l'insatisfaction et peut avoir pour résultat une clientèle vulnérable à la concurrence des autres fournisseurs.

Les dix dernières années ont vu une restructuration importante des marchés de l'énergie du Royaume-Uni, spécialement dans l'Industrie de l'Alimentation en Electricité (IAE). Le début incrémentiel de la concurrence d'alimentation a eu pour résultat un nombre croissant de fournisseurs de deuxième ordre (le nom donné aux entreprises fournissant de l'énergie à des utilisateurs non situés dans les frontières de franchise du réseau de distribution régional). Il existe à présent plus de 25 fournisseurs d'électricité au Royaume-Uni, tous-ces-ci étant en concurrence pour la clientèle, et cependant offrant essentiellement le même produit. Le facteur de différentiation entre les produits est le prix unitaire (pence par kilowatt-heure d'énergie). La conséquence de la libéralisation du marché de l'énergie et de la concurrence dans la génération et dans la distribution de l'énergie a été une réduction du prix de revient unitaire de l'énergie industrielle.

Une solution potentielle reconnaît la nécessité de rappeler aux clients ou d'informer ceux-ci de ce qui est reçu comme un produit. Il est possible que les implications stratégiques pour le marketing puissent procurer une nouvelle dimension à l'alimentation d'électricité. En fournissant des avantages tangibles prenant la forme de Services d'Energie, les fournisseurs d'énergie présentent un produit global d'électricité plus complet au client. Un produit global capable de fournir un encouragement accru au client industriel pendant l'apparition d'une nouvelle législation et de nouvelles mesures réglementaires.

Une étude approfondie a été entreprise sur 50% de tous les clients de Haute Tension ayant un besoin maximal d'électricité excédant 1MVA. L'étude a couvert une seule région de franchise d'une entreprise de distribution du Royaume-Uni. L'objectif de cette étude était d'évaluer l'attitude des sociétés envers les investissements concernant le rendement énergétique, les programmes et les politiques de conservation d'énergie. L'objectif de cette étude était aussi d'évaluer la priorité des investissements concernant le rendement énergétique parmi les clients couvrant des classifications de sous-secteur industriel très diversifiées. Cette étude fournit l'évidence pour l'existence de Services d'Energie administrés par l'intermédiaire du côté de l'alimentation de l'Industrie de l'Electricité.
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R A Harper & T N Oliver

Aston University, United Kingdom

INTRODUCTION

There has been substantial change to the architecture of the UK energy industry primarily due to privatisation and subsequent liberalisation. There are currently 29 electricity suppliers operating in the industrial consumers market (January, 2001). A figure which incorporates both first and second tier supply licence holders (the term given to companies supplying energy to customers not within the franchise boundaries of the regional distribution network). Such competition has provided a typical economic outcome, in the reduction of the unit price of electricity for the consumer. A consequence of price competition has been the negative implications with respect to load management programmes and energy conservation through energy efficiency. Consumers are naturally disinclined to optimise consumption when the economic drivers have been minimised. This undoubtedly has a negative environmental outcome due to the acceptance of energy related carbon dioxide emissions being the dominant cause of global climate change, Houghton et al (5).

This paper examines the intangibility of energy supply and offers a solution comprised of marketing theory and actual industrial customer information. Energy services provide a potential marketing tool with which to convey a value added energy package to the customer. Energy services can be utilised to benefit the energy supplier, energy consumer and satisfy environmental legislation.

INTANGIBILITY OF ENERGY SUPPLY

Basic economic theory assumes that companies within similar industrial classifications produce identical, homogeneous products. In practice this is rarely true, and such a situation would form an exception rather than a rule. However, the current energy supply market within the UK would fit within the boundaries of such an assumption.

There are three primary energy commodities for end-use industrial processes, electricity, gas and water. This paper however, is not concerned with water supply, as the markets have not yet evolved to the same level of competition that dominates the markets of electricity and gas. The energy products form a unique grouping, located at the boundaries between products and services. Therefore, important considerations particularly with respect to marketing must be administered in order to serve and retain customers effectively. Electricity and gas are sold and purchased as products. For industrial consumers both commodities are essentially ubiquitous, and the quality governed by industrial standards. In a practical situation, it is unit price that reflects the decision on energy supplier.

The intangible nature of energy classifications, particularly electricity, has important marketing implications. The degree of product intangibility determines the difficulty of both establishing new customers and retaining existing ones. Marketing theory provides evidence that consumers of intangible products are seldom aware of being served well, Levitt (6). This is especially true for situations where intangible products have, for the duration of a contract, constant continuity in supply. An important aspect of intangible marketing principles, remains that ‘a consumer may not be aware of what they receive until they don’t receive it’, Levitt (7). Therefore, product deficiency or an aspect of product deficiency may lead to dissatisfaction and result in the customer being vulnerable to competition from alternative suppliers. This forms an important consideration in the potential of value added supply contracts and the benefits offered to the consumer.

INDUSTRIAL ENERGY POLICY

A study aimed at assessing corporate attitude towards energy efficiency investment, conservation programmes and energy policy has been conducted. In addition, the study also aimed to estimate the priority of energy efficiency investment among customers covering a broad spectrum of industrial sub-sector classifications. The study was conducted on 50% of all High Voltage (HV) customers with a maximum electricity demand, equivalent to or more than 1MVA within the franchise region of a single UK distribution company.

Figure 1 describes a histogram illustrating the distribution of events whereby a consumer has taken
advantage of the competitive market and changed electricity supplier. The chart clearly shows a degree of apathy towards the energy supplier. The competitive market began in April 1990 for customers having a maximum demand of 1MW+. The market was subsequently increased in April 1994 for customers experiencing a maximum demand within the extremes of 100kW to 1MW. Therefore, a period exists of between 6 and 10 years in which the consumer had the opportunity to change contractual obligation to the supplier of electricity.

A number of potential factors exist which could influence the distribution shown in Figure 1. However, contractual obligation to an existing supplier can be excluded. Results from the HV consumers’ study provided evidence that 75% of industrial customers employ annual contracts (Figure 2). Experience suggests that the majority of industrial users have poor specific knowledge in the arranging of energy supply contracts. The UK has witnessed an increase in the number of independent energy brokers offering such a service. The conclusion can be formed that contracts are graded against unit price criterion, and not derived from relationships with the existing energy supplier.

The study indicated that industrial consumers are aware of the implications of energy utilisation but are unable to justify internal capital expenditure on potential projects. Paradoxically, industrial consumers were hesitant towards the employment of external consultants, citing insufficient expertise and ill-defined capital costs among the explanations.

Current and future environmental legislation could have severe implications for UK energy consumers. Although well publicised, UK industry has been slow to acknowledge and address any response to the impending introduction of the Climate Change Levy (CCL). The levy, which forms part of the UK Governments commitments to the 1997 Kyoto Protocol Agreement, will introduce an increase to the unit cost of energy classifications. In the case of electricity, the levy will result in an additional 0.43 p/kWh, and for gas, 0.15 p/kWh. The effect for industry will be dependent upon existing supply contracts, but could result in an increase in energy expenditure of between 10 to 25 percent. Therefore, efficient utilisation of energy and energy conservation can form a primary business driver for the inclusion of energy services within supply contracts. Figure 4 illustrates the typical duration of payback periods for industrial users.
investing in energy efficiency programmes. The provision of ‘known outcome’ was incorporated within the study, a term referring to investment in proven technologies with well-defined economic implications. The data clearly indicates the potential for industrial energy utilisation programmes displaying a two, or in some case, three-year payback characteristic.

Statistical analysis of the HV consumers’ study provides evidence to support the theory of product differentiation through energy services. Figure 5 illustrates the relationship between an industrial consumer’s attitude towards maximum contractual obligation and the number of occasions that electricity supplier has changed since the introduction of the competitive environment.

The illustration describes a strong positive correlation between the stated variables \( r=0.35, p<0.002 \). The high significance provides evidence of an interesting trend highlighted by the study. Industrial customers displaying characteristics of variation concerning energy supplier, are more inclined to accept long-term supply contracts offering additional energy services. The author’s proffer an explanation based upon specific corporate attitude towards energy expenditure. Organisations, which assign greater priority to energy demands, will currently be characterised by short-term contractual obligation. The organisation is then strategically positioned to obtain optimum contract conditions at regular intervals, benefiting from continuous low price per unit of energy consumed. Moreover, industrial customers of this nature are also aware of the potential benefits arising through value-added contracts, and, are therefore inclined to accept longer-term obligations.

Figure 6 continues the analysis on corporate attitude towards long-term energy contracts. The information is correlated against annual electricity expenditure with each unit accounting for £½m sterling. The relationship describes a situation highlighting the significance of unit price as the primary consideration for large electricity consumers. The strategic focus for large organisations remains continual low unit price. Further research is required to ascertain, whether or not a breakpoint exists between the business drivers for optimum energy utilisation and basic economic drivers on unit price.

Data from Figure 6 represents a negative relationship between the annual electricity expenditure \( (*£ ½m) \) and maximum contract term \( (n=120) \). However, the correlation does not display true significant characteristics \( r=0.16, p=0.07 \), due to the universally accepted boundary of significance being \( p=0.05 \).

**PRODUCT DIFFERENTIATION AND ENERGY SERVICES**

As previously stated the restructuring of the UK energy markets and the incremental onset of supply competition resulted in augmenting second tier suppliers. Consequently, the relationship between the
industrial consumer and the energy supplier has already evolved during the previous decade. Figure 7 illustrates the development of the energy supply business in the UK. The next stage of development must be considered with attention to the conflicting interests that exists between the generation, distribution and supply sections of the industry.

Figure 7-Evolving relationship between energy supplier and customer.

Energy supply strategy must be sensitive to customer requirements and flexible in order to retain existing consumers and attract new business. This is especially true for customers displaying signs of vulnerability to competition. Differentiation of supply contracts will therefore require market focus. Tailored supply agreements offer the potential for penetration into key industrial sectors. Revenue will then be increased through a broader customer base as opposed to a streamline supply contract.

Value Added Services

The provision of energy services arises as a direct consequence of the competitive market environment and the low profit margins that accompany the supply of energy commodities. In a specific example, utilities have learnt within the Californian market, that there are only small margins to be made in the competitive energy market by simply selling the commodity. Electricity providers are learning that value-added services are the key to increasing revenue, Hanson (4). There are two available techniques with which to add value to a service supply contract. The first is through the provision of a psychological benefit to the consumer. Such benefits could be achieved through proactive marketing and offer the potential to improve and strengthen a positive brand image. This has subsequent advantages for energy efficiency programmes and load management effectiveness, Prindle and Wiser (8). The second method exists because of an enhanced energy supply contract, ‘the energy services package’.

Examples of tangible value-added services include:

- Energy monitoring and targeting,
- Electronic billing,
- Internet-based energy trading; and,
- Process technology innovations.

The benefits offer significant potential in terms of radically developing the energy supply contract. Monitoring and targeting has obvious links to utilisation audits and load profiling. This can be advantageous for supply companies as load management systems and technologies provide information with which to prove economic value to the customer (4). The economic drivers exist in addition to legislative and environmental factors to allow load profile analysis for industrial consumer benefit. Energy services for industry can therefore be characterised by three principal elements, tariff levels, energy utilisation and optimisation and economic value. Figure 8 describes the future development of the energy supply contract, incorporating the main elements of product differentiation and tangibility. Value-added services offer the potential for greater customer retention, particularly in industrial and commercial sectors. This enables differentiation from competition, through value-added services allowing the service provider to efficiently surpass customer expectations, significantly reduce costs and enhance the dependence between customer and energy supplier, Collinge (1).

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Figure 8-An example of a comprehensive energy package incorporating key differentiators.
Brand Identity for Energy Suppliers

Brand identity is an important consideration for energy suppliers, particularly in terms of the value-added supply contract. The maxim for industrial and commercial customers will revolve around ‘what can the energy supplier do for our organisation?’ Effectively packaged information, such as load consumption data, will be a primary driver in determining the most appropriate services to offer end-users. Value-added contracts must therefore be tailored according to what can be achieved through energy services. In a competitive energy services environment, marketability of energy policy and energy efficiency will have a significant effect on the success of the value-added supply contract.

Supply-Side Management Opportunities

The changing structure of the energy industry has meant that load management programmes have lost their identity. This forms another scenario where product differentiation can help secure customers. It is essential that supply businesses accept the need to find and possibly fund customer load management programmes. Traditionally, Supply-Side Management (SSM) has referred to load utilisation on the generation side of the industry. However the separation of the distribution and supply sides of the business in the UK, a trend of worldwide significance, offers the potential for load management opportunities to be implemented through the supply side.

As part of energy services, load consumption can readily be monitored. Accurate load profiles are useful to both energy consumers and suppliers when negotiating power purchase agreements. The industrial consumption data can then provide a sound basis from which to formulate and implement load management programmes. Improved customer relationships will also form an important factor with regard to the nature and participation rates of the programme.

CONCLUSIONS

The development of a mature competitive supply market indicates the potential for enhanced energy packages. This paper has proffered a solution through the utilisation of value-added contracts, employing energy services as the primary differential. The potential solution acknowledges the requirement for customers to be regularly reminded or updated with regard to what is being received as a product. The strategic implications for marketing could provide a new dimension to the supply of energy. By providing tangible benefits through the form of energy services, energy suppliers present a more complete energy package to the consumer. This may provide greater incentive for the industrial customer as new legislation and regulatory measures emerge.

Regulatory initiatives have a direct effect upon the energy value of a supply contract. If mechanisms are in place such that emerging technologies are highlighted with regard to potential energy efficiency initiatives then there is great potential for new energy supply options for both industrial and commercial customers.

REFERENCES