



White Paper on Climate Change

A sector strategy for energy efficient commercial kitchens

Presented by:

**The Catering for a Sustainable Future Group.
www.csfg.co.uk**

The collective view of manufacturers; design and management consultants; and installers.





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1.0 INTRODUCTION

This document has been developed using input from the respective memberships of the key organisations representing commercial kitchen equipment manufacturers, dealers, installers and design consultants.

Its purpose is to provide a structured and practical programme of policy recommendations for government and authorities as well as including work that can be undertaken by the catering equipment industry as part of its role in seeking to achieve reductions in energy use.

This programme is an essential requirement in enacting government proposals to achieve goals of 26% carbon savings by 2020 and 80% carbon savings by 2050, against a 1990 baseline.

The total energy consumption of Britain's catering industry is estimated to be in excess of 21,600 million kWh per year. Over 30% of the energy is used in purely commercial catering establishments, with another 17% in hotel restaurants and guest houses and more than 50% in non-commercial catering such as schools, hospitals and Ministry of Defence organisations.

With the overall sustainability objectives in mind this paper has been prepared in order to build on existing legislation and initiatives.

2.0 THE KEY STAKEHOLDERS AND THEIR CONTEXT

Catering for a Sustainable Future Group

The Catering for a Sustainable Future Group (CSFG) is a voluntary organisation, formed in March 2006 from professionals within the UK catering equipment industry who are interested in developing ideas and initiatives to promote energy savings and sustainability in commercial kitchens.

The CSFG has been formed as a sub-committee of the Catering Equipment Distributors Association (CEDA) the Catering Equipment Suppliers Association (CESA), and the Foodservice Consultants Society International (FCSI). The CSFG therefore enjoys unparalleled support from the breadth of the UK catering equipment industry.

Commercial kitchens are huge users of energy and much can be done to improve efficiency. The CSFG feels that this initiative should come from within the industry, rather than having it forced upon it at a later date.

Catering Equipment Distributors Association

CEDA represents over 90 companies responsible for the distribution, installation and service of commercial catering equipment. Founded in 1971, CEDA represents national and regional distributors and works in co-operation with CESA and FCSI towards achieving the common aims which are important to the development of the industry.

Catering Equipment Distributors Association

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Catering Equipment Suppliers Association

CESA represents over 130 members involved in the manufacture, supply and service of commercial kitchen equipment. Its membership is responsible for 80% of UK sales in a £1bn industry. Established in 1938, CESA represents UK manufacturers, distributors of products manufactured in the E.U. and importers of equipment.

Its membership spans the range of commercial foodservice equipment from full kitchen schemes to smallwares and utensils. The organisation is the lead body on lobbying, and technical and policy representation in the UK.

Catering Equipment Suppliers' Association

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British Electrotechnical and Allied Manufacturers Association

CESA is member of the British Electrotechnical and Allied Manufacturers Association (BEAMA) consisting of 14 Associations representing some 350 companies in the Electrotechnical and Allied Manufacturing Industries in the UK. It represents an industry with a turnover of £ 13 billion a year and employs over 100,000 people. It is the co-ordinator for the Electrotechnical Industry with UK government and its European counterparts and provides a wide range of services to both members and the industry including Legal, Statistics, Standards, Commercial, Overseas Marketing, Technology, and Environmental. CESA is pleased to have assisted in the development of The BEAMA White Paper on Climate Change which was published on 1st October 2008. CESA supports the initiative of uniting the Electrotechnical industry. This paper has been prepared to provide a sector strategy to complement the BEAMA white paper and CESA will contribute to the consultation and encourage its members to have input into the process. ►

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2.0 THE KEY STAKEHOLDERS AND THEIR CONTEXT *(continued)*

◀ European Federation of Catering Equipment Manufacturers

CESA is the chair of the Technical Board of the European Federation of Catering Equipment Manufacturers (EFCEM) which comprises 9 European national associations representing over 600 companies. The group has undertaken the responsibility for the formulation of European energy performance standards for the key equipment categories of: - open burners, fryers, dishwashing equipment, convection ovens, water boilers (pressure and standard), induction equipment, coffee machines, hot cupboards and combination ovens. EFCEM is a member of Orgalime – the voice of European engineering.

www.efcem.org

Foodservice Consultants Society International

The FCSI is the world's premier association of foodservice consultants. With over 1000 members in 35 countries, the society acts as a vital link to the industry's foremost professionals and specialists in hospitality consulting.

The expertise of our members covers all aspects of the foodservice industry. FCSI members provide innovative,

cost effective and quality solutions based on proven experience.

The FCSI is a totally impartial body whose function is to represent the best in foodservice and hospitality consulting throughout the world.

The FCSI (UK&I) has over 60 professional members representing management and design consultants and is also supported by catering equipment manufacturers, contract caterers and kitchen design houses.



3.0 OVERVIEW

The British Electrotechnical and Allied Manufacturers Association (BEAMA) published its own white paper on climate change in October 2008. CESA is a member of BEAMA and the CSFG has prepared and published this sector specific accompaniment to support the paper. Copies of the BEAMA white paper are available at www.beama.org.uk.

It has been highlighted that there is a need for effective collaboration and work to provide both the policy and technical requirements for the catering equipment industry in order to bring about the development of carbon reduction initiatives.

At a policy level, the stakeholder organisations and their respective companies call for an integrated and structured approach supported by government and NGO's alike to provide an effective framework of policy and regulatory change.

At European level with the required energy and carbon reductions, manufacturers have seen the development of the Eco Design Directive and its subsequent implementing measures. Both this CSFG White Paper and the BEAMA white paper recognise and endorse the existing legislative work in this area and the environmental and sustainability of supply objectives.

With the length of service of commercial catering equipment spanning 5-20 years, it is critical that new energy saving equipment is specified and installed now in order to maximise energy savings. This is essential if the sector is to play its part in achieving the 2020 and 2050 goals. If this is not the case an opportunity will have been lost until that equipment is subsequently replaced.

There is also a requirement for effective purchasing criteria to be identified and put into place in both public and private sectors in order that specifiers and purchasers can make objective and lifetime cost based assessments of the equipment that they wish to purchase. It is a truism of the sector that

buying on price alone will tend to lead towards the purchase of less energy efficient equipment.

A key feature of the sector is the fragmentation of the operators who buy equipment, the dealer network that supplies the equipment and the manufacturers of the equipment.

For these reasons there are not the economies of scale associated with many electrical appliances and therefore the payback for product development can be over a longer period. Manufacturers are supportive of the need to develop energy efficient equipment and already partner with key operators in both public and private sectors to produce equipment that achieves its primary function and reduces utilities costs.

CESA through its membership of the European Federation of Catering Equipment Manufacturers (EFCEM) plays a leading role in its Technical Board as the chairman and EFCEM has established an Energy Efficiency Standards Committee which is currently preparing and publishing energy standards for the key equipment categories.

Most of the guidance regarding equipment has revolved around generic guides to assist in the effective procurement of equipment and the optimum use by operators. However, this tends to be on a piecemeal approach.

The Carbon Trust has produced CTV035 – “Food preparation and catering sector guide” – and the CFSG has produced its own Chartered Institute of Building Services Engineers (CIBSE) guide to energy efficient design of commercial kitchens. The key issue remains that there is a need to integrate the work and to translate the content into effective specification and use of commercial kitchen equipment. Industry cannot do this on its own. It will need collaborative work by government to really make this work effective.

This paper calls on government to lead the integration of this work and outlines the key requirements for an effective and achievable policy for the sector.

4.0 MANUFACTURERS – SUPPORT FOR THE DEVELOPMENT OF ENERGY EFFICIENT SOLUTIONS

Research and Development Support

Manufacturers have already responded to the call by developing energy efficient products that increase efficiency and reduce electricity, gas and water use.

This has been achieved through significant investment in product development over many years. There are components in commercial kitchen equipment which are generic and sourced on the component market. As a result manufacturers can only indirectly influence product innovation in this element of the supply chain.

Manufacturers are united in calling for component manufacturers to recognise the need for the supply chain to improve the efficiency of their products. Some of these items are expected to be covered by Eco-design Directive implementing measures.

Research and development funding and support from government has an essential role to play in enabling manufacturers to continue to develop energy efficient finished products.

Government should initiate dialogue with the sector to secure product innovation as a part of a planned approach to closed contract product development work – the sector would welcome such opportunities.

Skills Development

In order for manufacturers to continue to invest there is a need for industry to have access to a well trained and effective workforce of designers and electrical and mechanical engineers. It is essential that the key elements of the BERR Manufacturing Strategy are put into place and communicated effectively. This will create a profile for the manufacturing sector that it is an attractive and rewarding place to work for young people as well as being open to a workforce with transferable skills.

Equipment Performance

Manufacturers need to be able to develop their products without compromising the performance of the equipment for operators. The need for commercial kitchens to be able to prepare large volumes of food to a required timescale means that high energy use must be expected to ensure that food is prepared, cooked and stored in accordance with Food Standards Agency and HACCP guidelines. Any compromise here will also compromise the safety of food for the public.

5.0 PURCHASING AND SPECIFICATION – BEST PRACTICE

Given that manufacturers are already producing energy efficient equipment and also that more equipment of this type will follow, it is critical that the specification and purchasing process is fully utilising this equipment.

There are varying degrees of knowledge and skills relating to the specification and design of commercial kitchens. These range from the professional expert who may be employed in a business or operation to provide specific skills and knowledge in kitchen design; to the procurement manager who is experienced in purchasing procedures and processes but who, because of the number of diverse products being handled, is unable to gain an in-depth knowledge and understanding of the products being purchased. There is also the independent purchaser who needs to be able to quickly and effectively find information against which he can easily compare the performance and the efficiency of products.

Advice and in the form of objective information and data on equipment is an essential requirement in the specification process.

The Energy Technology List is an existing and publicly available list of equipment – currently only commercial refrigeration equipment is published on this list. The CSFG seeks the inclusion of additional commercial kitchen equipment product categories following the establishment of effective test methodologies – this work is ongoing though EFCEM via the publication of the EFCEM Energy Performance Test Standards.

We call for the adoption of these methodologies and for the

establishment of a criterion for qualifying products to be added to the Energy or Water Technology lists.

Public Procurement

The Office of Government Commerce (OGC) has a key role to play in interacting with the CSFG group to establish energy performance criteria for the purchase of commercial foodservice equipment.

Whilst OGC is expert in the process of procurement, initial meetings have indicated that the system would benefit from the use of objective energy standards against which equipment can be evaluated. The EFCEM Energy Performance Standards should be adopted as the test methodology for this evaluation and for the setting of performance baselines.

In addition to the use of standards, the group is keen to engage with OGC at policy level to ensure effective purchasing of equipment across all of the key public bodies such as healthcare, education, prisons and welfare catering.

It is recognised that a ‘food system’ approach is needed in procurement and that an evaluation of the most efficient system for preparing food may require the use of what appears to be high energy using equipment due to the specific volume and time requirements.

In many cases “end of life” equipment is simply replaced when it would be beneficial to understand the type and quantity of food being prepared by the equipment. This evaluation may ►

5.0 PURCHASING AND SPECIFICATION – BEST PRACTICE (continued)

- ◀ result in the specification and supply of equipment which is more suited to the task and which is also more energy efficient.

The industry is seeking support to impact at all levels of purchasing in order to make for more effective processes. This would be through the provision of information and education as required by personnel at each level of influence.

Typically these are:-

- The specification of new kitchens.
- The replacement of end of life equipment.
- Operator training in the efficient use of equipment

Uniting the procurement process with operator training will have significant energy and CO₂ savings across the breadth of the public sector.

Influence at the point of purchase

In anticipation of more categories of product appearing on the Enhanced Capital Allowance List, this will provide an independent and authoritative source of products which are recognised as being energy efficient. This will lead to the specification and use of more energy efficient equipment which will assist in the achievement of the short and long term energy saving goals.

The current ECA list is not representative of the breadth of equipment used in kitchens. More product categories need to be added to the Energy Technology list as currently only commercial refrigeration is included from this sector's range of equipment.

However, there are limits to the value of the ECA scheme as it currently stands. In group operated business the ECA scheme may not recognise the structure of group purchasing where:

- 1 The buyer will be tasked and often incentivised to buy equipment at the lowest possible cost. This often leads to the purchase of less efficient equipment with a lower capital cost.
- 2 The utility manager will be tasked with reducing the overall energy bills but may not have management responsibility for purchasing processes.
- 3 The management accountant (often in a different location or office) who will be responsible for reclaiming and reporting the enhanced capital allowance to the company.

Clearly in this structure there is a lack of communication between key personnel and as a result a reduction in the value of the allowance.

For this reason there is a need to bring the benefit closer to the point of purchase. We propose that the allowance should be a 'double VAT' discount at the point of purchase for equipment which exceeds a set minimum efficiency level.

6.0 INSTALLATION OF ENERGY EFFICIENT EQUIPMENT

Installing and operating a kitchen which comprises the most energy efficient individual items of equipment does not necessarily mean that the equipment will provide the most efficient kitchen. A commercial kitchen is a system and a degree of training and development will be required for installers to be able to advise caterers on the most energy efficient solutions.

For an operative to work on gas equipment it is a legal requirement that he is trained and register with Gas Safe Register. We recommend the incorporation of energy efficiency training as a module as part of the ACS accreditation for the COMCAT evaluations. Given that there is a 5 year re-assessment for operatives this can be a quick and effective means of improving the skills of this workforce.

Where electrical equipment is concerned there is no legal requirement to register and it will be necessary to provide a voluntary programme of training through their business managers pending any formal skills evaluation requirement.

A central resource of information must also be provided in easily accessible practical information “on demand”.

The service managers and service providers groups of CEDA and CESA are well placed to provide this communication and

information service. This should be in the form of podcasts and downloadable supporting information. Through the Catering Engineers Standards and Registration Board (CESRB) industry is already working towards the establishment of a training criteria for electrical engineers in line with industry requirements.



7.0 USERS – EFFICIENT AND RESPONSIBLE USE OF EQUIPMENT

It is clear that the operator of commercial kitchens has an equal responsibility to that of the equipment manufacturer in ensuring that the equipment that he is responsible for is operated in a manner that is not wasteful as far as energy, water and labour are concerned.

This will in many cases require the establishment of clear and effective training for staff. This must take into consideration that English may not be the first language of many staff and that there may also be learning difficulties.

It is estimated that up to 30% of kitchen utilities are wasted in the operation of a commercial kitchen. This only includes wastage within the kitchen and does not include transmission losses through the power network. Staff training on sustainability matters should be given a similar profile to that of kitchen hygiene.

Government and the authorities must engage with operators and their representative bodies to ensure the effective training of staff in the key issues of efficient energy use.

An energy efficient kitchen will soon lose this advantage if the equipment is not operated in accordance with manufacturers' instructions for warm up times or optimum loading capacities.

There is already specific activity in this area of training and the industry calls for a central authoritative training, development and management solution for caterers in all areas of the foodservice industry.

Operators should also be incentivised to monitor their kitchen energy use through incentives to sub metering of equipment.

8.0 SITE ENERGY MONITORING, REPORTING AND MANAGEMENT

All areas of the industry have highlighted the fact that there is very little empirical data on which the energy usage of commercial kitchen equipment can be evaluated.

Industry calls for a detailed dialogue on building segment differences for catering equipment and how they best fit into building regulations.

This, in part, relates to the industry fragmentation issues outlined earlier and also to the fact that the commercial kitchen may not be the primary user of energy as part of an overall building.

Space, heating and lighting will tend to be the primary users and receive much of the focus regarding energy use. Kitchens

tend to be planned into buildings late in the process and this may only be after a client has been secured. It may not always be possible to identify primary sources of utilities supplies to a kitchen as these are embedded in the fabric of the building. In this case retrofitting of monitoring devices becomes impracticable.

Sub metering of individual items of equipment has become easier and costs have reduced. However, it is difficult to encourage operators to undertake these measures and share data as this may be commercially sensitive if it reveals sales volumes.

The recommended approach is for an independent research study to be undertaken which is representative of the sector as

a whole and which will provide typical energy use figures for each key operating sector of the industry i.e. fine dining, mid spend restaurants, fast food, hotels, pubs, healthcare, business and industry, education, public services. A representative sample from each sector should be used.

What is needed is an authoritative and statistically robust programme of evaluation to identify the two key energy impacts in commercial kitchens:

1. The efficiency of equipment in relation to its food output.
2. The operator influenced efficiencies of the equipment's use.

This work will provide data that can be used objectively to:-

- Identify energy savings that can be made through better operator working practice.
- Identify the equipment that may be replaced and the pay-back time of the replacement equipment.
- Provide ongoing management of the utilities costs and awareness of the benefits gained.

This data will enable caterers to identify a baseline of CO₂ and kWh per plated meal enabling them to compare this with industry recommendations and best practice.

A process of collecting and then sharing this data will enable the industry to improve its efficiency. Over time poor practice and poorly performing equipment will be eliminated.

This data will also enable manufacturers to identify further opportunities for the development of efficiencies in their equipment design.

9.0 SUMMARY

The approach outlined in this white paper seeks to provide an effective and practical plan of work. It is supported by the leading organisations in the catering equipment sector and in turn has the support of the companies and professionals that are represented by these organisations.

The CSFG supports the published plans for a low carbon economy and wishes to play an active part in the achievement of these goals. The plans outlined in this document are designed to be implemented in conjunction with the BEAMA White Paper which covers issues relating to the opportunity to reduce losses throughout the power generation and transmission networks.

Integration of the work outlined here, together with work throughout the energy transmission network, will provide a gearing effect that will significantly add to the carbon savings that can be made.



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