THE DEVELOPMENT OF A EUROPEAN MARKET FOR THIRD PARTY FINANCE

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INTRODUCTION

All available studies show that investment in energy efficiency within the European Community is not occurring at the optimum rate. The reasons for this are well documented and much discussed - barriers in the marketplace are preventing an adequate take up of energy efficiency opportunities.

Among these barriers are the lack of finance, or, as common, unwillingness to spend available finance on energy efficiency improvements, and a common barrier throughout Europe, a lack of credibility in energy saving technologies. The overcoming of these barriers may be assisted by the use of energy performance contracting, yet such an activity is at a very early stage of development in Europe.

In 1985 research was undertaken in the twelve countries of the EEC into the potential market for 'third party finance' (as defined below). This research was instigated from the starting observation that the level of investment in energy efficiency equipment installed through the mechanism of performance contracting is considerably greater in North America than in Europe. This observation begged several questions, which the research set out, at least in part, to answer.

- Is there a market for third party finance in Europe and how big is that market?
- Why has the concept not developed as fast (or indeed hardly at all) in Europe as in North America?
- What are the barriers preventing the growth of third party finance?
- What actions can be taken (if any) to overcome these barriers?

Research results presented in this paper are the summary of well over one hundred personal interviews with relevant organisations and individuals throughout the twelve countries of the EEC. These interviews all took place between March and October 1985.

DEFINITIONS

For the purpose of this study 'third party financing' was defined as:-

"The provision of the services auditing, installation operations, maintenance and financing on a turnkey basis, with the cost of these services being contingent, either wholly or part, on the level of energy saving."

The current North American terminology of "performance contracting" can be used interchangably with the activity known in Europe as "third party financing."

DEMAND FOR THIRD PARTY FINANCE

The "cost effective" potential for energy saving in the European Community has been quoted as being 25% of present consumption, across all energy using sectors, by the year 2000 (Ref 1).

However, the level of investment needed to bring about such savings is not a figure that has been predicted with any degree of accuracy. Nevertheless, using already published data, an attempt was made to estimate the potential level of investment in energy efficiency in Europe, but it should be stressed that the numbers quoted below should be treated as orders of magnitude rather than 'exact' figures.

Potential in the Building Sector

According to the European Commission study 'Towards a European Policy for the Rational Use of Energy in the Building Sector' (Ref 2), the average investment cost per tonne of oil equivalent (TOE) saved each year for existing buildings is $1,250 for investments with an average simple payback of 3 years or less.

The same study estimated that 12% of the European Community's present energy consumption in the building sector (residential, commercial, industrial and public sector buildings) could be saved by investments with paybacks of 3 years or less.

Using such estimates as the basis for an estimate of the total potential investment in the building sector, based on the total final consumption in the European building sector of 270 million TOE (1984 being the most recent figures available), a 12% energy saving would equate to an investment need of some $40 billion.

Potential in the Industrial Sector

The potential for energy saving in the industrial sector has been estimated in a number of European countries, but estimates vary greatly according to the existing energy efficiency of the capital stock, and the methodology used for the estimate. The Netherlands has a target of 30% energy savings by the year 2000, a figure which was recently confirmed as economically feasible by a Dutch Government advisory committee.

Alternatively, a 1982 survey of the UK industry (Ref 3) concluded that the potential for energy saving investments with a payback of under 3 years was 14%. This figure is judged to be more realistic, on a European wide basis, and thus as a basis of estimating the market potential for energy saving investment through third party finance (i.e. average paybacks no longer than 3 years), savings potential of 15% is assumed.

The French Energy Management Agency (Agence Francaise pour la Maitrise de l'Energie) calculated in 1985 (Ref 4) that in the industrial sector an investment of 1050 ECUs will be required to save 1 TOE, assuming that the investment has a payback of 2-3 years (the payback range necessary for third party finance).

Conservation industry sources interviewed have confirmed the validity of this figure, and it is thus used to estimate the market potential for energy saving in the industrial sector.

Using the 1984 (latest figures available) Total Final Consumption in the industrial sector of the 12 European Countries of 279 million TOE as a basis for a market estimate, the 15% potential for energy saving would, using the $1000 per TOE saved formula, equate to an investment of $42 billion.

Total Market Potential

Since transport was excluded from this study, the total potential market for third party finance - being the total potential investment in energy saving projects (with a payback of 3 years or less) is the sum of the two sectors previously quoted - buildings and industrial - being a total potential market of $82 billion across the 12 countries of the European Economic Community.

Potential by Country

The aggregate market potential figures quoted above mask a wide variation between different countries.

Industrial Market:

The industrial market for third party finance is most immediately promising in France, Italy, Spain and the United Kingdom. These countries all have relatively energy inefficient industrial sectors, where the concept of third party financing could make a substantial impact on the level of investment in energy saving in the short term.

Among other EEC countries Denmark, Germany, and to a lesser extent, the Netherlands, have a relatively limited potential for third party finance in industry because of the substantial progress achieved in energy saving since the first oil crisis. In these countries most short payback investments have already been made.

There are particular problems restraining the ability of performance contracting to penetrate the industrial market in several countries - notably Belgium and Portugal.

In Belgium, the national government offers an incentive of a tax deduction of up to 20% of the value of an energy saving investment. This tax deduction is open to all industrial and commercial energy users. Under present rules this deduction can be claimed only if the investment is funded by the industrialist. If an energy saving investment is funded by an outside energy service company, then neither the energy service company nor the industrialist may claim the credit, thus putting third party financing at a significant disadvantage.

In Portugal very high interest rates (currently 30%) and a general shortage of capital are barriers not only to performance contracting, but to investment in industry generally.

Residential Market:

The residential market in Europe, in common with North America, offers considerably less scope for third party financing than other sectors because of the large number of relatively small investments involved and the major role played by occupancy levels and lifestyles in determining domestic energy use.

Third party finance can approach viability only in multi-family dwellings where a central boiler plant is present. In single family dwellings or in multi-family dwellings where individual heaters are used it was judged that the concept was unlikely to be viable in the near future.

Multi-family dwellings likely to be a market for performance contracting are found on a significant scale in Italy, Spain and to a lesser extent France. In other countries multi-family housing forms a much smaller part of the housing stock - in the UK for example multi-family housing with central boiler plant accounts for less than 5% of the housing stock.

In Spain the mild climate and resultant short heating season together with the lack of cooling, imply low annual energy use for space conditioning, resulting in relatively long paybacks for energy saving investments. This problem, when allied to other difficulties of no tradition of multi-year contracts and the legal ability of a single tenant to block any capital investment, mean that performance contracting is unlikely to make rapid inroads into this sector in Spain.

In Italy the problems of the short heating season and long paybacks, a problem exacerbated by the highest percentage of oil fired space heating in Europe, imply little immediate market for third party finance. Paybacks of 6 and 7 years are commonplace, and it was judged that such paybacks are uneconomic for the use of performance contracting.

Institutional and Public Sector Market:

A substantial market exists for third party finance in institutional and public sector buildings in many European Countries, where restricted capital spending and lack of technical expertise are commonplace problems. Unfortunately significant problems are likely to delay the introduction of third party finance into one of its most promising sectors.

In theory a large potential market also exists in the public sector building stock of the UK, France, and to a lesser extent, Germany, Italy and Spain. Of these countries Spain is the only one that has taken any steps to introduce performance contracting in the public sector, and alone appears willing to show the necessary flexibility to successfully negotiate a performance contract.

In contrast, in the UK and Germany, and to a lesser extent in other countries, public procurement rules do not accommodate the performance element of a third party financed investment, and certainly in Germany, Denmark and Ireland, public officials responsible indicated no willingness

whatsoever to consider introducing the necessary flexibility to allow performance contracting.

The potential for energy saving in the UK public sector building stock is very considerable - 50% of all the UK's building stock (of all types) lies in the public sector, and savings of 20-25% of current consumption are economically feasible. This sector is seriously capital constrained, and significant opportunities for energy saving are not being addressed both because of the shortage of capital and also because of skill shortages.

However, despite interest in the use of performance contracting by the UK Department of Energy and also by local authorities, there is a significant barrier preventing the use of third party finance in this sector. The UK Treasury has taken the view that such financing constitutes public sector borrowing, and is thus added to the 'Public Sector Borrowing Requirement' - equivalent to the US budget deficit. Because of very strict controls on spending, in order to keep the budget deficit low, public bodies face severe financial penalties - in the form of 'fines' - if spending rises above prescribed limits. Unfortunately the Treasury have ruled that third party finance is counted as public sector spending in the year in which the contract is signed. It is obviously somewhat illogical to treat third party finance as public sector spending but for wider reason of macro-economic policy the ruling persists.

The most immediately promising public sector markets are those of Spain (as previously discussed), Belgium and the Netherlands. These are countries where the public sector is capital and skill constrained, yet has shown, during interview, more interest and willingness in discussing the ability of third party finance to aid investment in the public sector building stock.

In France and Italy, heat service contracts are widespread in this sector, and in this situation the attitude of these companies - with whom energy users have signed long term contracts - is critical. This issue is discussed in more detail later, but briefly the heat service companies have little or no economic motivation to reduce the quantity of heating fuel used, and as such are likely to be a barrier to any penetration of this sector by energy service companies offering performance contracts.

SUPPLIERS OF ENERGY SERVICES

Existing Suppliers

The Study revealed that there are only eight or nine companies operating in Europe whose activities can be defined as 'performance energy contracting'. It should be noted that heat service companies were judged to be outside this definition, for reasons discussed fully below. An examination of these existing energy service companies revealed a number of common characteristics.

(a) No company was formed before 1984, the majority being formed in 1985. This shows the early stage of development of energy services in the Community.

(b) All existing Escos are subsidiaries of parent companies, three of the eight being formed by multinational oil companies. No entrepreneurial Escos have yet been established.

(c) Although most existing Escos claim to cover the public/institutional buildings sector, none has yet completed a contract for a government facility. The contract negotiation time has been so lengthy, and the bureaucratic obstacles so great, that no activity has yet taken place in this sector.

Potential Suppliers

If the European market is inadequately covered at present who could enter this business?

Consulting Engineers:

Twenty one consulting engineering practices throughout Europe were interviewed, and although all of these companies specialise in energy consultancy, less than a quarter were previously aware of the concept of performance contracting. Although expressing interest in the concept, there was near unanimity in the view that European engineers are extremely wary of entering the business of performance contracting because of a number of factors:

(a) Increased Risk:

Consulting engineers are by nature risk averse, and are wary of any way of doing business that increases their financial and technical risk. Only two engineers interviewed indicated that they would consider taking their fee on a performance related basis while all were wary of accepting technical and financial risk of the equipment performing as predicted.

(b) Professional Practice:

In some Member States engineers are prevented by their professional code from involvement in any 'commercial' enterprise. Engineers are wary of any overt involvement with any supplier or other service company - particularly if such involvement jeopardised their reputation with existing clients. Consulting engineers are not culturally accustomed to the concept of payment by results.

Engineers interviewed indicated that the concept was more complex than their traditional 'preferred' means of doing business, and thus less attractive.

(c) Entry Cost:

The legal, administrative and marketing costs of establishing an energy service company are high, estimated to be in the region of $400,000 in the first year. Unless an Esco has parent company backing all early deals will need to be funded by equity alone. Few engineers possess the necessary capital to fund an operation.

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(d) Investment Funds:

In the absence of a loan or guarantee scheme, engineers would have considerable difficulty raising the necessary degree of bank loans to fund investment in energy saving, since they do not have sufficient capital or collateral.

Equipment Manufacturers:

Although many European energy efficiency equipment manufacturers have expressed cautious interest in the concept, few are likely to enter the business for a number of reasons:-

(a) Manufacturers usually possess technical skill only in their own product sector.

(b) Most Manufacturers are unwilling to hold products on the balance sheet until the end of a performance contract. Managements are usually under much pressure to maintain cash flow by keeping stocks on the company's balance sheet to the minimum.

(c) Equipment manufacturers are very wary of upsetting existing business relationships, particularly with consulting engineers, whose influence on the purchase decision can be often crucial.

Heat Service Companies

The provision of heat services, or 'Chauffage', is often quoted in North America as 'European Third Party Financing'. As previously mentioned, heat services have not been included in the definition of third party financing techniques used in this study, because heat services, as operated in Europe, are concerned principally with the provision of heat. Although energy efficiency is an integral part of such operations, it is by no means the raison d'etre of heat service companies. An energy service company however exists to invest in energy efficiency improvements - not only to distribute or provide energy needs.

Heat service companies offer much scope to expand into the energy services area. They have the technical expertise in heating systems management, and, as established companies, are more likely to have access to capital than an entrepreneurial energy service company.

However, as these companies are contracted to supply a set level of heat, their incentive is to ensure that such heat is produced as efficiently as possible - but there is no incentive to see that it is <u>used</u> as efficiently as possible.

One unusually honest French chauffage company interviewed stated that the actual level of investment in energy saving by that and other French chauffage companies had been low, and that the primary source of profit for the company was the provision and distribution of heating oil.

For this reason this company was uninterested in a concept which implies investment in a package of measures to ensure the maximum possible energy savings. This conflict between heat service and energy efficiency is insufficiently appreciated, both in Europe and in the United States.

Utilities:

Utilities are a logical choice to act as energy service companies in Europe because of a number of factors, including access to capital; the close relationship to their existing business; some expertise in end use technologies; presence in the market and direct contact with energy users.

The attitude of the major European utilities, to the notion of performance contracting can be summed up as uniformly negative. Utilities throughout Europe do not regard energy saving as either a demand reducing tool, or as a possible business venture - two of the motivating factors which have caused North American utilities to promote or indeed enter the performance contracting business.

Gas and electricity utilities throughout Europe see their prime function as ensuring adequate supplies of their fuels. Demand management, as either a business venture as indeed a as 'supply' option is not considered within the remit of these "supply" industries.

However, the ability of energy efficiency to promote increased fuel sales through encouraging switching to efficient (and hence lower cost) use, particularly in the industrial sector, was very much a motivating factor to most of the utilities interviewed. The most characteristic sentiment expressed towards energy efficiency was that it is desirable only where it could be used to lower costs and thus maintain or even increase market share and sales, at the expense of other competing fuels.

A number of publicly owned European utilities indicated that they would face significant legal hurdles if they wished to 'diversify' into the energy services business. Most state owned European utilities are given a remit to provide adequate supplies at the lowest cost. No European utilities are currently active in the third party financing business, and with one exception, none are currently planning such a venture.

The one exception is the monopoly British Gas Corporation, soon to be transferred from public to private ownership. It is known that this utility, at the specific urging of the House of Commons all party Energy Select Committee (Ref 5), is actively investigating the establishment of an energy services subsidiary.

AVAILABILITY OF FINANCE

Third party financing is a highly capital intensive industry. Energy service companies have to meet the cost of marketing, administration and detailed energy audits in addition to the funds needed for the actual investment in energy saving equipment. Energy service companies must be well capitalised, and have access to low cost borrowing, to fund such investments.

In the United States small and medium sized Escos have obtained funding from private investors and local banks. In Europe those some sources of finance are not available to small Escos who lack parent company funding. The venture capital market in Europe is considerably less well developed than in the USA, and indeed there are far fewer sources of risk capital for start up ventures in Europe. European financial institutions interviewed were unanimous in their view that, in the absence of any risk reducing government or EEC scheme, or sufficient collateral, they would not make the necessary funds available. Energy saving investments themselves would not be accepted as sufficient security.

Since the degree and cost of borrowing is the single most important factor in determining the Esco's rate of return, European Escos need to have some access to funds, without which small, or even medium sized, potential Escos will simply be unable to enter the market.

RECOMMENDATIONS FOR FUTURE ACTION

Barriers to Entry

The barrier mentioned above - difficulty of raising finance, is only one of a number of barriers preventing potential energy service companies from entering the market. The principal barriers are:-

(a) Risk:

The business and professional culture of Europe is more risk averse than that of the United States. Several interviewees indicated that as they were making satisfactory profits at present, they saw no reason to increase their risk to try to increase their business.

Consulting engineers are risk averse and are disinclined to accept the technical or financial risks for a project that third party financing implies.

(b) Significant Start Up Costs:

Because of the complexity of the contract, contract negotiations can be very lengthy - six months appears to be the absolute minimum feasible and 18-24 months is possible. This lengthy contract negotiation time implies a very high marketing and administrative start up cost for a possible Esco. This start up cost is estimated in Europe at a basic minimum of $400,000 in the first year.

(c) Difficulty of Raising Capital:

In addition to the high start up costs which imply significant equity needs for an energy service company, such a company will need access to low cost borrowing if it can economically fund the level of energy saving investment needed for viability. Companies not backed by the resources of a major parent company foresee considerable difficulty in obtaining these funds without the necessary security.

(d) Uncertain Energy Prices:

The recent dramatic fall in oil, and to a lesser extent natural gas and electricity prices, which has been seen in the United States, has been less pronounced in Europe.

US dollar denominated crude oil prices do not necessarily translate into a proportional fall in delivered local currency fuel oil. Further, falls in oil are not necessarily being matched in Europe by falls in other fuel prices - indeed energy service contracts may still have an expectation or static or even rising gas and electricity costs, usually supplied by a state owned monopoly supplier, which may be the predominant fuel in a performance contract.

Nevertheless, it is undoubtedly the case that the uncertain energy price picture, and the recent falls in the price of oil, have increased the risks for any potential European energy service company. However, in the opinion of those existing European energy service companies the effect of such energy prices will not lead to any dramatic curtailment of their potential market, for the reasons given above.

Possible Actions to Overcome Barriers

These barriers listed above are the cause of the supply problem for third party finance in Europe. A question which should be asked however, is,is the supply of energy services a problem which should be addressed, or should demand be stimulated, which will automatically lead to the growth of energy service companies?

It is certainly the case that knowledge of, and hence demand for, energy services is at a low level, and some of the actions recommended below in this paper are designed to assist in remedying that situation. However, the potential for energy services is ery considerable, and the barriers to market entry so great that there is no certainty that companies will meet a demonstrated market need. Indeed in Spain the Basque Government spent three years trying to persuade potential energy service companies to enter the business in order to participate in several large performance contracting demonstration schemes. This effort was without success.

The potential for third party finance in Europe will not be fulfilled until more suppliers of such services - small, medium and large - are available to meet this need. Therefore a number of actions are suggested which may assist in the development of this market both in the demand for, and supply of energy services.

(a) Education:

Knowledge of the concept of third party finance is very low both among energy users and indeed possible Escos in Europe. Less than a quarter of consulting engineers interviewed (and all of these specialise in energy efficiency) were aware of the concept.

It is certainly beyond the means of the small number of current Escos to educate the market; and without such education growth in the demand for energy services will be slow.

It has therefore been recommended to the European Commission that they organise a series of seminars in European countries, and it is believed that a two-day European performance contracting conference will be held in 1987 under the sponsorship of the EEC.

(b) Public/Institutional Buildings Sector:

In the public/institutional buildings sector there are a number of significant barriers to the use of third party finance, including (i) public procurement processes (ii) very lengthy decision making processes and (iii) lack of motivation to save energy. These barriers must be addressed by European Governments if third party finance is to make any progress in the public sector.

(c) Pilot Projects:

In the United States pilot projects to demonstrate the worth of the third party financing technique have been sponsored by Federal and State Governments. These schemes act not only to demonstrate the validity of the approach to energy users but also can actually encourage potential Escos to enter the market.

It has been recommended that the EEC organise pilot schemes in each sector (multi-family, industrial, commercial and public sector) throughout Europe.

(d) Finance:

Comparing the third party financing industry of the United States and the current supply of energy services in Europe (the starting point for this study), the provision of finance for small and medium sized Escos emerges as one of, if not the, key difference.

The difficulty European Escos face in borrowing to fund energy saving investments without the backing of a large parent company is a major problem in Europe. Several courses of action are possible to help overcome this barrier.

- European Community Loans - European Community loans could be made to small and medium sized energy service companies under an existing EEC loan scheme, known as the New Community Investment, administered through the European Investment Bank. Such loans would both encourage the growth of small enterprises and would assist in the achievement of the Community's energy efficiency goals, two necessary predictions for this loan scheme.

- EEC Loan Guarantees - EEC loan guarantees could assist small and medium sized Escos to achieve the high degree of low cost borrowing necessary. However, the administration of such a scheme by the Commission, on a project by project basis, would be both difficult and expensive.

o Performance Insurance - Energy saving performance insurance policies guarantee a monetary level of energy savings, and hence the return to the investor in a third party financed project. Such an option for assisting the financing of performance contracts differs from the two options above in that it is a private; rather than government option.

However, the disadvantage of performance insurance is its relative scarcity, and its considerable cost. Such insurance policies, if found, would cost between 3% and 5% of the total value of predicted savings throughout the life of the project.

(e) One of the problems affecting both supply and demand for energy services in Europe is the complexity of the transaction, both perceived and real. This factor is discouraging small Escos from entering the market, and deters energy users.

Both reluctant energy users and small potential Escos would be aided by the production of a model contract with accompanying "walk through" guide. Such a contract and guide is now under preparation by the Association for the Conservation of Energy, sponsored by the EEC, to cover the five EEC countries of the UK, France, West Germany, Italy and Spain. It is envisaged that this model contract and guide will be completed by the end of 1986.

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