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Food Industry Sustainability Strategy








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Secretary of State's Foreword

Evidence of the adverse impact of human activity upon the planet is growing by the day and most visibly through climate change, the consequences of which are proving devastating. The warning signs should not be ignored. We have to behave sustainably now, to safeguard the future.

The UK's sustainability goal, published in *'Securing the future'* in March 2005, is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations. Achieving this goal is possible through concerted efforts, in particular partnership working between Government, business and other stakeholders.

'Facing the Future', the Government's Strategy for Sustainable Farming and Food, set out the way ahead for the farming sector – and good progress is being made in its implementation. The Food Industry Sustainability Strategy builds on this and sets out the key priority areas for action beyond the farmgate. It adds value by ensuring that all parts of the food chain are now encouraged to improve their sustainability and adopt best practice under an industry-wide framework. This is particularly important given the significant environmental and social impacts for which the sectors concerned – food manufacturing, retailing, wholesale and food service – are responsible.

The challenge for captains of the food and drink industry and others throughout the sector is to continue to achieve economic success whilst improving environmental and social performance. Widespread adoption of best practice is central to meeting this challenge. The Food Industry Sustainability Strategy therefore envisages much closer working between industry and Government best practice programmes. The provision of additional funding to Envirowise, the Carbon Trust and Waste Resources Action Programme allows room for an expected increase in industry demand for the free consultancy and advice services that each provides. Success, nonetheless, hinges upon industry uptake of those services and, indeed, wider engagement in the Strategy's aims and objectives.

A key area of further work will be the assessment by stakeholders and Government best practice experts of the feasibility of certain targets set out in the Strategy, the measures necessary for making progress and the means of monitoring success. I am, therefore, establishing a number of industry-led Champion's Groups to carry out these and to report to me during the course of 2006 or early in 2007. A Programme Board, to include trade representatives and other stakeholders, will oversee implementation of the Strategy.

I am looking to captains of the food and drink industry for their full support for the Strategy, with all major food and drink companies making a full contribution. Taking action now will save on what is demanded of us tomorrow, over which we may have less control and for which our children and grandchildren will hold us responsible. Let us live today with an eye on needs for tomorrow. That, after all, is the very heart of sustainability – and all of us should play a full part in its achievement.

Margaret Beckett

Rt. Hon Margaret Beckett MP

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Food Industry Sustainability Strategy: Executive Summary

Chapter 1: Introduction

1. The Government's new vision for sustainable development is set out in the Sustainable Development Strategy *'Securing the future'* launched by the Prime Minister in March 2005. It says that:

   'the goal of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations.'

2. This will be achieved through *'a sustainable, innovative and productive economy that delivers high levels of employment; and a just society that promotes social inclusion, sustainable communities and personal wellbeing. This will be done in ways that protect and enhance the physical and natural environment, and use resources and energy as efficiently as possible'*.

3. This agenda must be pursued urgently, as the planet is not capable of sustaining current levels of production and consumption in developed countries and replicating them worldwide.

4. This Food Industry Sustainability Strategy (FISS), drawn up with the aid of Stakeholders, sets out how all those involved in the food and drink industry beyond the farm gate (manufacturers, wholesalers, retailers and food service providers) in this country can, through widespread adoption of best practice, help achieve sustainable development. The food industry is well placed to contribute as it accounts for:
   - about 14% of **energy** consumption by UK businesses and 7 million tonnes of carbon emissions per year;
   - about 10% of all industrial use of the public **water** supply;
   - about 10% of the industrial and commercial **waste** stream;
   - 25% of all HGV **vehicle kilometres** in the UK;
   - the provision of **food choices** and information that will assist consumers to adopt more healthy and balanced diets;
   - 12.5% of the UK **workforce**.

5. The FISS is not intended to be comprehensive or definitive. Rather, it seeks to tackle a manageable number of priority areas as identified by the FISS Stakeholder Group and confirmed by public consultation. The FISS includes **targets** for making progress in key areas, and a wide range of **Key Performance Indicators** to measure industry progress across a broader range of activities based upon existing data sources.

Chapter 2: Sustainable Consumption and Production

6. The FISS embraces Sustainable Consumption and Production (SCP). The central challenge of SCP is to break the link between economic growth and environmental impacts in recognition of the absolute limits to the Earth's capacity to absorb pollution and provide natural resources. Achieving this requires a major shift towards delivering new products and services with lower environmental impacts across their lifecycle. In practical terms, this means 'getting more from less' through better products and services; cleaner, more efficient production processes; and shifts in consumption towards goods and services with lower impacts. The environmental actions committed to in the FISS will contribute towards progress. The FISS encourages industry to engage with benchmarking programmes and commits Government to investigating the **lifecycle impacts** of the contents of an average food shopping trolley. Government is also establishing the **Environment Direct** service. This will give clear independent advice to consumers on the impacts of choices they face and seek to improve understanding of the social and cultural influences that shape consumer choices in order to narrow the gap between consumer awareness and actual behaviour.

Chapter 3: Corporate Social Responsibility

7. Corporate Social Responsibility (CSR) is essentially the business contribution to sustainable development i.e. what companies do voluntarily over and above the legal minimum requirements for social and environmental performance. The FISS challenges the food industry to devise a set of **CSR criteria** which will reflect the contribution that it is placed to make and ways of measuring progress, and to report to Ministers on this by winter 2006.

Chapter 4: Primarily Environmental

8. For the priority of tackling energy use and **carbon emissions**, the FISS builds upon an existing range of incentives. These include the UK-wide Climate Change Programme, including the Climate Change Levy and Climate Change Agreements and the UK and EU Emissions Trading Schemes. Rising energy prices are also another incentive, the most recent increases being directly linked to extreme weather conditions, most probably themselves a consequence of climate change. The FISS encourages industry to adopt widely energy best practice with help and assistance from the Carbon Trust. Increased funding has been provided to the Trust. In particular, the FISS challenges industry to reduce its carbon emissions by 20% by 2010 against a 1990 baseline and commits Government and industry to a process of discussion, to report by winter 2006, on the feasibility of reaching this target, the evidence base and the measures needed to achieve the target.

9. In the case of the **waste** priority, much progress has been made by industry under existing incentives under the waste regime, including the landfill tax, statutory targets for packaging waste recovery and recycling, and requirements on packaging minimisation and the Integrated Pollution and Prevention Control regime. The FISS acknowledges this and seeks to improve on it by increasing current levels of food industry engagement with the Government best practices programmes, i.e. Envirowise and the Waste Resources Action Programme (WRAP). Increased funding has been provided to both bodies to meet an expected increase in

industry demand. The FISS encourages the food industry to contribute to sustainable waste management by continuing to play a full part in the domestic packaging regime and to make constructive contributions to work on consumer information and behaviour, supermarket recycling, and product and packaging design. It challenges the food manufacturing industry to reduce its own waste by 15-20% by 2010. It commits Government and industry to a process of discussion, to report by early 2007, on the most effective way to carry through these objectives, including the establishment of better base data.

10. The FISS encourages the food industry to reduce its current levels of demand for **water** at all stages of the supply chain by improving efficiency through the adoption of best practice without compromising food hygiene. Envirowise will help industry through the provision of free consultancy advice. The FISS challenges the food industry to reduce its water use by 10-15% by 2020, and by 20-25% in the South East, in response to growing pressures on water supplies. It commits Government and industry to a discussion, to report by spring 2007, on the feasibility of these targets and the means of achieving them.

11. The external costs of UK **food transportation**, environmental, social and economic, are estimated by Defra commissioned research to be just over £9 billion per year. The FISS encourages the food industry to continue to improve its vehicle fleet utilisation and efficiency, as measured by the Department for Transport's benchmarking surveys on food distribution. This includes regular surveys which assess performance against vehicle fill, empty running, time utilisation, deviations from schedule and fuel consumption benchmarks. Building on the logistical improvements of the last decade, a process will be set up with industry to consider the practical implications associated with it securing significant reductions (say, 20% by 2012) in the level of external costs associated with the domestic transportation of food. To report back to Ministers by winter 2006.

Chapter 5: Primarily Social

12. The FISS reflects Government policy objectives on **nutrition and health** as set out in the Public Health White Paper. It encourages the food industry to work in partnership with Government and other stakeholders to help bring about lasting improvements to the nation's nutrition and health. It reiterates the challenges set out in the White Paper, stressing the contribution expected of the food industry to help achieve Government policy objectives to increase average consumption of fruit and vegetables to at least 5 portions a day; increase the average intake of dietary fibre to 18 grams per day; reduce average salt intake to 6 grams per day; reduce average intake of saturated fat to 11% of food energy; maintain the current trends in reducing average intake of total fat to 35% of food energy; and reduce the average intake of added sugar to 11% of food energy.

13. The FISS recognises that maintaining and enhancing public trust and confidence in the **safety of the food** supply is the chief priority under any food strategy for industry and the Government. It challenges industry to play a full part in the achievement of the Food Standard Agency's target of securing a 20% reduction in the incidence of foodborne illness by 2006. The Agency is committed to continuing to support this objective with a significant research programme.

14. The FISS encourages widespread adoption of **equal opportunities** best practice which is crucial if the industry is to attract and retain a good quality and experienced workforce in the light of changing demographics. The FISS challenges the food industry to halve the rate of any under-representation of women and ethnic minorities in skilled and administrative and managerial grades in the sector, relative to their presence in the Labour Force Survey, by 2010.

15. The FISS also challenges the food industry to further improve its record on **health and safety**, building on recent successes. In line with the Health and Safety Commission Strategy launched in 2000, it encourages industry to cut all deaths and serious injuries per thousand workers in the sector by 10% by 2010. The Health and Safety Executive's *'Recipe for Safety'* and *'Revitalising Health and Safety'* campaigns are central to this target's achievement.

16. With regards to **ethical trading** the challenge identified in the FISS is the need to develop further the business case of ethical trade, demonstrate the benefits for both suppliers and retailers, address the potential for confusion and duplication of effort created by the proliferation of different schemes, improve the quality and effectiveness of auditing, enable development beyond simple code compliance to address the disconnection between implementation of ethical codes and other business processes, which can mean that business' purchasing practice may undermine its ethical approach, and ensure that ethical trade initiatives are not just conditions imposed from outside but that workers and local stakeholders play a bigger role in shaping best practice. This will be taken forward by an Ethical Trading Forum, comprising government and stakeholders, to report by spring 2007.

Chapter 6: Primarily Economic

17. The FISS aims to ensure that **science-based innovation** is underpinned by appropriate levels of funding; that strong networks exist between industry and the science base to engender collaborative working; and that sound mechanisms are in place for widespread dissemination of innovation and best practice. Under it, Defra is committed to increasing its funding for its science and innovation schemes by a third (to £3.7m/ year). Such schemes include the LINK scheme, which is aimed at collaboration between industry and the research base, and Knowledge Transfer Partnerships, Faraday Partnerships and Regional Technology Transfer Centres. The FISS challenges industry to work proactively with Government on collaborative R&D focused on overcoming technical barriers to meeting sustainability goals.

18. A further FISS priority is to ensure that the food industry is promoted as an employer of choice and for any shortfall in **skills** demanded by industry placements to be identified and met through training provision. This includes ensuring that Learning and Skills Councils (LSC's) work with Sector Skills Councils (SSCs) to ensure that the final network of 400 Centres of Vocational Excellence (CoVEs) is the best fit – in terms of meeting employers' skills needs by sector and location. In particular, it encourages food retailers and manufacturers to work to reduce by 40% the number of adult workers who lack qualifications at NVQ level 2 and above by 2010 against a 2003 baseline.

19. The FISS also recognises the adverse impacts of **retail crime** upon the food industry. To build upon the existing policies and projects aimed at engendering best practice in the industry, it challenges the industry to play a full part in creating and maintaining business crime reduction partnerships. It also encourages industry participation in accredited schemes such as the Safer Business Award.

Chapter 7: Better Regulation

20. The FISS embraces the Government's commitment to deliver **better regulation** of the food industry, which means regulating only where necessary, doing so in a light touch way that is proportionate to risk and deregulating or simplifying existing regulations whenever possible. The Government commits under the strategy to introducing a Food Industry Better Regulation Group. This will serve as a high level forum through which industry and Government can add value to the policy and legislative processes in operation in the UK, EU and internationally. It will act as an early warning mechanism for stakeholders and, amongst other things, help to ensure proportional and appropriate implementation of policy and regulation.

Chapter One: Introduction

1.1 Purpose

1.1.1 Food is an essential of life. We need to eat. We enjoy eating. Yet how many of us stop to wonder about the way it was grown, or processed, or transported? How many working in the catering industry, or in retail, or a food factory, stop to think about how our decisions might be affecting the environment or standards of living of people involved elsewhere in the food chain?

1.1.2 This document has been drawn up with Stakeholders and sets out a strategy for how all those involved in the food industry[1] beyond the farm gate (manufacturers, wholesalers, retailers and food service providers) in this country can, through widespread adoption of best practice, help achieve sustainable development – in other words how to ensure that improved economic performance is not at the expense of the exploitation of people or the environment and that they do not disadvantage future generations. It also covers the role that Government and industry can play to better inform sustainable consumer choices and influence current patterns of consumption.

1.1.3 Sustainable development is a Government-wide policy, embracing all sectors of UK industry ranging from heavy industry to food manufacturing and retail, and civil society at every level.

1.1.4 The Government's 1999 sustainable development strategy '*A Better Quality of Life*' set out clearly that sustainable development means "a better quality for everyone, now and for generations to come", and adopted the widely used international definition "development which meets the needs of the present without compromising the ability of future generations to meet their own needs[2]".

1.1.5 The four aims of the 1999 strategy were:

- Social progress, which recognises the needs of everyone;
- Effective protection of the environment;
- Prudent use of natural resources; and
- Maintenance of high and stable levels of economic growth and employment.

1.1.6 These aims effectively captured the simple priority areas at the heart of sustainable development. However, although the 1999 strategy stressed that these objectives had to be pursued at the same time, in practice, different agencies focused on those one or two most relevant to them. So the Government's 2005 sustainable development strategy '*Securing the future*' sets out a new 'purpose', which shows how these aims should be integrated.

1 In this document, unless otherwise stated, the term 'food industry' means ' the food and drink industry beyond the farm gate'

2 From 'Our Common Future' Report of the 1987 World Commission on Environment and Development (ISBN-10: 0-19-282080-X)

1.1.7 The purpose, or framework goal, of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations.

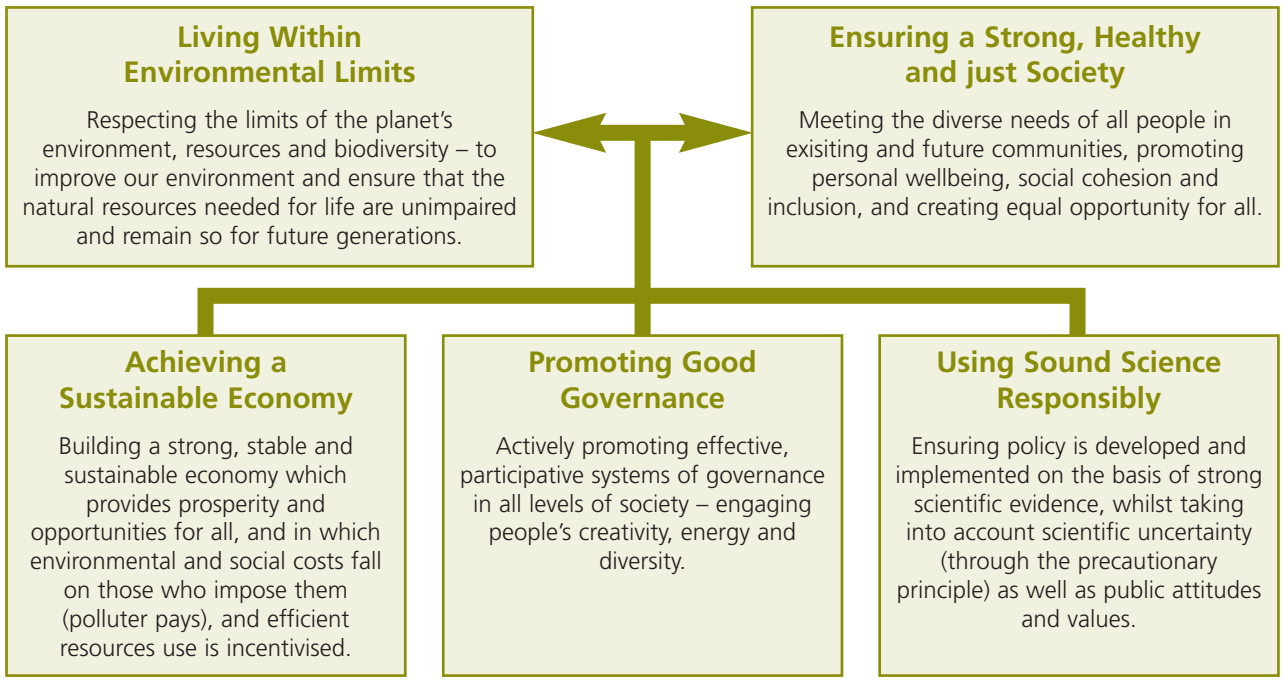
1.1.8 For the UK Government and the Devolved Administrations, this goal will be pursued in an integrated way through a sustainable, innovative and productive economy that delivers high levels of employment, and a just society that promotes social inclusion, sustainable communities and personal well-being. This will be done in ways that protect and enhance the physical and natural environment, and use resources and energy as efficiently as possible.

1.1.9 Government must promote a clear understanding of, and commitment to, sustainable development so that all people can contribute to the overall goal through their individual decisions. Similar objectives will inform all our international endeavours, with the UK actively promoting multilateral and sustainable solutions to today's most pressing environmental, economic and social problems. There is a clear obligation on more prosperous nations both to put their own house in order and to support developing countries in the transition towards a more equitable and sustainable world.

1.1.10 **Chart 1** is the set of shared UK principles that Government will use and promote to others to achieve our sustainable development purpose.

1.1.11 These principles will form the basis for policy in the UK. For a policy to be sustainable, it must respect all five principles – though the Government recognises that some policies, while underpinned by all five, will place more emphasis on certain principles than others. The goal, and use of principles to achieve it, apply as much to the food industry as other industries.

Chart 1:



1.1.12 **Chart 2** (overleaf) shows the economic flows represented by the food chain, which accounts for about 8% of the UK's gross domestic product (GDP). Food, drink and animal feed accounts for rather more than 8% of total imports and just under 5% of total exports. However, whilst the economic scale and benefits of the chain's activity are huge, so too are its environmental and social impacts, both here and overseas. This should not be surprising because the food industry is:

- **a major energy user** (accounting for around 126TWh per year, equivalent to about 14% of energy consumption by UK businesses) and a **major contributor to UK carbon emissions** (with 7 million tonnes of carbon per year);
- a **major user of water**, both from direct abstraction and use of the public water supply with a demand on the latter of about 430 mega litres per day, or 10% of all industrial use;
- **a significant source of waste generation** accounting for about 10% of the industrial and commercial waste stream and of particular importance for certain priority waste streams, notably packaging;
- responsible for 25% of all HGV **vehicle kilometres** in the UK;
- **a key player in the provision of healthy food choices and information** to enable consumers to achieve more generally a healthy balanced diet; and
- **a major employer**, responsible for 12.5% of the UK's workforce.

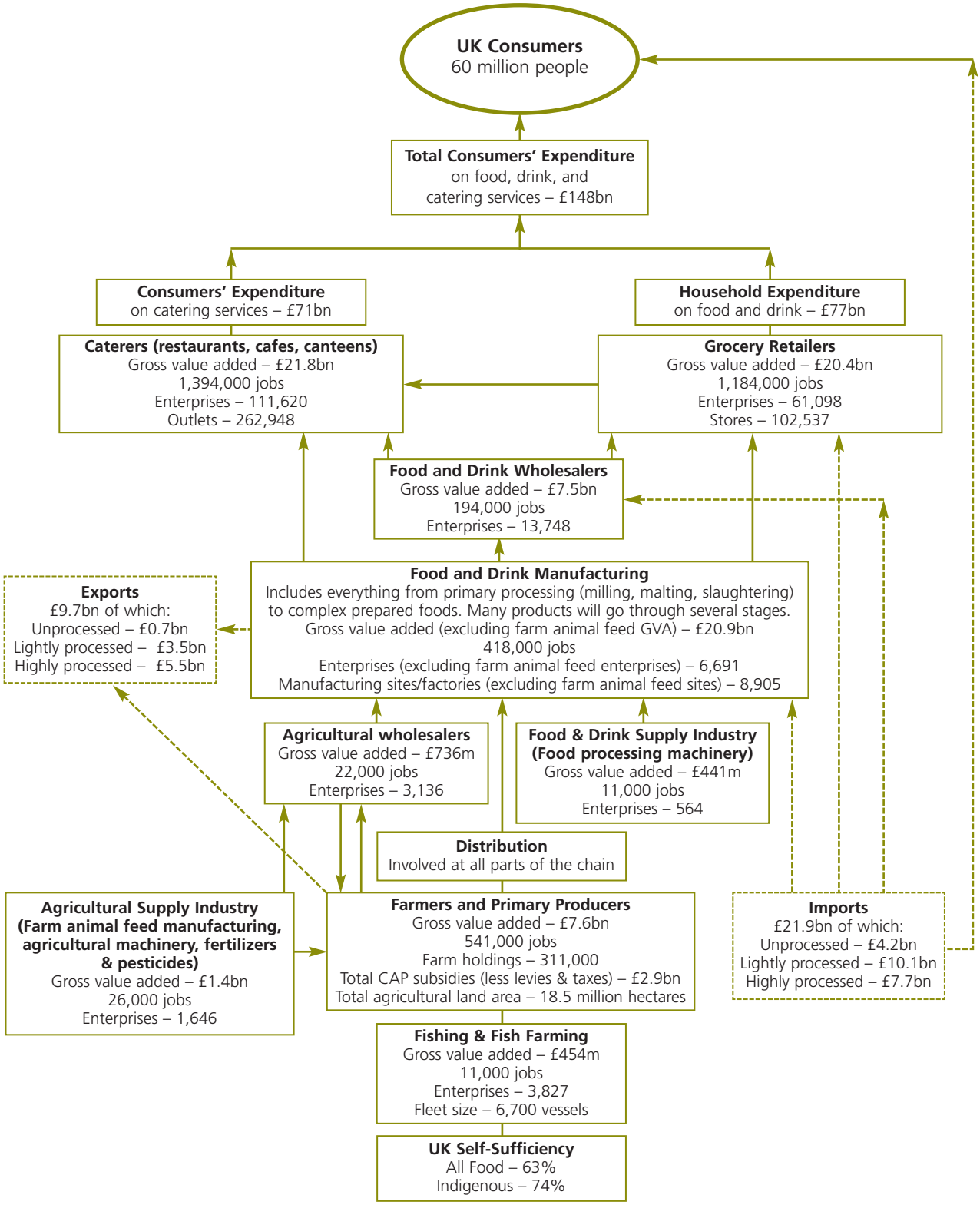
1.2 Strategy for Sustainable Farming and Food

1.2.1 In the Strategy for Sustainable Farming and Food (SSFF)[3], the Government set out the way forward for the farming and food industries. That Strategy showed how a profitable and internationally competitive agrifood industry could be achieved alongside a better environment, improved nutrition and prosperous communities. It set out the following key principles for a sustainable food chain:

- Produce safe, healthy products in response to market demands, and ensure that all consumers have access to nutritious food, and to accurate information about food products;
- Support the viability and diversity of rural and urban economies and communities;
- Enable viable livelihoods to be made from sustainable land management, both through the market and through payments for public benefits;
- Respect and operate within the biological limits of natural resources (especially soil, water and biodiversity);
- Achieve consistently high standards of environmental performance by reducing energy consumption, minimising resource inputs, and using renewable energy wherever possible;
- Ensure a safe and hygienic working environment and high social welfare and training for all employees involved in the food chain;

3 The Strategy for Sustainable Farming and Food, Facing the Future (December 2002) page 12

Chart 2: Economic summary of the UK Food Chain – Third quarter 2005*



* *Consumers' expenditure data is for 2004 and calculated at current prices. Gross value added (2004 provisional data from ONS) is calculated at basic prices (market prices – taxes + subsidies). Employee data is for Q3 2005. Trade data is for full year 2004, and is rounded. Dashed lines indicate main trade flows.*

- Achieve consistently high standards of animal health and welfare; and
- Sustain the resource available for growing food and supplying other public benefits over time, except where alternative land uses are essential to meet other needs of society.

1.2.2 Applying these principles to all food consumed in this country, including food grown and processed overseas, presents a major challenge. In particular, the appropriate balance between the different pillars of sustainability (and hence between the various principles for a sustainable food chain) will, among other things, differ by national income level and hence by country. Furthermore, there is always the danger that consumer protection, or other legitimate public policy aims – including environmental and social standards – can act as disproportionately restrictive barriers to trade, with excessive negative consequences in other countries, particularly developing countries. It is for such reasons that the World Trade Organisation (WTO) rules do not allow Governments to discriminate directly between imported products on the basis of production and processing methods. As the Government argued in its 2004 Trade and Investment White Paper, we need better scrutiny of these non-tariff barriers within the European Union and the WTO to ensure that they do not become an unnecessary and unjustifiable restriction on trade. Avoiding an adverse impact on developing countries is particularly important and the Commission for Africa recommended that "Developed countries should apply a development test when designing product standards to assess impacts and minimise barriers they may create."

1.3 Priorities for a Food Industry Sustainability Strategy

1.3.1 Given the importance of the industry, economically, socially and environmentally, the SSFF promised a complementary, more detailed strategy to cover the food chain beyond the farm gate – a Food Industry Sustainability Strategy (FISS).

1.3.2 A Stakeholder Group was established to prepare the FISS. Chaired by the Minister for Sustainable Farming & Food, the Group included representatives from the main food industry trade bodies, non-government organisations and trade unions **(see Annex I for membership)**.

1.3.3 The Group recognised that sustainability should not be considered in environmental, social or economic 'silos'. Also, given the global nature of the food market, nor should the domestic position be considered separately from the international. Nor should production be considered in isolation from patterns of consumption. All are inter-linked and need to be positively influenced to improve the food industry's sustainability.

1.3.4 With this, the sustainability principles at paragraph 1.1.11 and the cross cutting considerations of SCP and CSR in mind, the Group identified the following main, overlapping priorities for action which are covered more fully in **Chapters 4 to 6** and better regulation, which is covered in **Chapter 7**.

Primarily environmental	Primarily social	Primarily economic
• Energy use and climate change • Waste • Water • Food transportation	• Nutrition and health • Food safety • Equal opportunities • Health & Safety • Ethical trading	• Science-based innovation • Workforce skills • Tackling retail crime

1.4 How this strategy is set out

1.4.1 The priorities reflect the judgement of the Stakeholder Group of the areas on which work should initially focus because of their importance and because there is a shared commitment to achieving change through the FISS.

1.4.2 This document sets out how all those involved in the food industry can, through widespread adoption of best practice, contribute to the delivery of sustainable development. It also covers the role that Government and industry can play to better inform sustainable consumer choices and influence patterns of consumption.

1.4.3 Illustrated by case studies from all types of business, large and small, this strategy summarises: the nature of the challenges; what is already happening; what more Government and industry will do; and how progress will be measured.

1.4.4 The Stakeholder Group recognised that the actions set out in this document are the beginning of a long-term process. In addition, that success depends upon the industry, Government agencies, consumers and other stakeholders acting together. The FISS includes targets for making progress in key areas, and a wide range of Key Performance Indicators to measure industry progress across a broader range of activities based upon existing data sources.

1.5 Cross cutting considerations

1.5.1 Development of the FISS has come at a time when expectations about **sustainable consumption and production** (SCP) have taken prominence on the political agenda on a global, European and national level. Not least, the commitment made by world leaders at the World Summit on Sustainable Development in Johannesburg in 2002 to: *"encourage and promote the development of a 10 year framework of programmes in support of regional and national initiatives to accelerate the shift towards sustainable consumption and production … to promote social and economic development within the carrying capacity of ecosystems … delinking economic growth and environmental degradation"*.

1.5.2 The UK's Framework on SCP, published in September 2003[4], sets out how this vision can start to be developed and applied at national level. Its relevance to the food industry is an important consideration for the FISS and is covered more fully in **Chapter 2**. Corporate Social Responsibility, another cross cutting consideration, is covered in **Chapter 3**.

4 Changing Patterns: UK Government Framework for Sustainable Consumption and Production, available at www.defra.gov.uk/environment/business/scp

Chapter 2: Sustainable Consumption and Production

2.1 What is the challenge?

2.1.1 The central challenge of SCP set out in the UK Sustainability Strategy *'Securing the future'*, is to **break the link between economic growth and environmental impacts**. There are absolute limits to the earth's capacity to absorb pollution and provide natural resources. Indeed, it is already recognised that developed country patterns of consumption and production could not be replicated worldwide: some calculations suggest that such patterns could require three planet's worth of resources.

2.1.2 We need a major shift to deliver new products and services with lower environmental impacts across their lifecycle – and new business models that meet this challenge while boosting competitiveness. In practical terms this means 'getting more from less' through:

- better products and services;
- cleaner, more efficient production processes; and
- shifts in consumption towards goods and services with lower impacts.

2.1.3 Alongside household energy and water consumption, travel and tourism, food consumption is one of the largest and fastest growing sources of pressures on the environment. To achieve significant progress on SCP, action needs to be taken throughout the food supply chain.

2.2 The opportunity of SCP

2.2.1 Government has a key role to play in developing the business case for SCP by creating a policy framework that rewards companies that serve the social and environmental concerns of citizens. There is currently a strong movement towards de-regulation across the European and national economy to promote competitiveness. Within this environment, well-designed environmental policies, setting clear long-term targets that give business certainty, can promote innovation and business opportunity without harming competitiveness.

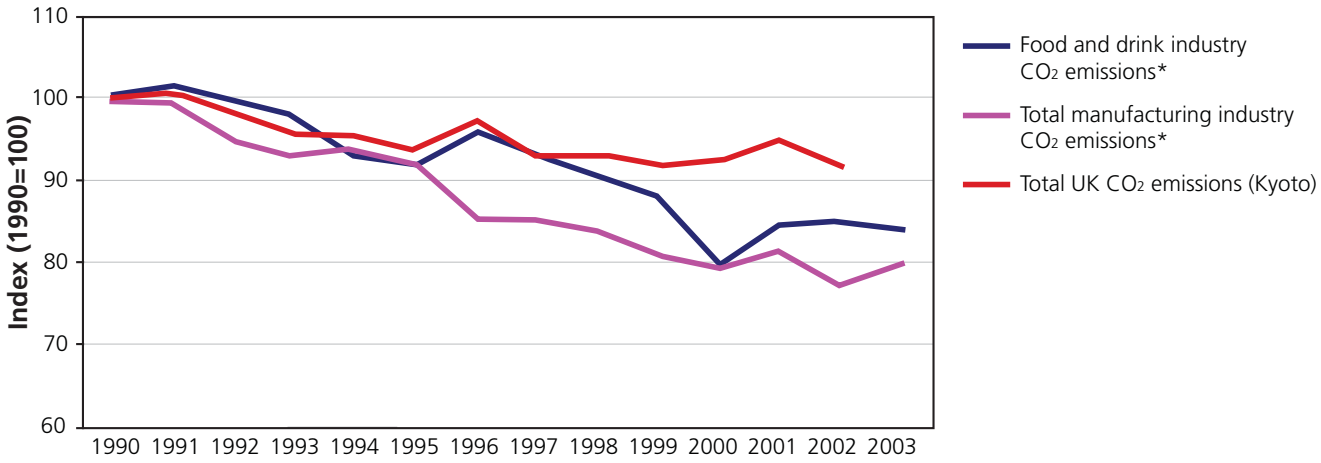
2.2.2 Sustainable businesses will increasingly define their success not just by their profitability but also by their ability to predict and meet consumer expectations and deliver social, economic and environmental well-being. Businesses that anticipate this trend and develop and market 'dematerialized' goods and services will have an additional selling point, compatible with shifting customer aspirations and legislative frameworks, and with the maintenance of robust supply chains.

2.2.3 Achieving this requires action plans designed to attain high performance for the sector, which outline how significant improvements can, and will, be made, and which are backed up by firm commitments from Government and the food industry. We outline in the sections below how this will be done. Impacts can arise across the whole lifecycle of a product or service – in manufacture, distribution, use or disposal. In some areas,

progress has been made. **Chart 3** shows post-1990 trends in the UK food manufacturing sector's CO_2 emissions, relative to total manufacturing and the UK overall. There is an overall downward trend in both the food manufacturing industry and manufacturing industry as a whole on which we need to build and extend in other sectors.

2.2.4 Food chain impacts go far wider than UK manufacturing. Supply chain impacts including those in the food retail and food service sectors and from food consumption in the home – and overseas – are relatively poorly understood. But evidence of their scale is emerging. The Office of National Statistics has recently estimated that – when the entire life cycle of goods and services is taken into account – food and drink (& tobacco) products are the largest single source of greenhouse gas emissions associated with UK household consumption.[5] Wider studies, looking at all environmental impacts suggest that food may be the most environmentally significant aspect of consumption.[6]

Chart 3: Food and drink industry, total manufacturing industry and total UK carbon dioxide (CO_2) emissions, 1990-2002



* Including CO_2 emissions relating to electicity use

2.2.5 From an economic perspective, a recent study from the Environment Agency[7], using modelling by Cambridge Econometrics and based on data from case studies, has estimated the total cost to manufacturing of wasted natural resources to be between £2 and £3 billion, equivalent to about 7% of total manufacturing profit. A focus on resource efficiency could, therefore, substantially improve UK competitiveness.

2.2.6 The SCP programme is currently focussed on breaking the links between economic growth and environmental degradation. However, there are important links between food production and consumption and social issues, such as employment and health both in the UK and abroad. Social aspects relevant to this strategy are covered in **Chapter 5**.

5 Francis, The Impact of UK Households on the Environment, Economic Trends 611, October 2004 available at http://www.statistics.gov.uk/downloads/theme_economy/ET611Perry.pdf

6 Michaelis and Lorek, Consumption and the Environment in Europe: Trends and Futures, Danish EPA, 2004

7 The Benefits of Greener Business, Cambridge Econometrics and AEA Technology, April 2003 http://www.environment-agency.gov.uk/commondata/acrobat/benefits_of_green_business1.pdf

2.3 The SCP approach

2.3.1 Rather than pursuing economic, social and environmental issues as separate strands, an integrated approach is needed. The box below highlights key UK Government policy themes which have emerged from '*Changing Patterns*'[8] which will be vital for the FISS. **Chapter 3** sets out action to be taken domestically at the **production** stage of the food chain mainly by manufacturers. However, retailers, consumers, and the public sector can also reduce impacts throughout the food chain. For example, through purchasing decisions and influence on supply chains. The rest of this chapter deals with these aspects and what will be done to strengthen the **evidence base**, which will underpin delivery of SCP in the food industry.

Priority themes for delivery of SCP

The UK Government's approach to SCP is outlined in '*Securing the future*', which builds on *Changing Patterns*. Major themes of SCP include:

- **Evidence base:** A robust evidence base is essential to enable development of policies which will target major impacts at the most appropriate point in the lifecycle and as high up the supply chain as possible. A programme of research is being developed, to produce much more comprehensive information on the scale and source of impacts of goods and services in the lifecycle, impacts of UK and EU consumption on other countries, links between impacts and competitiveness, individual values and behaviour, the impacts of policy measures and the scope to address them in each of the areas below;
- **Sustainable products:** The priorities should be to consider impacts of everyday products across the lifecycle, measures to close the resource loop (e.g. through recycling, reuse or remanufacturing), promoting radical design solutions which benefit the environment and the economy, building up knowledge to drive improvements in product markets;
- **Sustainable production processes:** The aim is to deliver greater efficiency and value with least resource use, pollution and waste, in both service and manufacturing industry. A number of measures are already in place to drive more sustainable production, including climate change agreements, emissions trading, landfill tax, integrated pollution prevention and control and expanded help and support for business through the Carbon Trust, the Envirowise programme, and the Environment Agency;
- **Sustainable consumption:** Much current consumption remains unsustainable in the long term. As well as making improvements in products and production processes, influencing consumer behaviour will be an important component of delivering SCP. Households, business and the public sector will all need to consume more efficiently and differently. Much more needs to be done to understand how awareness of sustainable development goals links to willingness and ability to contribute to them;
- **Public procurement:** This is increasingly cited as a powerful mechanism to shift towards more sustainable goods and services. Government recognises the need to lead by example and has stated its intention to be recognised as amongst the leaders in sustainable procurement across EU member states by 2009; and

8 http://www.defra.gov.uk/environment/business/scp/pdf/changing-patterns.pdf

- **Catalysing change:** Broader cross-cutting measures will be developed to complement the specific focus on products and services. The Government strongly supports public reporting and has challenged FTSE and large private companies to report their performance in a transparent and meaningful way. Sectoral strategies, of which this is an example, will also be important in generating commitment across all major UK business sectors, and delivering long term decoupling.

2.4 Evidence base

2.4.1 SCP offers a different perspective on business performance from just the financial bottom line. The case studies accompanying this strategy demonstrate that a focus on resource efficiency, reducing waste and pollution, and energy and water use reveal new areas where businesses can improve efficiency, yielding both environmental and economic wins, and help to improve competitiveness.

2.4.2 There is an urgent need to move beyond case studies and build a more comprehensive picture of environmental performance of the food industry (see **Annex II**). A scoping study by Defra and the Food and Drink Federation (FDF) in 2004 revealed that, as with many business sectors, there is relatively little publicly available information on the environmental performance of the food industry. Such information is, however, vital if Government and industry are to work effectively together to identify major impacts, the potential to improve, the costs of doing so and agree the pace of change. Defra will therefore commission research to establish baseline data on energy, waste and water where there are significant gaps in current knowledge.

Envirowise

This Government funded programme provides resource efficiency advice to business on how to minimise its waste and reduce its water consumption, effluent discharges and emissions in cost effective ways. So far the programme has helped UK businesses save over £1 billion, with the food industry particularly benefiting from the advice and support available by deriving the greatest share of savings. By recycling Landfill Tax revenues, Government has been able to increase substantially the annual funding of Envirowise from £5 million in 2004/05 to over £20m in 2006/07 with a similar level of funding expected in subsequent years and corresponding expansion in the level of support to help business.

2.4.3 As described earlier, there are already a number of benchmarking schemes and business support programmes, which could generate much of the necessary evidence on energy, water and waste. For this approach to be successful, many more food companies will need to take up the services on offer. Plans to ensure this happens, outlined in **Chapter 4**, will be a key part of delivering this strategy.

2.5 Product lifecycles

2.5.1 Understanding which food products available on the market may be more or less sustainable will be essential to progress. A focus on the lifecycle impacts of products will inform future product development and consumer information to aid more sustainable choices.

2.5.2 A good deal of research has already been conducted on the distributional impacts, to inform the "food miles debate" and this is discussed in **Chapter 4**.

2.5.3 Full lifecycle analysis is beginning to be carried out on food products. However much more is needed, not least because of the sheer range of food products available. Examples of work to date include:

- The Market Transformation Programme. This initiative focuses mainly on energy-using products, but work commissioned by the Advisory Committee on Consumer Products and the Environment (ACCPE) on adapting the programme approach to analysis of the market for chicken products revealed potential for this to be taken further.
- Economic and Social Research Council funded research into the lifecycle impacts of common food products, including shrimps, pork, tomatoes, yoghurt and potato chips, under their Sustainable Technologies programme.
- Marks and Spencer's work on food packaging which found, for example, that packaged apples create no more impact on the environment than loose unpackaged alternatives; and paper carrier bags have twice the environmental impact of polythene alternatives.
- Unilever's work with growers in East Anglia and Humberside on its frozen pea brand which measures the brand's impact using a series of sustainability indicators.[9]

2.5.4 Government and food industry trade associations are committed to working together to encourage the sector to undertake more lifecycle analyses of products. To provide momentum, Defra commissioned research, initially proposed by the Sustainable Development Commission (SDC), into the impacts of the contents of an average shopping trolley of goods and will disseminate the results when the work is completed in Spring 2006. It will begin by drawing on the findings of existing research, identifying gaps and clarifying the direction of further research. The study will include consideration of the environmental impacts associated with different sources of nutrition within the selection of products, as well as impacts from energy, water and chemical use, food and packaging waste and transportation.

2.5.5 The Government's approach to SCP recognises that supply chains are increasingly global, and there may be an increase in trade of agricultural raw materials in the future arising, for example, from a successful outcome of the Doha development round.[10] As well as understanding where the most significant product impacts occur in terms of the lifecycle

9 http://www.unilever.co.uk/Images/In%20pursuit%20of%20the%20sustainable%20pea,%202002_tcm28-17382.pdf

10 http://www.wto.org/english/tratop_e/dda_e/dda_e.htm

it will be important to establish whether impacts occur in the UK or abroad. This will inform the approach that Government and businesses take to addressing them. Since £21.9 billion of food is imported to the UK, compared to £9.8 billion exported, this is a significant issue for the food industry.

Action Point

Following on from the work and recommendation of ACCPE, Government and industry will work together to:

- Develop a policy framework for sustainable commodities;
- Develop and disseminate best practice on moving towards sustainable commodities for the food industry; and
- Create a forum to share awareness of environmental issues and experience between organisations in food commodity supply chains.

Defra is initially taking this forward with a scoping study of existing research and models for sustainable commodities, such as those for timber and palm oil.

2.5.6 Work on commodities will also draw on the SDC's report, '*Sustainability of Sugar Supply Chains*'. This report includes a sustainability checklist to help large scale food purchasers explore the sustainability of supply chains. This has been shared with food industry trade associations who are committed to promulgating and promoting it to their members.

2.6 Business behaviour

2.6.1 Raising **food industry awareness** of SCP is an initial priority. Government and food industry trade associations need to work closely together to explain the approach and its relevance to the industry, and achieve their engagement.

2.6.2 The food industry is extremely diverse, and there can be no single prescribed approach to improvement. Increased take up by industry of existing business support programmes such as Envirowise and the Carbon Trust, which can give tailored advice, will be an important factor in delivering sustainable production. More widespread engagement is also needed with benchmarking initiatives such as those available via the Small Business Service (SBS), the Envirowise "Big Splash" water benchmarking initiative, the Department for Trade and Industry (DTI) funded "PERFORM" project and the Confederation of British Industry (CBI) "Contour". Benchmarking helps companies identify their position amongst peers, and the scope for improvement, supporting business efficiency and competitiveness goals.

PERFORM

The aim of the **PERFORM** project, developed and run by the University of Sussex, is to benchmark and improve sustainability performance in industry. The project:

- Offers companies a free sustainability performance benchmarking service;
- Allows businesses to enter key performance indicators online and, in return, receive an automatically generated benchmarking report;
- Works with companies in using benchmarking data to develop improvement programmes; and
- Collects CSR data to improve understanding of social and environmental performance of businesses.

The project currently covers a number of industrial sectors (aggregates, aluminium, cement, ceramics, electricity, glass, motor vehicles, paper, plastics, printing, steel, timber and water).

2.6.3 **Chapter 4** outlines the goals for increased uptake of Envirowise services. Trade associations have a valuable role to play in ensuring these are met, publicising the environmental and financial benefits which can be delivered and helping to generate take up of services on offer. Their involvement in co-ordinated campaigns can be particularly effective. The "Retail Therapy" initiative run by Envirowise and the British Retail Consortium (BRC) identified £1.6 million in savings in 6 months through supply chain partnerships focusing on environmental performance.

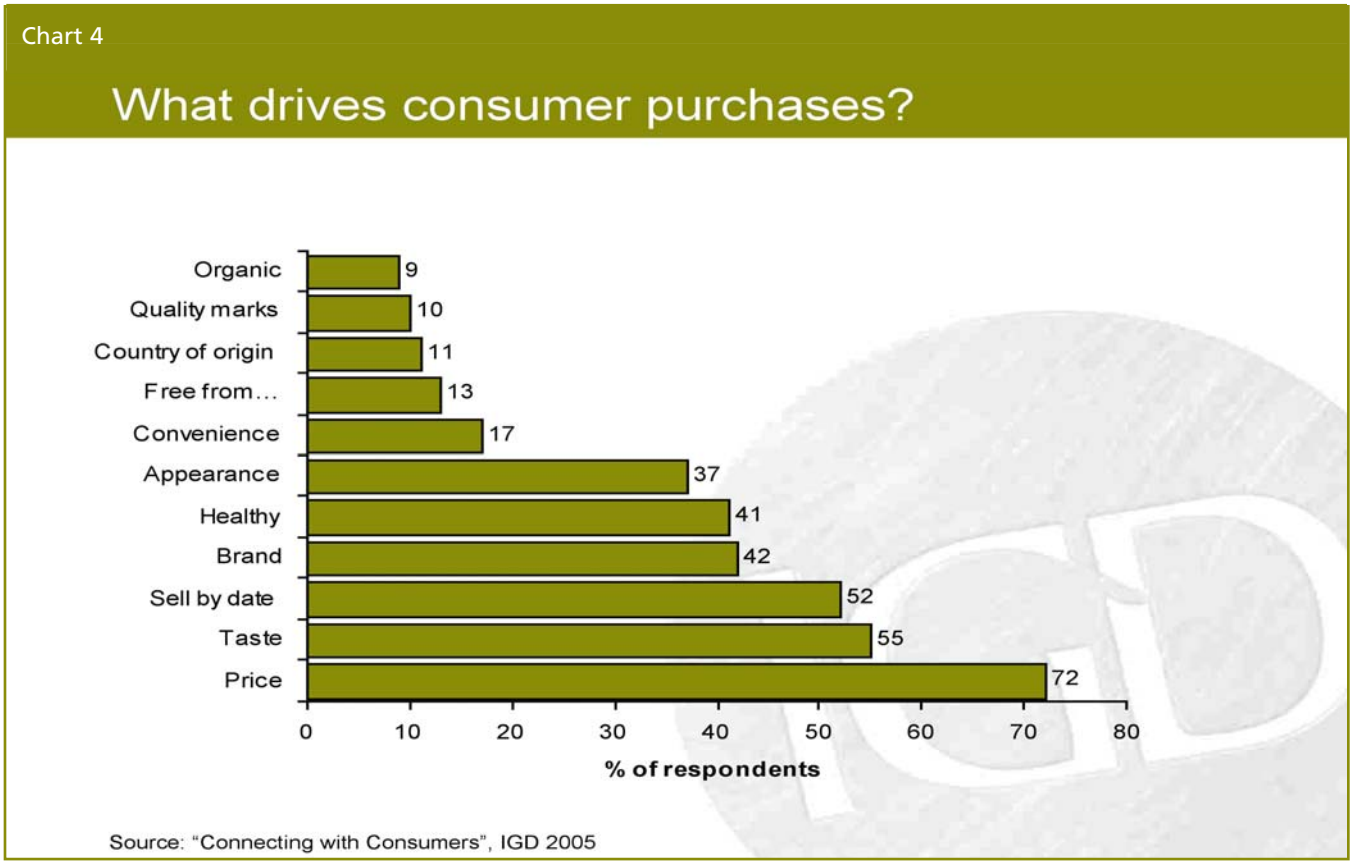
2.7 Consumer behaviour

2.7.1 As well as realising the potential for better products and production processes, there will also be a need for households, business and the public sector to consume more efficiently and differently to ensure that consumption from rising incomes is not accompanied by rising environmental impacts, or social injustice.

2.7.2 It is the responsibility of Government and business to enable consumers to make sustainable choices. '*Securing the future*' makes clear that there continues to be a very important role for regulation and enforcement. However, we need to make sure we are using the levers available in a consistent way. The new strategy therefore focuses on the need to enable, encourage and engage people, and recognises that the Government needs to lead by example.

2.7.3 There are likely to be particular challenges associated with changing consumer behaviour on food. Institute of Grocery Distribution (IGD) research published in 2005 (illustrated in **Chart 4**), and similarly the Food Standards Agency (FSA)'s 2001 Food Concerns Omnibus Survey[11], showed that price, taste and sell by date are the three most dominant factors in consumer thinking. Wider sustainability issues do not feature highly amongst factors affecting consumer choice, although the growing interest in organic and fair trade products is a positive sign.

Chart 4



11 http://www.food.gov.uk/multimedia/webpage/concernsomni

2.7.4 We need to understand more about the social and cultural influences that shape consumption choices, and how consumption patterns link to environmental impacts across the whole lifecycle of products in order to narrow the gap between consumer awareness and actual behaviour. '*Securing the future*' sets out the Government's approach to changing behaviour, based on research. Some of the projects funded through the Environmental Action Fund (EAF) are looking at ways in which work at the community level can change people's or businesses' behaviours on food consumption towards more sustainable patterns. Government will be looking to learn from these projects (and the others) to see what factors shape behaviour and how we can influence it to be more sustainable. In addition to this, more needs to be done to understand the specific issues for the food chain. Food retailers are being encouraged to work with Defra on a food industry strand to this research, to improve the sector's evidence base on consumer behaviour.

2.7.5 The Government's **Green Claims Code**,[12] helps businesses to provide more confidently general environmental information on products, which is clear and helpful to consumers. The Code has been embedded into trade body advice and is widely available through Citizens Advice Bureau and websites. Local authorities police its observance.

2.7.6 Defra has also produced a **shoppers guide to green claims** to assist consumers in making more sustainable purchasing decisions. It covers a range of food labels, including commonly used organic certification labels, which give consumers confidence that ingredients within products have been organically produced. However, food labels do not cover other environmental impacts associated with transport or packaging.

2.7.7 It is important that consumer expectations are developed to support more sustainable food production and consumption. In order for this to happen, consumers will need clear information on which to base food purchasing decisions. The Government is developing proposals for an **"Environment Direct"** service to give clear independent advice to consumers on the impacts of the choices they face. A scoping study has been completed, which has looked at how the project might develop. It seems likely that Environment Direct will be primarily an internet based service which will give people straight facts about the effects of different consumption choices, including information on how we travel, the goods and services we buy and how we use and dispose of things. The Government will be consulting on how to take this forward and, if there is broad agreement, it is planned that the service will be up and running during 2006. Information on the environmental impacts of food products, as a significant area of household consumption, will be crucial to this and will be informed by the research into a shopping trolley of products outlined in 2.5.4.

2.7.8 Existing food **assurance schemes** may also have a role to play in promoting purchase of sustainable food. They already provide consumers with confidence that certain specified standards (such as food safety, animal welfare and disease control) have been observed. The Government endorsed the Policy Commission's view that the "Red Tractor" scheme should represent a baseline standard for all food, and that the standards underpinning it should be owned by the whole food chain and administered on their behalf by the Assured Food Standards (AFS). The new governance arrangements agreed by the industry

12 Green Claims – Practical Guidance: http://www.defra.gov.uk/environment/consumerprod/gcc/pdf/gcc.pdf

for the main sectoral assurance schemes using the Red Tractor logo represent a significant step towards the achievement of this vision. The Government also welcomes the development by AFS of a marketing strategy for the Red Tractor, which is based on improving understanding of what exactly the logo stands for.

2.7.9 The Red Tractor scheme only addresses some aspects of sustainability and operates as a baseline. Where there is a clear market demand for higher standards there is scope for these to be met by the development of schemes such as Freedom Foods, LEAF and Conservation Grade. Such schemes can play an important role in enabling consumers to make more sustainable choices. Defra will encourage discussion and collaboration between organisations sponsoring these "higher-tier" schemes to ensure that the maximum impact is realised.

2.7.10 It is important to ensure that farmers who adopt higher standards are not put at a commercial disadvantage by having to compete with imported food that can be sold more cheaply because it does not meet the same standards. This emphasises the need for consumers to understand what the baseline and higher level assurance schemes stand for.

2.7.11 Progress in developing the evidence base on impacts of food products and agreement as to more sustainable choices will be a necessary basis for changing consumer behaviour. A **package of measures should then be developed**, building on existing and new consumer information schemes to ensure that more sustainable food products are available and offer a clear choice to consumers. It is well known that information alone is not sufficient to drive change in consumer behaviour. It will be important to ensure that existing and new measures are in line with the four step approach set out in '*Securing the future*', **E**xemplify, **E**nable, **E**ncourage and **E**ngage.

2.8 Public Procurement

2.8.1 Through public procurement Government can provide leadership to deliver sustainable development goals. This is why we established the **Public Sector Food Procurement Initiative** (PSFPI). With spending of about £1.8 billion for food supply and catering services in England per year, public procurement of food and drink has the potential to increase significantly demand for more sustainable food and healthier meals.

2.8.2 The PSFPI aims to encourage public sector bodies to purchase food and manage their catering contracts in a manner that promotes sustainable development and opens up opportunities for local and UK suppliers. The key objectives are to:

- raise production and process standards;
- increase tenders from small local producers;
- increase consumption of healthier foods;
- reduce adverse impacts on the environment; and
- increase the capacity of UK suppliers to meet demand.

2.8.3 Guidance for procuring food and catering services has been published.[13] This includes case studies on how to provide more opportunities for local producers, how to increase the availability of organic food and fair trade products and at the same time ensure value for money – in compliance with UK public procurement regulations and EU procurement rules. Central Government departments have drawn up action plans to achieve the initiative's aims and local authorities are being encouraged to follow suit.

2.8.4 Other significant developments include:

- a National PSFPI Conference for Buyers which was held in November 2003;
- regional training workshops for buyers which were run in 2004 with a second round running throughout spring 2005 and, as announced by Defra on 27 February 2006, the development of a practical tool which will help practitioners;
- publication of *'Draft Catering Services Procurement Guidance – Toolkit for the Public Sector'* online;[14]
- a menu of model clauses for delivering PSFPI objectives has been produced taking account of views received from public sector buyers and stakeholders, including those of an industry advisory, the Meat and Livestock Commission (MLC), English Farming and Food Partnership (EFFP), National Farmers Union (NFU) and food service

13 http://www.defra.gov.uk/farm/sustain/procurement/index.htm.

14 http://www.defra.gov.uk/farm/sustain/procurement/tools.htm

companies;

- a National Food Suppliers conference which was held in March 2005 in association with major food service companies; Aramark, Compass and Sodexho. Over 200 farmers, growers, producers, caterers and wholesalers participated in a choice of four workshops. These offered delegates the opportunity to talk to major food service companies and gain tips on how to do business with the public sector, either directly or through food service companies. Workshops also focussed on making sense of public service contracts and increasing cost efficiencies through environmental improvements;
- all Government Offices have projects to develop supply networks approved by the Food Procurement Unit (FPU) for seed corn funding. They are listed on the PSFPI web site; and
- a Communications Action Plan covering media and non-media channels for promoting the PSFPI.

Chapter 3: Corporate Social Responsibility (CSR)

3.1 What is the Challenge?

3.1.1 The Government's CSR update,[15] published in 2004, describes CSR as essentially the business contribution to sustainable development. It describes CSR as what companies do voluntarily over and above the minimum legal requirements for social and environmental performance, e.g. environmental protection, equal opportunities, employment terms and conditions and health and safety.

3.1.2 A 'socially responsible' business would:

- recognise that its activities have a wider impact on the society in which it operates;
- take account of economic, environmental and social impacts of its activities across the world; and
- seek to achieve benefits by working in partnership with other groups and organisations.

3.1.3 Such action can bring business benefits by reducing risk, by enhancing brand value, by stimulating innovation, by opening doors and creating good will and by improving staff efficiency and morale. It can also attract stable and ethical investment and add competitive edge.

3.1.4 The challenge is to gain widespread take up of CSR across sectors among both large and small businesses. In addition, we need to integrate CSR into mainstream business thinking.

3.1.5 In addition, Sustainable Consumption and Production represents a new frontier for CSR, in which the food industry will need to consider the implications of their business model and product offer for the necessary shift towards consuming differently, based on compatibility with a 'one planet economy' and consumer well-being. This is both a challenge and an opportunity.

Through **Diageo's** community focus area 'Skills for Life', the company's businesses and employees are able to work with unemployed or disadvantaged people to help them find worthwhile work or start new business ventures. Since the early 1980s Diageo has supported Tomorrow's People, a specialist charitable trust that helps bridge the gap between job seekers, employers and government to ensure the labour market works more efficiently. The activities of Tomorrow's People are centred on careers, guidance, job search, training, advice and mentoring. Diageo commits 1% of its pre-tax profit to the community supported by the Diageo Foundation. In the year to June 2004 this totalled nearly £18m.

15 See Government CSR web-site www.csr.gov.uk

3.2 What is already happening?

3.2.1 There are many good examples of food companies rising to the challenge of CSR. Levels of reporting by organisations are increasing and there is evidence that CSR is beginning to be mainstreamed as part of responsible business practice and investor considerations. However we need to do more.

3.2.2 **Business in the Community** (BITC) plays a primary role in raising business awareness of best practice and developing and disseminating guidance. Its members, which include food companies, must commit to:

- integrating responsible business practice throughout their business;
- making an impact through collaborative action to tackle disadvantage; and
- inspiring, innovating and leading by sharing learning and experience.

Cadbury Trebor Bassett runs **"CommUnity – You Can Make a Difference"** which is a company initiative involving 1400 volunteers from Board members and senior managers to office-based administrators, the sales force and factory operatives. They are actively encouraged to help their local communities and to develop their own skills, for example:

- listening to children read and mentoring students;
- bringing senior management together with headteachers to provide strategic support;
- 'buddying' homeless people with volunteers to help them make their first steps into employment; and
- running sessions in schools (e.g. on food science as part of Science Week).

Volunteers are, wherever possible, given time off during their working day to take part in the initiative.

3.2.3 The **BITC Awards for Excellence**, sponsored by DTI, is a key means of encouraging and rewarding the widespread adoption of CSR best practice. The awards have a very high profile within industry and are designed to inspire companies to raise their game.

3.2.4 The DTI also sponsors the **BITC Corporate Responsibility Index**, which assesses the extent to which corporate strategy has been translated into responsible practice throughout the organisation in the management of four key areas: community; environment; marketplace; and workplace. It places the onus on the company to demonstrate that corporate responsibility is part and parcel of the risk evaluation process of the business and that the company is managing the key issues and risks that are material to it. The Index revealed that the food industry was one of the sectors with the largest participation in the survey. Feedback on the Index shows that it is a useful management tool, which helps to benchmark responsible business practice.

3.2.5 DTI is also supporting a **CSR Academy** which aims to help CSR become part of mainstream business practice by developing and spreading businesses' skills and understanding – see www.csracademy.org.uk

3.2.6 Some **trade associations** are also being proactive. For example, the FDF has launched a programme of CSR action for its members. Called the Community Partnership Awards, it aims to reward food and drink manufacturers who make the biggest positive difference to the everyday lives of ordinary people.

3.2.7 As many small businesses are not members of trade bodies, DTI has sponsored the **Small Business Consortium**, which includes NGOs, trade unions and other stakeholders, to develop a practical toolkit to help SMEs to improve their social and environmental impacts. *The Small Business Journey*, which includes case studies, business case arguments and guidance for SMEs was launched in July 2004.[16]

Dragonville is one of **Tesco's** 7 regeneration partnerships – more are planned. The partnerships are bringing jobs and training to people in areas characterised by long-term unemployment, poverty and social exclusion. A Tesco Extra store opened in Durham in 2001 with 340 new jobs, of which 296 went to locally unemployed people. The Scheme operates in partnership with Durham City Council, Durham County Council, the Employment Service, the Sherbum Road Regeneration Initiative and the USDAW trade union.

3.3 What more will Government and industry do?

3.3.1 The Government has an ambitious vision for CSR: to see organisations in the UK take account of their economic, social and environmental impact, and take complementary action to address key challenges based on their core competencies – locally, regionally, nationally and internationally.

Unilever's project, run by **East London Schools' Partnership**, seeks to meet the needs of the community and individuals through a variety of approaches by:

- providing personal coaches – 7 senior managers work with head teachers and their deputies in one-to-one coaching partnerships;
- providing leadership development;
- offering work experience opportunities;
- helping schools attain the Investors In People standard, and
- motivating pupils and raising their aspirations through volunteering initiatives such as reading partners, number partners, work shadowing and mentoring.

Unilever also offers training opportunities to all teaching staff at middle and senior management levels to attend the company's management development programme and relevant training courses.

16 http://www.smallbusinessjourney.com/output/Page1.asp

3.3.2 The Government's priorities for CSR are to:

- take a lead internationally working with all stakeholders;
- raise awareness and create an environment in which CSR can thrive;
- mainstream CSR into general business practice; and
- reach a wider audience tackling key sectors.

3.3.3 Food industry **trade organisations** are committed to developing ways of encouraging their members to engage with local communities, in line with **best practice**. To encourage this, Defra will work with trade bodies providing targeted sponsorship of some awards where necessary to fill gaps in coverage.

3.3.4 Working with BITC, the food industry is committed to launching an initiative called **"Plough to Plate"** to raise awareness and uptake of CSR practice in the industry and as well as its integration into mainstream business thinking. The project already has commitment from companies like Compass, Unilever, Whitbread, Tesco, Waitrose, Cadbury Schweppes and Syngenta. Its aim is to develop a range of CSR best practice guides of direct relevance to the food industry and, helped by BITC, to promote them using road shows, awards, websites and media partners. The current focus is on re-connecting farmers with consumers and consumers with farmers. The guides will show what food companies, including SMEs, can achieve through CSR without significant financial costs.

3.3.5 The cost of the project is expected to be £92,000. Defra is committed to contributing £42,000, with the balance falling to industry participants. Building on the work being done by DTI, Defra is also committed to providing targeted sponsorship of food industry CSR awards schemes where gaps exist in current coverage.

Action Point

The Challenge is to devise a set of CSR criteria for the food industry which reflects the contribution that it is best placed to make and ways of measuring progress. Industry to report by winter 2006.

3.4 How will we measure progress?

3.4.1 The criteria and methodology developed by the food industry will be used as a **FISS Key Performance Indicator**.

Chapter 4: Primarily Environmental

Energy Use and Climate Change

What is the challenge?

4.1.1 There is mounting evidence that the world's climate is changing and that the burning of fossil fuels, releasing carbon dioxide to the air, is the principal cause. The UK is committed under the international Kyoto Protocol to reduce greenhouse gas emissions by 12.5% by 2008-12, relative to 1990.[17] In addition, the Government has set a higher domestic goal of cutting carbon dioxide emissions by 20% by 2010.

4.1.2 The Energy White Paper[18] published in February 2003 showed that energy efficiency will play a large role in achieving this goal and will require a doubling of the rate of energy efficiency improvement of the last 30 years. Business and the public sector alike are expected to contribute, achieving reductions of around 6 million tonnes of carbon a year by 2010. The Energy White Paper also stated the Government's goal is to put itself on path to cut the UK's carbon dioxide emissions – the main contributor to climate change – by some 60% by about 2050. Real progress will be required from all sectors, including the food industry, in order to achieve this.

4.1.3 The food industry is a major energy user, accounting for around 126TWh per year,[19] equivalent to about 14% of UK energy consumption by UK businesses.[20] Its energy use is, therefore, a major contributor to UK carbon emissions accounting for roughly 7 million tonnes of carbon per year. However, while data availability is good on aggregate, more robust data is required to inform performance between subsectors (See **Annex II**).

4.1.4 The challenge is for the food industry to raise its rate of energy efficiency improvements across the supply chain to reduce its greenhouse gas emissions, making a full contribution to the goals set out in the Energy White Paper. **To meet the UK's carbon dioxide emissions target, the manufacturing sector will need to improve its absolute savings in the context of rising production levels to help meet the 2010 goal. And the rest of the food industry will need to engage fully in energy management to the same degree as food manufacturers.**

What is already happening?

4.1.5 The UK Government and the devolved administrations have put a **Climate Change Programme** (CCP) in place to help the UK achieve its Kyoto commitments and domestic energy targets.[21]

17 http://unfccc.int/resource/docs/convkp/kpeng.pdf

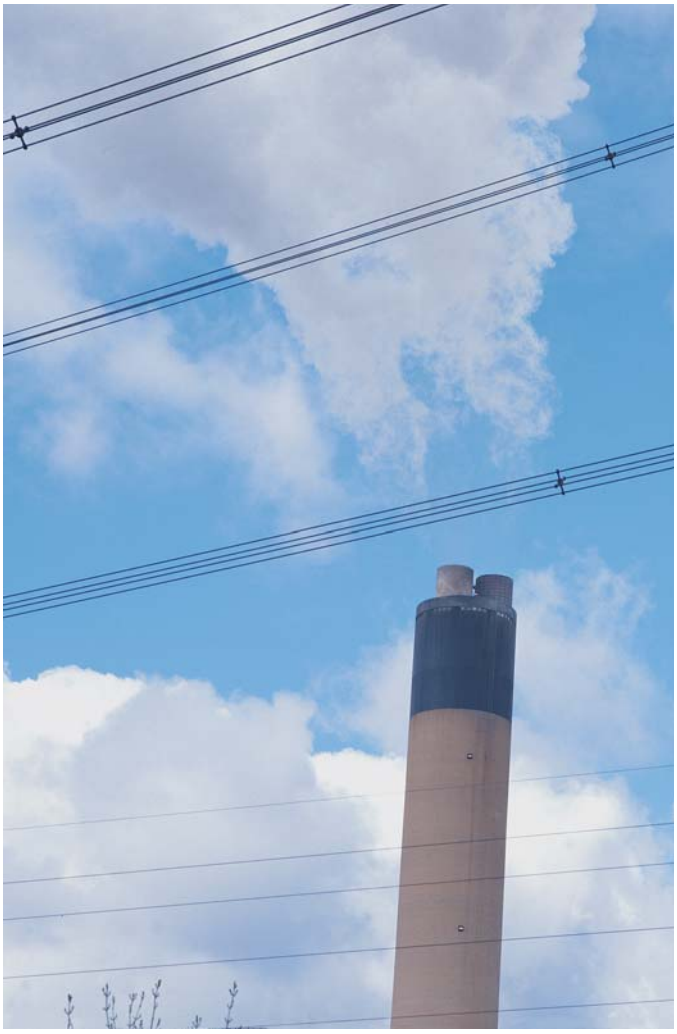
18 http://www.dti.gov.uk/energy/whitepaper

19 Primary energy equivalent, including fuels relating to electricity use.

20 Excluding the transport and energy industries, as well as the public sector.

21 http://www.defra.gov.uk/environment/climatechange/uk/ukccp/index.htm

4.1.6 The programme comprises a package of integrated policies. A key part is the **Climate Change Levy** (CCL), which aims to stimulate energy efficiency across business. Another is the **Climate Change Agreements** (CCAs) which, in return for meeting energy efficiency targets, enable participants in energy intensive sectors to benefit from an 80% discount on the levy.



4.1.7 Forty-two agreements are in place, involving 5,000 participants, including ten agreements in the food manufacturing and retail sectors. These cover about 85% of the food and drink (and tobacco) sector's energy use for 2002 as recorded in Dukes energy use. The largest of these agreements is with the FDF; covering about 54% of the food manufacturing sector's energy use. There are also separate agreements for dairies, malting, brewing, spirit drink distilling, craft baking, and supermarkets' in-store bakeries and rotisseries and for the processing of red meat, poultry meat, and eggs.

4.1.8 Recent analysis of the food industry's performance under the eight main CCAs concerned with food manufacture for human consumption showed that from the late 1990s:

- its energy efficiency **per tonne** of production improved by 9.5% compared to the voluntary target of 7.5%; and
- it achieved **absolute** annual *savings* of 73,000 tonnes of carbon, despite a reported increase in production throughput of around 8%.

4.1.9 By making such energy savings, food manufacturers with CCAs are currently avoiding CCL of about £61m per year (through receipt of the levy discount). They are also saving about £67m per year in reduced energy bills (and avoiding a levy of £11m per year on the saved energy). Moreover, it's a win-win situation because it is also protecting the environment.

Energy bills were nearly 15% of operating costs for **The Ivy House**, a hotel in Chalfont St Giles. Through the Hospitable Climates Scheme, which was established in June 2000 with help from ActionEnergy, the owner had an energy site audit, concentrating on areas such as refrigeration, kitchen fans and boiler plant. Suggested measures, including pre-heating of mains cold water from cellar refrigeration heat recovery, have produced estimated savings of £2,100 per annum. These savings are around 30% of current energy costs against an investment of around £2,600 – so the payback period was very short.

4.1.10 Significant progress is being made in the food manufacturing sector – which has reduced its energy use in absolute terms by 2.8% since the 1990s and seen the carbon attached to its energy use reduced by 16%, just over half due to its own efforts and the rest due to the electricity generators. However, a lot remains to be done in all parts of the food industry. For example, temperature controlled storage accounts for some 5% of the total carbon emissions of the entire food industry. This specialist part of the industry has achieved energy savings of around 7.5% in the past ten years. However CSDF work with the Carbon Trust to benchmark temperature controlled storage in the UK shows that energy per cubic metre per year varies dramatically, with the least efficient consuming twice the average and up to five times more than the most energy efficient.

4.1.11 The **UK Emissions Trading Scheme** also encourages greater energy efficiency, incentivised through a market based mechanism. Six food and drink related companies (four retail and two manufacturing) have joined the scheme as Direct Participants and have achieved emissions reductions of over 163,000 tonnes of carbon (almost 600,000 tonnes of carbon dioxide equivalent) in the first three years of the scheme.

4.1.12 Food manufacturers are also covered by the **EU Emissions Trading Scheme** (EUEUTS). The UK Government has secured temporary exclusion from this scheme for over 300 installations covered by CCAs for 2005, 2006 and 2007. In the food and drink sector, out of 90 installations covered by the EU ETS, 54 have been temporarily excluded and 36 have joined the scheme. The allocations made under the scheme have been calculated taking into account the CCA targets as revised during 2004, i.e. the allocations reflect the expected emissions if the revised CCA targets are met.

4.1.13 In addition to the fiscal incentives of the CCP, and the market incentives of emissions trading, a programme of action is in place to drive up energy efficiency through the **adoption of best practice**.

4.1.14 The work of the **Carbon Trust** is important in this regard, particularly for SMEs. The Trust has been set up with Government funds to develop independent authoritative advice and assistance on energy saving, including support for low carbon technology and innovation (see box opposite). Its free programmes, by building on existing uptake, can hugely benefit the food industry by helping it to improve energy efficiency in line with the goals of the Energy White Paper.

Services offered by the Carbon Trust

- Energy saving starter materials;
- free energy efficiency surveys (subject to conditions and limited availability);
- telephone helpline offering free advice and publications;
- interest free loans for equipment replacement;
- advice on the Government's Enhanced Capital Allowances scheme for energy saving equipment/investment;
- carbon management services;
- publications;
- interactive website with sector specific advice;
- case studies across a range of organisation types and sizes;
- newsletters for a variety of sectors;
- research, development and demonstration projects;
- technology acceleration projects in high potential low carbon technologies; and
- Venture Capital and Incubator activities.

4.1.15 **Combined Heat and Power** (CHP) is a highly effective way of achieving energy efficiency gains. The food industry's current CHP capacity is good, standing at nearly 404MWe, generating around 1953GWh in 2002 but there is potential for improvement. The economic conditions for investing in plant have been poor in recent years because of high gas prices and low electricity prices. However, the Government remains committed to achieving a national target of 10GWe of good quality CHP by 2010 and set out further support measures in its 2004 CHP Strategy, a Framework for the Support and Growth of CHP. Achievement of the national 10GWe target implies around 1GWe in the food industry.

What more will Government and industry do?

4.1.16 **A review of food industry CCA targets for 2006-2010** alongside other UK industries has recently been completed. It shows that progress is being made under the largest food industry agreement, where the FDF has agreed to a tightening of the existing 2010 target by up to 3%. This is expected to yield additional emission savings of 58,000 tonnes of carbon over predicted 2010 emissions. However, without further action to de-couple, sector growth is likely to cancel out this improvement in terms of actual emissions.

4.1.17 Most other food sector CCA targets have also been tightened by a similar amount so that they remain stretching and contribute in full to the energy efficiency gains necessary to meet the goals set out in the Energy White Paper. However, we need to go further, looking beyond manufacturing activities.

4.1.18 In particular, the food **retail** sector could do more to improve energy use though the **adoption of best practice**. It could achieve energy savings of as much as 20-25% over 10 years, through improved management and maintenance practices, more efficient refrigeration plant, improved lighting systems and integrated heating, ventilation and air conditioning.

From 2002-2003, **Tesco** achieved a 5 per cent like-for-like reduction in energy consumption in its stores. The reduction was achieved through specific energy saving initiatives, such as bakery extract controls, reflex energy saving lamps, and a complete re-commissioning of the refrigeration equipment, as well as through staff training and an awareness campaign. To ensure the energy efficiencies continue, Tesco have developed a real-time management alert system, highlighting increases in consumption, enabling remedial action to be taken promptly.

4.1.19 The sector can draw on the knowledge gleaned from the Government's **Market Transformation Programme** with white goods manufacturers to raise the energy efficiency of refrigeration equipment. The Programme showed that savings of 20% are possible on most product types, with some class leading products using 50% less energy than others in the same category. There is also scope for savings to be made in the **food service** sector, particularly where companies prepare food on their own sites as opposed to third party sites. More also needs to be done to improve the evidence base of energy use by the food retailing and food service sectors.

4.1.20 The Government is consulting on proposals to create a separate EU ETS sector for existing Good Quality CHP and a ring fenced new entrant reserve for new plant. It is also consulting on favourable allocation arrangements for new entrant CHP under the EU ETS scheme relative to non-CHP. In addition, Renewable Obligation Certificates will be extended to include mixed waste plants which use good quality CHP.

A case study at Beefeater (See Annex III) illustrates the benefits of using the opportunities afforded by planned refurbishment projects to implement low cost investment measures such as installing insulation, sensors and timers to reduce energy use in lighting, heating and air conditioning systems; and repairing flush controls in toilets. Implementing these measures as part of the scope of a planned refurbishment means that significant savings in energy and water use can be achieved at very low additional cost.

4.1.21 For the food industry to make its contribution to the UK's national goal of moving towards a 20% reduction in carbon dioxide emissions by 2010, it would need to reduce absolute emissions by 1.6 million tonnes of carbon. It can achieve this through energy efficiency action or through trading in the UK and EU Emissions Trading Schemes. The food and drink manufacturing sector have made good progress in their CCA by reducing emissions by 88,000 tonnes in the first two years of the scheme, and have de-coupled emissions from growth to a certain extent. If they continued with this level of improvement, they would contribute a quarter of the absolute reductions needed from the industry as a whole. There is much less information available for other parts of the industry. We need to build up the evidence base for further action for non-manufacturing sectors of the industry, building on the success of CCAs and lessons learnt on energy management. Government and food industry trade associations are therefore committed to:

- collaborating to establish a firm **evidence base** of existing energy consumption patterns and potential for savings in the food retail and food service sectors;
- agreeing **voluntary energy efficiency targets** beyond areas covered by CCAs;
- developing mechanisms for **monitoring** progress; and
- promoting a programme of industry engagement with the Carbon Trust regarding **energy efficiency best practice**.

A case study at **Marriott Hotel** (see Annex IV) illustrates the benefits of implementing low/no cost investment measures including:

- providing staff training and guidance on green housekeeping measures;
- involving staff in preparing an action plan and assigning champions with responsibility for specific areas; and
- installing energy saving room cards in meeting rooms.

Although the investment costs were minimal, improved energy and water efficiency resulted in a reduction in the utility cost per occupied room of nearly 5%.

Action Point

To contribute its share of the Energy White Paper figures, the food industry is going to need to cut its carbon emissions by 20% from 1990 to 2010. The manufacturing sector has already made good progress in cutting emissions from its use of fossil fuel by 18% between 1990 and 2002, but these reductions have been offset by increasing output leading to an increase in the use of electricity obtained from the electricity generators. The net result is that since 1990 there has been a 9% cut in the carbon emissions from energy as a result of actions taken by the food manufacturers themselves (as opposed to those by the electricity generators) so they and the rest of the food industry will need to redouble their efforts to reach 20% by 2010. New measures are needed by both government and industry to achieve this target but there is as yet no agreement on how this should be pursued. It is agreed that a process of discussion between government and industry is set upon regarding the feasibility of reaching this target, the evidence base and measures needed. To report by winter 2006.

How will we measure progress?

4.1.22 FISS Key Performance Indicators of energy efficiency will initially be:

- total energy use by the food, drink (and tobacco) manufacturing industry;[22]
- energy use per unit of output in the food and drink manufacturing industry;[23]
- total savings of CO_2 under food and drink manufacturing and retail sector CCAs; and[24]
- savings of CO_2 per unit of output under food and drink manufacturing sector CCAs.[25]

4.1.23 These will be extended in respect of the food retailing and service sectors as the evidence base is improved under this strategy and targets for improving energy efficiency are agreed and implemented.

22 Data sourced from energy statistics collected by DTI

23 Data sourced from industry CCA returns already being made to Defra

24 Data sourced from industry CCA returns already being made to Defra

25 Data sourced from industry CCA returns already being made to Defra

Waste

What is the challenge?

4.2.1 Like all manufacturing and retail businesses, the food industry both produces and handles a wide range of wastes.

4.2.2 The food industry, from retailer all the way up the supply chain, faces three particular challenges (coupled with opportunities) for achieving more sustainable waste management:

(i) **Packaging**: the food industry is a major user of packaging (it protects products from damage and contamination and helps avoid wasted product). The industry carries substantial obligations, linked to EU rules, to undertake or to pay for recovery and recycling of packaging wastes;

(ii) **Food industry wastes**: much of the industry's waste is biodegradable waste food and associated by-products for which there is an imperative for disposal away from landfill, where they can generate greenhouse gases, into recycling and composting, for example, where value can be derived; and

(iii) **Influence over household waste**: much of the waste arising in the home starts as food industry products and packaging purchased from the major supermarkets. The food industry is therefore in a unique position to influence household behaviour for the better, through product and packaging design, marketing and other channels of consumer communication; and store-based activity such as waste recycling collection points.

4.2.3 Where known, the quantities involved are also significant. An Environment Agency (EA) survey estimated total industrial and commercial waste arising in England and Wales in 1998/99 to be 75 million tonnes of which the food and drink (& tobacco) manufacturing sector was responsible for 7 million tonnes.

4.2.4 The survey also found that overall 'food waste' across all sectors was 2.6 million tonnes.[26] Of this, 69% was recovered, re-used or recycled; 25% was disposed of to landfill; and the balance mainly sent for treatment.

4.2.5 Paper and card waste from the food and drink (& tobacco) manufacturing sector was 233,000 tonnes, 4% of the national total. However, there are significant gaps in the evidence base (**See Annex II**).

Since 1993 **Nestlé UK Ltd** has saved 18,620 tonnes of packaging across its product range through for example:

- the redesign of Nescafé Instant Coffee portion sachets which saved 17 tonnes of laminate per year; and
- the removal of the inner plastic layer from Kit Kat multipacks saving 160 tonnes of plastic per year.

4.2.6 In sum, **the challenge is for the food industry to reduce the amount of food and packaging waste that is produced each year, both by the industry itself and by consumers of their products, without compromising food safety; and to recycle or otherwise gain value from the waste that does arise.**

What is already happening?

4.2.7 The Government's **Waste Strategy**,[27] published in 2000, sets out the Government's vision for more sustainable waste management and the strategy for managing waste and resources better. This includes statutory:

- targets for achieving reductions in biodegradable waste sent to **landfill**;
- **packaging waste** recycling targets; and
- targets on local authorities for the recycling of **household waste**.

4.2.8 On 14 February 2006, Defra published a consultation on the review of its Waste Strategy.[28] The consultation closes on 9 May 2006. The food industry and other stakeholders will be fully engaged in the development of the revised Waste Strategy, due to be published later in 2006.

4.2.9 A great deal has been done to reduce **landfilling** as a waste disposal option, given the adverse consequences it holds for the environment. The **EU Landfill Directive** represents a step change in this regard. It obliges the UK to reduce landfilling of biodegradable municipal (largely household) waste by two-thirds of its 1995 level by 2020. To help achieve this, statutory targets apply in England to:

- triple local authority recycling and composting of **household waste** by 2005/06;[29] and
- cut **industrial and commercial waste** going to landfill.

26 Some (unquantifiable) food waste is mixed in with packaging and other waste and is recorded in the general industrial and commercial waste stream.

27 http://www.defra.gov.uk/environment/waste/strategy/cm4693/index.htm

28 http://www.defra.gov.uk/environment/waste/strategy/review/index.htm

29 Under the Waste Implementation Programme the Government is investing £90m each year in a recycling fund to incentivise local authorities.

4.2.10 The **landfill tax**[30] also serves as an incentive to waste reduction and recovery. The Government is committed to increasing the rate for active waste by at least £3 each year from 2005/6 until the tax reaches £35 per tonne.[31] These increased revenues from 2005/6 will be returned to business through the Business Resource Efficiency and Waste (BREW) Programme which will help businesses become more efficient and in particular to manage their waste better. Under the programme, additional funding will be given to a range of government bodies including Envirowise, the Carbon Trust and the Market Transformation Programme to build their capacity to support businesses in becoming more resource efficient.

4.2.11 Much has also been done regarding **packaging**[32] and its environmental consequences.

4.2.12 The Producer Responsibility Obligations (Packaging Waste) Regulations 1997[33] implement the recovery and recycling targets in the **EU Directive on Packaging and Packaging Waste** in the UK. Companies obligated under these Regulations, including those in the food industry, are required to:

- register with the EA and submit data on packaging handled by the business;
- recover/recycle target levels of packaging waste each year;
- certify that the necessary recovery and recycling has been carried out; and
- meet consumer information obligations if they sell packaging to the final user or consumer.

4.2.13 The Regulations currently require that by 2008 at least:

- 60% of packaging waste by weight will be **recovered**;
- 55% will be **recycled overall**; and
- 60% of paper and glass, 50% of metals, 22.5% of plastic and 15% of wood will be recycled.

30 Offset when introduced in October 1996 by a cut in employers' NICs

31 The rate for 2004/05 will be £15 per tonne.

32 Packaging, food industry wastes and food industry influence on household wastes are closely related, and regulatory measures frequently address more than one, e.g. action to design out paper and board in consumer packaging impacts both retailers' packaging obligations and the amounts of post-consumer packaging in biodegradable municipal waste

33 As amended, most recently by SI 2003/3294 which came into force on 1 January 2004 and SI 2005/717.

4.2.14 In addition, the **Packaging (Essential Requirements) Regulations 2003** require packaging placed on the market to be the minimum necessary to maintain safety, hygiene and acceptance to the consumer and require packaging to meet recyclability requirements.

4.2.15 In the food manufacturing sector, FDF surveys of its members show that its members are taking a range of actions to reduce the environmental impact of its packaging including:

- redesigning packaging to minimise use of materials;
- reducing secondary and tertiary packaging;
- using different packaging materials to minimise the number of types used and to optimise combinations;
- distributing products in bulk, where practicable and without prejudice to food safety;
- working with suppliers to reduce the impact of packaging;
- undertaking several packaging waste recovery and recycling initiatives;
- using recycled and recyclable packaging materials;
- using lifecycle analysis tools;
- rationalising product ranges to reduce packaging use; and
- increasing staff awareness including staff training.

Hillsdown Holdings Ltd formed its own waste minimisation club to stimulate action in its subsidiary companies based on the experience of independent companies which have come together to share ideas and technology in the subject area. Hillsdown co-ordinated a comprehensive waste minimisation programme. Initial site waste surveys revealed considerable scope for savings, even at sites already active in waste minimisation. Between February 1996 and September 1997, the waste minimisation programme resulted in: Overall annual cost savings of £618,000 (around 70% from no and low-cost measures); overall payback of capital costs of under six months; reductions in water use, effluent production, raw materials use and CO_2 emissions; and approaches applicable to other large groups.

4.2.16 The packaging waste regime provides strong commercial drivers for more sustainable management of the **food industry's own wastes** – namely **waste food**. For example, some national and local charities or initiatives, such as Fareshare, distribute quality surplus food obtained from manufacturers, retailers or through community groups to disadvantaged people. Such initiatives yield not only social but also environmental and economic benefits.

4.2.17 **Waste best practice** in larger installations is encouraged by Integrated Pollution, Prevention and Control (IPPC) which requires installations of the 400 or so food companies (operators) covered by its requirements to be operated in a way that *avoids* waste, using best available techniques. The regulatory regime is particularly rigorous as the EA defines the techniques to be applied. Where waste is unavoidably produced, the regime requires that it is recovered or, if this is technically and economically *impossible*, that it is disposed of while avoiding or reducing environmental impact. IPPC is enforced by the EA.

4.2.18 Best practice is also being encouraged to reduce fast food litter (and waste that becomes litter) in the local environment. **ENCAMS** (Environmental Campaigns) was commissioned by Defra to develop a *Voluntary Code of Best Environmental Practice for the Fast Food Industry*. Launched on 29 October 2004, the Code will allow all parties to work together in a mutually supportive partnership, to find local solutions to local problems.

ENCAMS (Environmental Campaigns) is an environmental charity that aims to achieve litter free and sustainable environments. ENCAMS carries out a variety of research and campaign work aimed at enabling others to deliver on environmental improvements. Its campaign work usually involves national campaigning direct to the public.

ENCAMS' Corporate Objectives are to convince targeted groups to take effective action to enable others to improve, maintain and own their local environments by:

- correctly disposing of material, that could become litter;
- deterring gum deposition;
- deterring graffiti;
- reducing nuisance and abandoned vehicles; and
- reducing the nuisance of neighbourhood noise.

4.2.19 **Household wastes** have also been a target for improvement via the **Waste and Resources Action Programme** (WRAP), a not-for-profit company established by the Government (and devolved administrations) to create stable and efficient markets for recycled materials and products and to remove barriers to waste minimisation, re-use and recycling. Alongside Defra's Waste Implementation Programme, it has been funded to carry out additional activities to help deal, in particular, with municipal (largely household) waste – where most food industry waste currently finishes up. WRAP estimates that 35-40% of biodegradable household waste originates from purchases made from the four major food retailers.

4.2.20 With Government support, WRAP has established a *Retailers Initiative* with major supermarket chains to explore how they might contribute to reducing biodegradable waste from households, through their supply chain relations, marketing and other consumer-facing activity. Under this initiative, WRAP is:

- providing **technical support** to retailers and their suppliers to identify opportunities for reducing the weight of primary packaging, and reducing the cost of production and transportation;
- conducting **research** on ways that primary packaging can be reduced and publishing the results, e.g. research on international best practice in packaging and product design, the findings of which will be made available in the middle of next year; and
- funding retailer-led research, pilots and trials.

As part of its commitment to minimising waste produced, **Tesco** introduced reusable plastic crates, known as green trays, into its distribution chain as an effective and environmentally friendly method of delivering products from suppliers into stores and using them for displaying products in store. The hard-wearing crates, which last an average of 10 years, are continually reused to take the place of secondary product packaging in distribution. In one year alone these trays saved 69,000 tonnes of cardboard packaging.

4.2.21 The benefits for business which are being pursued by this collaboration include:

- reduced packaging, production and transportation costs;
- CSR gains through responsible retailing;
- improved brand perception by consumers;
- showcasing of best practice case studies; and
- reduced compliance costs with packaging waste recycling requirement.

4.2.22 This initiative fits well with WRAP's responsibility for the Government's major consumer awareness campaign *'Recycle – The Possibilities Are Endless'*,[34] which should also help to attune consumers to any supportive messages from retailers, and may over time have some impact on consumers' purchasing behaviour and their expectations of the services to be provided by food retailers.

What more will Government and industry do?

4.2.23 Building on the regulatory and fiscal floor currently in place, the Government and food industry trade associations are committed to working with Government **best practice** programmes to ensure that waste best practice is widely adopted throughout the food industry.

4.2.24 Working alongside WRAP, Envirowise is well placed to spearhead a drive towards best practice waste minimisation in the food industry. Drawing on the additional funding provided under the BREW programme, Envirowise will be expanding the coverage of its services to business including on food waste in the form of:

- **free advice on waste minimisation** and related matters from the Envirowise helpline (0800 585794) and via the website (www.envirowise.gov.uk), access to information, case studies, publications, events, links to waste minimisation clubs and access to site visits;
- development and dissemination of a range of **best practice case studies** relevant to the different sub-sectors of the food industry, to help companies benchmark performance; and
- **free consultancy visits** which food industry companies can access to identify cost effective ways of making savings by reducing, amongst other things, their waste and associated costs.

34 http://www.recyclenow.com/about_recyclenow/the.html

A case study at **Walkers Snack Foods Ltd** (see Annex V) illustrates the benefits of implementing no/low cost investment measures, including:

- greater staff ownership and empowerment leading to more responsible attitude towards waste avoidance/minimisation;
- monitoring and target setting allowing performance to be measured;
- training and appraisal in waste management techniques;
- setting up multi-functional action teams to generate new ideas for reducing costs and improving production efficiency;
- publishing a site newsletter to promote change and publicise achievements in waste minimisation; and
- effective waste segregation allowing more waste to be diverted from landfill.

These measures have resulted in cost savings of over £960,000 since 1997 with an initial payback of about 10 months. Water use has been reduced by 165,000m^3 per year (19% of total); reductions have also been achieved in effluent Chemical Oxygen Demand (COD), along with solid waste to landfill and carbon dioxide emissions (by 1,200 tonnes per year, equivalent to nearly 6% of total). There have also been substantial productivity improvements. The programme is still going strong and generating improvements every year.

4.2.25 Envirowise will use feedback from its promotional campaigns, use of its helpline and website, and site visits – together with regular impact assessments – to closely monitor levels of awareness and use of the Programme and satisfaction with the delivery of its services within the sectors. The feedback will also further inform the development of performance benchmarks.

4.2.26 Government and food industry trade associations are also committed to promoting Envirowise's role with waste expertise to the food industry.

4.2.27 As regards **household waste**, the food industry will work with WRAP to seek mutually beneficial solutions, which contribute to reducing household waste sent for disposal by:

- minimising waste at source, including packaging and food waste;
- encouraging the use of reusable shopping bags; and
- promoting composting and recycling including by upgrading their own recycling facilities.

4.2.28 Defra's Five Year Strategy[35] stresses the need to find new ways to encourage people to recycle more by making it easier for them to integrate recycling into their daily lives. The Department is developing a major new initiative in partnership with retailers and local authorities to enable supermarkets significantly to upgrade and expand the bring-back recycling facilities in their car parks.

35 see p32 of "Delivering the Essentials of Life", Cm6411: http://www.defra.gov.uk/corporate/5year-strategy/5year-strategy.pdf

A Case Study at **Unilever's Purfleet Margarine Factory** (see Annex VI) illustrates the benefits of implementing:

- No/low cost investment measures
  - using continuous improvement techniques to identify product losses and reduce waste;
  - using continuous improvement techniques to identify recycling opportunities to reduce the amount of waste going to landfill; and
  - optimising line change over times to reduce waste.
- Higher investment measures
  - installing product recovery tanks to prevent material going to waste during line changes; and
  - working with suppliers to design re-usable cartons for transporting sales packaging.

These measures have reduced waste generation from 740 tonnes in 1999 to 409 tonnes in 2003, provided product cost savings in excess of £1m per year and packaging savings of £350,000 per year.

4.2.29 In parallel, WRAP will be working with retailers, local authorities and waste management companies to pilot and test innovative approaches to recycling at supermarkets, including new technologies. WRAP has allocated £1.45m to this Front of Store research since it began in March 2005.

4.2.30 With an eye to possible **future regulatory provisions**, there may be a proposal for a second phase of the review of the EU Packaging Directive which might look at prevention of packaging waste, re-use of packaging and the introduction of a specific reference to producer responsibility. In consideration of this, the Government has commissioned research on the potential costs and benefits of deposit and return systems (whether for reuse or recycling) in other EU Member States, to see whether there are lessons for future practice here.

4.2.31 Under the Courtauld commitment, launched at the Courtauld Institute on the 26 July 2005, Asda, Boots, Budgens, the Co-operative Group, Londis, Iceland, Kwik Save, Marks & Spencer, Morrison's, Sainsbury's, Somerfield, Tesco and Waitrose have pledged at executive level to support WRAP in achieving its objectives:

- to design out packaging waste growth by 2008;
- to deliver absolute reductions in packaging waste by 2010; and
- to identify ways to tackle the problem of food waste.

How will we measure progress?

4.2.32 In line with the challenge of reducing the amount of food and packaging waste that is produced each year, both by the industry itself and by consumers of their products, without compromising food safety; and to recycle or otherwise gain value from the waste that does arise, **FISS Key Performance Indicators of waste efficiency will initially be**:

- levels of waste arising in the food and drink (& tobacco) manufacturing industry;
- levels of "food waste" across all sectors of the food industry;
- food industry progress against recycling targets; and
- take-up of free consultancy visits available from Envirowise to the food industry in each of the next three years.

Action Point

The food industry needs to contribute to sustainable waste management through:

- continuing to play its full part in the domestic packaging regime;
- reducing the food manufacturing industry's own wastes by 15-20% by 2010;
- contributing constructively to Defra's and WRAP's work with retailers and the food industry in relation to consumer information and behaviour, supermarket recycling, and product and packaging design.

A process of discussion between Government and industry will be instituted to determine the most effective way to carry through these objectives, including the establishment of better base data. This will report by early 2007.

Water

What is the challenge?

4.3.1 The food industry in England and Wales is estimated to use 430 megalitres per day from the public water supply (10% of industrial use). It is also estimated to make direct abstractions of 260 mega litres of water per day (about 10% of the total abstracted). As such, the sector contributes significantly to the demand being placed upon water resources, which can affect local habitats and water quality. Additionally, with climate change and demographic changes leading to higher household demand for water, current industry entitlements may become tighter in the future.

A Case Study at **J.W. Lees & Co. (Brewers) Ltd** (see Annex VII) illustrates the benefits of implementing:

- No/low cost investment measures
  - installing meters to measure and manage water consumption, enabling rapid response to maintenance issues;
  - improving operating and cleaning procedures to reduce water use; and
  - fitting new float-operated valves to reduce water usage and effluent disposal.
- Higher investment measures
  - installing accurate filling technology to reduce product wastage and reduce effluent; and
  - installing new cask washing equipment with high efficiency nozzles.

These measures have resulted in reduced water and trade effluent charges of £99,000/year and savings of £12,000/year by reducing beer losses. More savings are expected to follow as attention is focused on other production areas.

4.3.2 **The challenge for the food industry is to reduce its current levels of demand for water – at all stages of the supply chain – by improving efficiency through the adoption of best practice – without compromising food hygiene.**

What is already happening?

4.3.3 The EA manages water resources in England and Wales. This includes **regulating water abstraction** from sources of supply through a system of water abstraction licensing. Following the Government's review of the abstraction licensing system in 1999, the EA have begun to develop Catchment Abstraction Management Strategies (CAMS) across England and Wales. CAMS provide a consistent approach to local water resources management, recognising the needs of water users and the environment. In the future, CAMS will be a mechanism for the EA to re-allocate water resources where necessary.

4.3.4 The Water Supply (Water Fittings) Regulations 1999 prevent the contamination, waste and undue consumption of the **public water supply** and set minimum water use standards for certain fittings, such as WCs, within premises.

Walkers Snack Food Ltd has invested £750,000 in a state of the art plant for the improved treatment and re-circulation of process water to serve its two Leicester-based crisp manufacturing factories. The plant can handle 200 cubic metres an hour and has had the sustained effect of reducing overall water usage by 33% whilst more than doubling the recovered tonnage of starch by-product for animal feed with a commensurate reduction in eventual effluent loading.

4.3.5 In addition to regulation, the **Enhanced Capital Allowances** (ECA) scheme for water provides a fiscal incentive to encourage water resource efficiency. This is provided as tax relief for investments in sustainable water use technologies. Eligible products are published on-line in the Water Technology List and include monitoring, control and other technologies that help minimise water use.[36]

4.3.6 FDF member surveys show that **food industry manufacturers** have projects in place to reduce water consumption and recover or recycle water. These include:

- implementing management programmes: metering and monitoring;
- modifying cleaning and housekeeping routines;
- modifying design of equipment and processing;
- using sensor controlled taps and auto-flush toilets;
- using hand controlled triggers on hoses; and
- increasing staff awareness.

36 Details can be obtained from the website: www.eca-water.gov.uk

A case study at **Whitbread** (see Annex VIII) illustrates the benefits of implementing the following no/low cost investment measures:

- establishing model profiles to identify areas of potential over-consumption of water and energy;
- assessing the accuracy of utility bills to ensure correct billing; and
- installing new meters and providing independent metering of gas and water to enable better targeted and more successful efficiency programmes.

These measures resulted in a reduction in energy costs across the total group of over £3.0m in the first year, including savings of £1.0m as a result of re-negotiation of group tariffs and over £1.2m claimed back through incorrect billing. Reduction in water loss through leakage and wastage resulted in savings of £0.4m during the year.

4.3.7 However, **best practice** is not widely adopted across the food industry as a whole and not to the extent necessary to optimise the sector's water use. The Government's resource efficiency programme, **Envirowise,** is well placed to help the food industry realise this goal. It raises awareness and offers practical advice to businesses including guidance on the efficient use of water. Businesses can use on-line resources via *WaterNet*,[37] for example, which provide access to a library of water use minimisation information, and a benchmarking tool (Water Account). Access is also provided to the *Effluent Online Club*, which covers all aspects of effluent management from source to treatment.[38]

4.3.8 Potential financial savings, coupled with the environmental benefits, provide a significant incentive for businesses to monitor and reduce water consumption. It is generally the case, across a range of different industries, that simple and inexpensive **water minimisation measures** such as identifying and repairing leaks promptly, adopting water saving practices and installing water efficient technologies can typically reduce companies' water consumption and water costs by up to half.

4.3.9 Food and drink companies are already making significant environmental improvements and doing so in such a way that they achieve business benefits, in particular cost savings. In the "wet processing" operations such as fish processing, dairies and brewing case studies have shown that that reductions in water consumption of between 20% and 50% can be achieved. **Monitoring** water use is also fundamental to establishing a culture of good water management and is essential to enable the scope for reducing consumption to be identified.

37 http://www.envirowise.gov.uk/page.aspx?o=163473

38 http://www.envirowise.gov.uk/page.aspx?o=163475

What more will Government and industry do?

4.3.10 The Government will keep the **ECA scheme for water** under review to ensure the Water Technology List remains dynamic and encourages the use of technologies that assist water conservation.

A case study at **Bourne Salads (Geest plc)** (see Annex IX) illustrates the benefits of implementing the following higher investment measures:

- installing advanced technology wastewater treatment and water recycling plant in order to ensure continued compliance with discharge consent limits; and
- measures to reduce mains water use and trade effluent charges.

The investment measures have reduced mains water use by 45%, resulting in overall financial savings in water and trade effluent charges of £253,000/year.

4.3.11 It will also continue to work to improve the **water abstraction** licensing system to enable more sustainable management of water resources. The Water Act 2003 includes stronger powers for the EA to act against abstractions causing serious environmental damage and will help to foster greater environmental awareness among abstractors. All new abstraction licences will be time-limited and, on renewal, consideration will be given to water efficiency. It would, therefore, be prudent and responsible of the food industry to improve efficiency at this stage.

4.3.12 **Data** on the food industry's current water use is at present patchy and needs to be improved to inform better policy and business decisions. The Government and food industry trade associations are, therefore, committed to developing a more comprehensive data set, identifying current levels of demand by key food industry sub-sectors. This will serve as a baseline of water use to enable benchmarking to promote best practice and determine the extent of improvements in water efficiency.

4.3.13 Improved water efficiency in the food industry can be achieved through widespread adoption of **best practice**, including monitoring.

4.3.14 As part of its drive to encourage water efficiency, Government is providing **Envirowise** with additional funding from the BREW programme.

A case study at **Taw Valley Creamery** (see Annex X) illustrates the benefits of implementing the following higher investment measures:

- installing a turbidity probe and training staff in its use, which has resulted in reduced product losses from an evaporator Cleaning in Place (CIP) system and lower effluent treatment costs; and
- installing a conductivity probe to reduce the amount of water and CIP detergent going to drain, as well as equipment downtime.

These measures have resulted in reduced water, effluent and chemical costs, savings of over £29,000 per year, increased product yield and improved plant utilisation.

4.3.15 Envirowise's services include:

- **free advice** on waste minimisation and related matters from the Envirowise **helpline** (0800 585794) and via the website, access to information, case studies, publications, events, links to waste minimisation clubs and access to site visits;
- development and dissemination of a range of **best practice case studies** relevant to the different sub-sectors of the food industry, to help companies benchmark performance; and
- **free consultancy visits** which food industry companies can access to identify cost-effective ways of making savings by reducing, amongst other things, their water use and water bills.

4.3.16 In support of this, the Government and food industry trade associations are committed to working with Envirowise to raise the profile of its best practice services and to encourage industry uptake. This may take the form of stands at industry conferences, bespoke events or, for example, the provision of information on trade association websites.

Action Point

To adjust to pressures on supplies of water and to bear its share of the reduction in water use, the industry as a whole needs to reduce its use of water by 10 – 15% by 2020 and by 20 – 25% in the South East. This requires long-term change in production methods whilst preserving essential food hygiene and safety. It is agreed that a process of discussion between Government and industry should be instituted on the feasibility of these targets and to identify means of achieving them. To report by spring 2007.

How will we measure progress?

4.3.17 Initial **FISS Key Performance Indicators of water efficiency will be**:

- The establishment of a baseline of water use for each food industry sub-sector (encompassing water use throughout the food supply chain); and
- take-up of free consultancy visits available from Envirowise to the food industry in each of the next three years.

A Case Study at the **Burton Marmite Factory** (see Annex XI) illustrates the benefits of implementing:

- No/low cost investment measures
  - staff training/awareness raising on water minimisation and avoidance of spillages; and
  - fitting of trigger nozzles to avoid water over use and the removal of hoses from some production areas as part of a waste avoidance drive.
- Higher investment measures
  - reducing water use by diverting blow down water from cooling towers to supply the pump seals in another part of the process; and
  - reducing water use and effluent by reusing condensate water for rinsing operations.

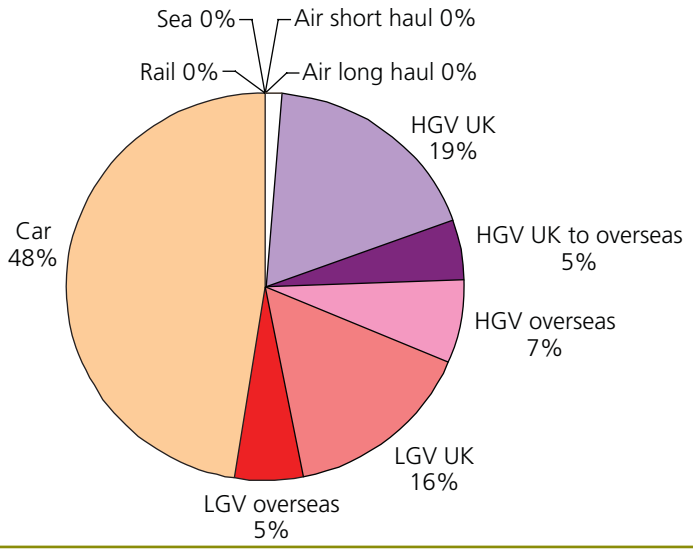
These and other factory initiatives have resulted in a 43% reduction of effluent COD loading, 10% reduction in water consumption from 2001 to 2003, and cost savings of £56,000 per year.

Food Transportation

4.4.1 The 'food miles' or, more accurately, the 'food transportation' debate is concerned with the environmental and social costs associated (but not included in the price of) transporting food from where it is produced to where it is processed, to the wholesaler, to the retailer or catering outlet and to the consumer. Concern has been fuelled by dramatic changes in the last fifty years in the food supply chain, most notably:

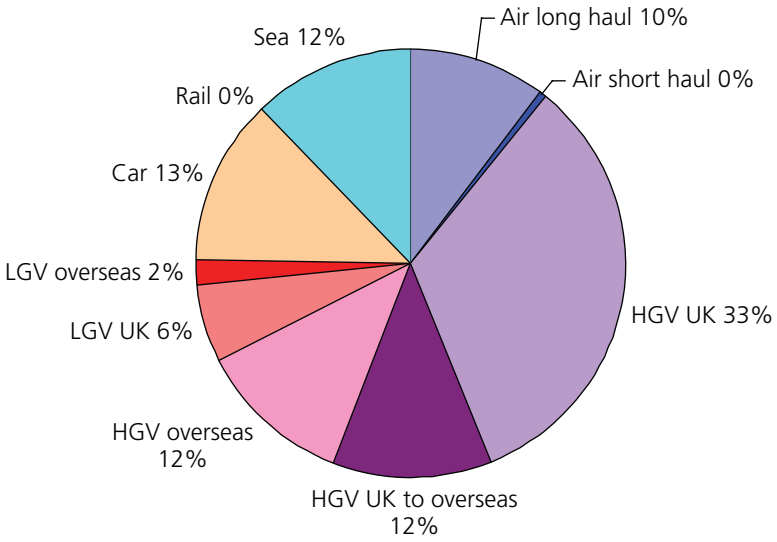
- Globalisation of the food supply base;
- Major changes in national food distribution patterns with the development of supermarket regional distribution centres, coupled with a trend towards use of larger Heavy Goods Vehicles (HGVs); and
- Reductions in shopping frequency, in line with development of out of town supermarkets and increased shopping trips by car.

Chart 5: UK food vehicle-kilometres by transport mode (2002)



4.4.2 In addition, it is argued that consumers have not had access to adequate consumer information about the origins of the food they buy, how far it has travelled and the wider environmental and social impacts of food production, processing and transport, so that they can make more sustainable choices.

Chart 6: CO_2 emissions associated with UK food transport (2002)



4.4.3 Research was commissioned by Defra from AEA Technology on the validity of food miles as an indicator of sustainability. The report[39], published on 15 July 2005, shows that since 1978 the annual amount of food moved in the UK by HGVs has increased by 23%. In addition, the average distance for each trip has increased by over 50%. Its key findings are:

- **Data quality is adequate to provide a "food miles" dataset on an annual basis**. The key transport stages are covered by DfT and HM Customs and Excise annual statistics.
- **"Food miles" are significant and growing**. They accounted for 33 billion vehicle kilometres[40] in 2002, of which 82% occurred in the UK. Air freight of food accounts for only 0.1% of the vehicle kilometres and 1% of the food miles tonne kilometres.[41]
- **"Food miles" are a significant source of CO_2 emissions**. They gave rise to around 20 million tonnes of CO_2 emissions in 2002, of which 10 million tonnes were emitted in the UK and the remainder overseas. They account for 1.8% of the total annual UK CO_2 emissions.
- **"Food air miles" have the highest relative CO_2 emissions and are the fastest growing mode of transport**. Air freight accounts for 10% of the food miles CO_2 equivalent emissions.

39 Wise Moves – Exploring the relationship between food, transport and CO_2, published by The Transport 2000 Trust in November 2003. http://www.transport2000.org.uk/news/maintainNewsArticles.asp?NewsArticleID=141

40 Vehicle kilometres are the sum of the distances travelled by each vehicle carrying food.

41 Tonne-kilometres are the distance travelled in kilometres multiplied by the weight in tonnes for each foodstuff being transported.

- **The environmental, social and economic costs of "food miles" are very large**. The external costs of greenhouse gas emissions, air pollution, noise, congestion, accidents and infrastructure associated with food miles are estimated at just over £9 billion pounds each year (see Table 1), though considerable uncertainty is attached to this value.
- **The relationship between the distance travelled by food and the associated external costs is often extremely weak**. For example, Table 1 shows that well over 50% of the total external costs associated with the transportation of food arise from domestic congestion. By contrast, the transportation of imported agricultural produce by sea accounts for only a fraction of total external costs.

4.4.4 A survey funded by the Department for Transport (DfT) through Freight Best Practice in 2002, with the Cold Storage Distribution Federation, shows that transport logistics offer plenty of scope for improvement. For example, it found that 20% of vehicle-kilometres were run without a load. Whilst laden, on average only about 70% of vehicle deck areas were used which gave an overall deck utilisation of only 56%.

4.4.5 **The challenge is to provide efficient distribution of food and drink to consumers that takes due account of the associated environmental and, social impacts** (in terms of land use, climate change, air quality, congestion, mobility, noise and waste) **across the life cycle of the produce**.

Table 1

£M	CO_2	Air quality	Noise	Congestion	Accidents	Infrastructure	Total costs
UK HGV	120	165	123	1359	327	387	2480
UK LGV	21	48	27	1056	148	4	1303
UK car	46	24	42	2576	965	9	3662
UK to overseas road	43	54	39	52	115	141	443
Overseas HGV	42	58	43	90	304	272	809
Overseas LGV	7	18	9	54	147	3	239
Rail	0	15	0	0	0	0	16
Deep sea	43	32	0	0	26	nq	106
Short sea	3	22	0	0	3	nq	32
Air long haul	38	1	nq	nq	nq	nq	39
Air short haul	2	0	nq	nq	nq	nq	2
Total	**364**	**439**	**283**	**5187**	**2036**	**815**	**9123**

What is already happening?

4.4.6 Bearing in mind the complexity of the food transportation debate, Defra, DfT and business have contributed to the Wise Moves project, run by Transport 2000. In addition, Defra commissioned AEA Technology's research on food miles.

4.4.7 **AEA Technology's report** shows that UK domestic food transportation in 2002 accounted for 82% of UK food chain related **vehicle kilometres**, the balance arising overseas. Of this, 24% is attributed to Light Goods Vehicle (LGVs), 22% to Heavy Goods Vehicles (HGVs) and 54% to cars used on food shopping trips.

4.4.8 The amount of **carbon emissions** attributed to this activity is 10m tonnes, about 1.8% of all UK emissions. Of that tonnage, 62% is attributed to HGVs, 23% to cars and 15% to LGVs. Reducing carbon emissions is a key part of the food transportation debate.

4.4.9 **Transport 2000's research**, which investigated the various stages in the food supply chain where greenhouse gas emissions are generated, concluded that a **lower carbon food system** would have the following features:

- use of seasonal and indigenous produce, in preference to non-indigenous foods or those imported out of season;
- 'local clustering' – inputs to the product in question would be situated near to the site of production;
- efficient operation and management of processing plant;
- least use of temperature-controlled storage (compatible with food safety standards);
- minimised distances from point of production to point of consumption; and
- logistical efficiency (fuel efficiency, consolidation of loads, maximum vehicle fill).

4.4.10 The research stresses the contribution that **consumers** can make to achieving sustainable food production though their purchasing decisions.

4.4.11 It suggests that **shorter supply chains**, provided they remain logistically efficient, can cut transport emissions considerably. However, it also recognises that the advantages of reducing mileage need to be balanced against possible increases in other emissions across the product life-cycle. There are instances where food from nearby sources (e.g. grown in hot-houses) will actually have been produced in a more energy-intensive way.

4.4.12 The food industry is pursuing a range of initiatives to improve **vehicle fleet utilisation and efficiency**. These include:

- collaboration between operators to improve utilisation of vehicles;
- 'back-hauling' of products, packaging and waste, so that vehicles are kept loaded for all legs of their journey;
- using 'telematics' to optimise vehicle routing;
- improving overall vehicle-full rates (e.g. using double deck trailers); and
- scheduling for real-time control.

4.4.13 The Cold Storage Distribution Federation ran until March 2004 a scheme, sponsored by DfT, to provide advice on improving **vehicle fuel consumption** and developing a 'fuel culture' with distribution companies. The research programme that supports the **DfT's Sustainable Distribution Strategy** also encourages industry take-up of best practice in logistics.

4.4.14 In addition, Defra has also helped finance workshops organised by the IGD, designed to bring together supermarkets and small **local producers** to explore how barriers to local sourcing can be overcome. Defra has also funded the IGD to produce a guide to local sourcing.[42]

4.4.15 The Government is also pursuing carbon savings through the kick-start support of biofuels development by:

- a 20p per litre differential in duty rate from January 2005 to help promote the production of bioethanol – following a July 2002 20p cut for biodiesel;
- announcing the Renewable Transport Fuel Obligation;
- a feasibility study on an accreditation and certification scheme on carbon savings/sustainable production; and
- consideration of enhanced capital allowances to biofuel processing plants.

4.4.16 In addition, action on the UK's 2005 and 2010 targets for the EU Biofuels Directive should help stimulate the biofuels industry.

42 *Local Sourcing – growing rural business,* published 12 November 2001. May be obtained through the IGD website at: http://www.igd.com/cir.asp?cirid=787&search=1

What more will Government and industry do?

4.4.17 **Best Practice** is at the heart of reducing the negative externalities associated with food transportation. **Freight Best Practice**, funded by DfT, provides authoritative, independent information and advice to help implement sustainable transport initiatives. It disseminates information through publications, videos and software, together with seminars, workshops and other events. It has published a benchmarking guide, '*Key Performance Indicators for the Food Supply Chain'*, which it is promoting to the industry. This tool can help companies maximise their operational efficiency, reducing both their running costs and their environmental impact – but it needs to be widely adopted. All food industry trade bodies can make a real difference by raising the profile of the best practice guide and encouraging its use by their members – and are committed to doing so.

4.4.18 **Food retailers** have a crucial part to play in helping to reduce the negative externalities associated with food transportation. This strategy relies upon them:

- continuing the drive on **efficiency and logistics**, also reducing journey lengths wherever possible – but balanced by life-cycle judgements about the overall energy impacts of the alternatives; and
- helping to **re-build the market for locally-sourced produce** by ensuring that their buying teams are aware of the opportunities for working with local food producers. Potential suppliers may well need assistance in getting to grips with the quality, consistency and volume requirements of supermarkets. In addition, consumers may need encouragement, e.g. by tasting opportunities, to see the benefits of locally-produced food. Crucially, retailers need to demonstrate their commitment to locally-sourced produce by making shelf space available.

Action Point

A reduction in the level of environmental and social costs associated with the domestic transportation of food would generate carbon savings and other benefits. Building on the logistical improvements of the last decade, a process will be set up with industry to consider the practical implications associated with it securing significant reductions (say, 20% by 2012) in the level of external costs associated with the domestic transportation of food. To report back to Ministers by winter 2006.

4.4.19 It is clear that more robust methods are needed for determining emissions across the whole life cycle of particular foodstuffs – so that the judgments about the best transport option can be taken in the knowledge of the overall impacts of the product. The **life cycle analyses** referred to in Chapter 2 will be a crucial part of the process. Coupled with related commitments on information provision, this will allow consumers to take fuller account of issues associated with food transportation in their purchasing decisions – and, in turn, help the move towards long term sustainability throughout the domestic and imported parts of food chain.

4.4.20 In order to help increase consumer awareness of the origin of foods, the Government will press for EU labelling rules to be changed to extend origin marking.

How will we measure progress?

4.4.21 In line with the challenge to provide efficient distribution of food and drink to consumers while contributing to the best outcome of environmental impacts across the lifecycle of the produce, **FISS Key Performance Indicators for food transportation** will be:

- DfT's benchmarking studies on food distribution, for which the 2002 survey assessed performance against five indicators:
  i. vehicle fill;
  ii. empty running;
  iii. time utilisation;
  iv. deviations from schedule; and
  v. fuel consumption.
- Four indicators to be constructed by Defra in the light of AEA Technology research covering:
  i. urban vehicle kilometres (as the main driver of congestion and accidents), split by car/LGV/HGV;
  ii. CO_2 emissions from traffic (as the most prominent green-house gas);
  iii. air transport of food (although currently unimportant, the fastest growing category); and
  iv. HGV vehicle and tonne kilometres for congestion and transport efficiency.

Chapter 5: Primarily Social

Nutrition and Health

What is the challenge?

5.1.1 The food we eat, and the way it is produced and manufactured, has a significant impact on the health of the nation. Good nutrition is vital to good health. While many people in England eat well a large number do not, particularly among the more disadvantaged and vulnerable in society. In particular, a significant proportion of the population consume less than the recommended amount of fruit and vegetables and fibre but more than the recommended amount of fat, saturated fat, salt and sugar.

5.1.2 Such poor nutrition is a major cause of ill health and premature death in England. Cancer and cardiovascular disease, including heart disease and stroke, are the major causes of death in England, accounting together for almost 60% of premature deaths. About one third of cancers can be attributed to poor diet and nutrition.

5.1.3 Unhealthy diets, along with physical inactivity, have also contributed to the growth of obesity. 22% of men and 23% of women in England are now obese, a trebling since the 1980s, and 65% of men and 56% of women – 24 million adults – are either overweight or obese. It is a growing problem with children and young people too. Around 16% of 2 to 15 year olds are now obese. Obesity brings its own health problems, including hypertension, heart disease and type 2 diabetes. Obesity is responsible for an estimated 9,000 premature deaths per year in England. It is estimated that the treatment of ill health from poor diet costs the National Health Service (NHS) at least £4 billion each year.

5.1.4 There are many inequalities in nutrition and health that need to be addressed. For example, consumption of fruit and vegetables varies markedly between socio-economic groups. 27% of men and 33% of women in the managerial and professional groups consume the recommended five portions per day compared to 16% of men and 17% of women in routine and semi-routine occupations.

5.1.5 Improving food and nutrition for the population of England requires coordinated action to be taken by Government, the food industry, local authorities, primary care trusts, voluntary organisations, local communities, regional government and policy-makers. **The challenge for the food and drink manufacturing industry is to work in partnership with Government and other stakeholders, over the coming years, to help bring about lasting improvements to the nutrition and health of the people of England.**

What is already happening?

5.1.6 The **NHS Plan** of 2000,[43] which set out a plan for reform for the service, identified action for improvements in diet and nutrition as a central component of the Government's strategy to prevent deaths from heart disease and cancers and to help tackle health inequalities. The NHS Improvement Plan of 2004,[44] which set out the priorities for the next four years, reiterated that commitment to improving diet and nutrition, with a focus on obesity.

5.1.7 In November 2004, the Government published '*Choosing Health, Making healthy choices easier*',[45] the White Paper on public health. It set out how the Government will make it easier for people to make healthier choices by offering them practical help to adopt healthier lifestyles. '*Choosing Health*' laid out a challenging programme of practical action aimed at saving thousands of lives in years to come. The priorities identified include tackling obesity, especially in children, improving diet and nutrition and increasing physical activity. '*Choosing Health*' is underpinned by three key principles:

(i) informed choice for all, acknowledging that people want the freedom to make decisions about their own health;

(ii) personalisation of support to make healthier choices; and

(iii) working in partnerships to make health everyone's business, since Government and individuals alone cannot make progress alone.

5.1.8 In March 2005, the Government published '*Delivering Choosing Health: making healthier choices*';[46] '*Choosing a Better Diet: a food and health action plan*';[47] and '*Choosing Activity: a physical activity action plan*'.[48] These plans outline actions to deliver the White Paper commitments alongside delivery of the Government's Public Service Agreement targets for health improvement.

43 http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4002960&chk=07GL5R

44 http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4084476&chk=i6LSYm

45 http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4094550&chk=aN5Cor

46 http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4105355&chk=gFTjxL

47 http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/HealthyLiving/FoodAndHealthActionPlan/fs/en

48 http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4105354&chk=ixYz2B

5.1.9 '*Choosing a Better Diet: a food and health action plan'* brings together, in one place, action to meet all the commitments relating to food and nutrition in the White Paper, as well as further activity across Government to encourage healthy eating. It links action to the Strategy for Sustainable Farming and Food and the FISS. It provides details on the action that needs to be taken at national, regional and local level to improve people's health through improved diet and nutrition. The action that the Government will take across a wide range of areas are:

- encouraging healthy eating in a consumer society and considering how information can be improved and how industry can help to enable healthier choices;
- encouraging healthy eating behaviours in children and young people;
- promoting opportunities for healthy eating in the communities where we live;
- ensuring that the NHS promotes healthy eating in all aspects of its work;
- promoting opportunities for healthy eating in the workplace and ensuring the public sector leads by example; and
- reducing health inequalities by supporting low-income and disadvantaged families to eat healthily.

What more will Government and industry do?

5.1.10 The food industry is central to delivering many of the White Paper's commitments. Many of the actions set out, therefore, require close collaboration between Government and the industry for instance in delivering the Government's Food and Health Action Plan. Competition between retailers to supply consumer demand has delivered a broad and growing range of healthy own-brand products, backed by more information and advice for consumers. However, more remains to be done. As set out in the White Paper and '*Choosing a Better Diet'*, the Government wants to work better with industry, including other partners, on the following areas, some of which overlap with existing industry commitments (see box on page 60):

- to agree a clear and simple set of healthy eating messages, building on existing campaigns such as *5 A DAY* and the Food Standards Agency's salt awareness campaign,[50] exploring with industry how it might contribute to promoting positive health information and education;
- increasing the **availability of healthier food**, including continuing to reduce the levels of salt, added sugars and fat in prepared and processed food and drink and increasing access to fruit and vegetables through the 5 A DAY Programme;

50 http://www.salt.gov.uk/

- adopting consistent and clear standards for information on food, including **signposting**, to enable consumers to see at a glance which foods can make a positive contribution to a healthy diet, and which are recommended to be eaten only in moderation or sparingly. This will be based on a set of nutritional criteria for salt, fat and sugar levels;
- the criteria for use of the 5 A DAY logo will be extended to processed foods and to foods targeted at children;
- category specific targets on salt as well as long term and interim **targets for reducing sugar and fat** levels in different categories of foods, with monitoring of progress through regular surveys;
- the development of guidance on **portion sizes** to help industry help consumers to reduce fat, sugar and salt intake and reverse trend towards bigger food and drink portion sizes; and
- developing a **voluntary social responsibility scheme for alcohol** producers and retailers to protect young people by:
  - placing consumer information on alcohol containers and in alcohol retail outlets;
  - including reminders about sensible drinking on alcohol advertisements;
  - checking identification and avoiding inadvertently selling alcohol to people under 18 years of age; and
  - increased awareness through a national communications campaign to reduce binge drinking.

FDF's Food and Health Manifesto published in September 2004, set out the UK food and drink manufacturing industry's commitment to:

- working constructively with Government and other stakeholders to ensure the availability of **clearer nutritional information** under revised EU provisions;
- continuing to **reduce levels of sugar, fat and salt in products** and providing lower salt, lower sugar and lower fat options where technologically possible, safe and acceptable to consumers;
- exploring new approaches for individual **portion sizes** to help reduce over-consumption;
- removing all **vending machines** from primary schools unless their provision is specifically requested by the school/LEA; removing branding from vending machines in primary and secondary schools where this is requested by the school/LEA; broadening choice;
- working with Ofcom and Government on further tightening of self-regulatory codes, and discussing with Ofcom and Government the whole range of concerns relating to **advertising to children**;
- establishing and **promoting healthy workplace schemes on diet and lifestyle** in premises belonging to companies in the food chain and within their communities; and
- participating together with the rest of the food chain and advertising industries, in a Government led **campaign of public education on healthy eating and healthy lifestyles**. For example, through delivering messages on product packaging.

5.1.11 The Government is also committed to restricting further the **advertising and promotion to children** of those foods and drinks that are high in fat, sugar and salt. To have maximum effect, action needs to be comprehensive and taken in relation to all forms of food advertising and promotion including:

- broadcast;
- non-broadcast;
- sponsorship and brand-sharing;
- point of sale advertising, including vending in schools; and
- labels, wrappers and packaging.

5.1.12 The Government will look to Ofcom to consult on proposals to tighten the rules on broadcast advertising, sponsorship and promotions of food and drink, and to secure effective implementation by broadcasters to ensure children are properly protected from encouragement to eat too many foods high in fat, salt and sugar.

5.1.13 The Government will also encourage new measures to strengthen existing voluntary codes in non-broadcast areas and has established a new Food and Drink Advertising and Promotion Forum to review, supplement, strengthen and bring together existing provisions.

5.1.14 The Government will monitor the success of these measures and assess their impact in relation to the balance of food and drink advertising and promotion to children and children's food preferences. If, by early 2007, they have failed to produce change in the nature and balance of food promotion, Government is committed to taking action through existing powers or new legislation to implement a clearly defined framework for regulating the promotion of food to children.

5.1.15 Actions to improve the diet and nutrition for infants and children include:

- Healthy Start vouchers which can be exchanged for milk as well as fruit and vegetables;
- revision of primary and secondary school meal standards and strong consideration of the inclusion of nutrient-based standards;
- extension of these standards to all foods provided in schools, including vending machines (subject to legislation);
- setting specifications for processed foods;
- Ofsted consider school food as part of inspections;
- a package of guidance and resources (Food in Schools toolkit) is now available to support schools in taking the whole school approach to healthy eating;

- Healthy eating, now a core part of the Healthy Schools Programme;
- help for all schools to become healthy schools by promoting best practice through the Food in Schools Toolkit;
- issuing guidance for head teachers and governors on food procurement;
- introducing training for catering staff;
- a new School Food Trust to provide independent advice and support to schools; and
- following evaluation, consideration of an extension of the School Fruit and Vegetable Scheme to LEA-maintained standalone nurseries.

5.1.16 The Government is committed to developing good practice across the public and private sectors to improve the health of employees and the wider community. It will set up a new working group to develop and establish nutritional standards for all food procured by the NHS, Armed Forces and HM Prisons. The group will include Defra to make the link to the Public Sector Food Procurement Initiative and the Food Procurement Implementation Group.

Action Point

The objective is to:

- increase average consumption of fruit and vegetables to at least 5 portions a day (currently 2.8 portions a day);
- increase the average intake of dietary fibre to 18 grams per day (currently 13.8 grams per day);
- reduce average salt intake to 6 grams per day (currently 9.5 grams per day) by 2010;
- reduce average intake of saturated fat to 11% of food energy (currently at 13.3%);
- maintain the current trends in reducing average intake of total fat to 35% of food energy (currently at 35.3%); and
- reduce the average intake of added sugar to 11% of food energy (currently 12.7%).

How will we measure progress?

5.1.17 '*Choosing a Better Diet*' sets out more fully how we will monitor and evaluate the impact of actions to improve diet and nutrition through a range of measures and indicators of the average consumption, across socio-economic and demographic groups in the population for fruit and vegetables, dietary fibre, salt, total and saturated fat and added sugar (non milk extrinsic sugars).

5.1.18 Existing surveys will be used to measure progress, including the FSA/DH National Diet and Nutrition Survey[51] programme; the DH Health Survey for England;[52] the Defra Expenditure and Food Survey[53] and, in addition, the FSA has commissioned a low income Diet and Nutrition Survey. There are also surveys that will track prevalence in obesity and infant feeding.

51 http://www.food.gov.uk/science/101717/ndnsdocuments/

52 http://www.dh.gov.uk/PublicationsAndStatistics/PublishedSurvey/HealthSurveyForEngland/fs/en

53 http://www.statistics.gov.uk/ssd/surveys/expenditure_food_survey.asp

Food Safety

What is the challenge?

5.2.1 Foodborne illness ('food poisoning') is a significant cause of ill health arising from a range of pathogenic micro-organisms. Food poisoning may cause serious illness or worse. It is estimated that in 2003 there were over three quarters of a million cases in England and Wales.[54] In addition, 450 people are estimated to have died that year from foodborne disease. Physical, chemical and radiological contaminants can also pose risks to consumers, as can zoonoses and animal pathogens.

5.2.2 **Maintaining and enhancing public trust and confidence in the safety of the food supply is fundamental to this strategy and the chief priority for industry and the Government.**

What is already happening?

5.2.3 Efforts to maintain and enhance public trust and confidence in the safety of food are **first and foremost the responsibility of the food industry**. All parts of the food chain have a responsibility to ensure that the food and feed they sell (whether UK-produced or imported) is free from illegal or unsafe levels of contaminants, be they microbiological, chemical, radiological or physical. The food industry handles and processes food as it moves through the food chain to the final consumer. The industry's responsibility is underscored in EU and domestic food safety legislation, which establishes the framework of controls in which the food industry operates. The controls are designed to be proportionate, providing necessary protection and control without impeding a responsible industry or unnecessarily constraining consumer choice. Good systems of food and drink traceability are an essential part of this.

5.2.4 The **Food Standards Agency (FSA)** is working with industry and others to reduce the occurrence of food contamination throughout the food chain, whatever its source, starting with primary production. This work includes identifying and promoting best practice, such as modern approaches for identifying and controlling food safety risks, e.g. Hazard Analysis and Critical Control Points (HACCP).

5.2.5 The FSA also works with relevant **enforcement and licensing** authorities and pollution control bodies to use their systems of control to help minimise the potential for food contamination. The FSA is working to increase collaboration with local authorities on surveys to check for food and feed chemical contamination, backed by enforcement action where necessary. The Agency is also improving working partnerships with Government agencies to ensure prompt action over food safety incidents and to enhance its capacity to deal with malicious contamination of food. Food industry and other stakeholders are working with FSA to learn lessons from recent food incidents, such as Sudan 1, to reduce the occurrence of such incidents and improve the handling of them if they do occur.

[54] This figure is based on (i) evidence-based estimates provided by the Health Protection Agency derived from a large study of infectious intestinal diseases (IID) carried out in 2000 and (ii) the number of laboratory reports of IID at that time.

5.2.6 The UK monitoring programme for **pesticide residues** in food and drink is overseen by the independent Pesticide Residues Committee (PRC). The cost of the programme is around £2.2 million a year.

5.2.7 The **FSA's foodborne disease strategy**, a *farm to fork* initiative, aims to:

- reduce microbial contamination of foods;
- promote better food safety management and practice; and
- promote hygienic preparation of food commercially and in the home.

5.2.8 Activities under the strategy are targeted to where maximum benefits can be achieved: at the meat chain and catering outlets, for example. A key part of the overall strategy is FSA's integrated multi-media **Food Hygiene Campaign**,[55] which uses television, radio and press advertising, to raise awareness of best practice. Another facet is the implementation of food safety management systems, based on Hazard Analysis Critical Control Point (HACCP) principles.

5.2.9 The strategy, which was introduced in 2001, has so far been successful in securing an 15% reduction in foodborne illness, based on provisional laboratory data for the five main foodborne bacteria in 2003. Further information about the foodborne disease strategy can be found on the FSA's web site.[56]

5.2.10 **Defra's Animal Health and Welfare Strategy** is also highly relevant to reducing foodborne disease. A key objective of the strategy is to reduce the risk from zoonotic organisms and pathogens through better prevention and control of animal diseases. Improving the detection of possible disease threats, and taking risk-based action on the basis of scientific evidence when justified, is central to achieving this.

What more will government and industry do?

5.2.11 The FSA will continue to work with industry to reduce risks arising from food. While progress has been made, the **foodborne disease strategy** will continue to be an important feature, as will be work to reduce the risks to consumers from chemical and radiological contamination.

5.2.12 As published in '*Putting the Consumer First*',[57] the **FSA Strategic Plan for 2005-2010**, the Agency is committed to:

- developing **tailored guidance on food safety management** (based on HACCP principles) especially for small businesses, with guidance for the catering sector being rolled out from 2005;

55 http://www.food.gov.uk/safereating/

56 www.food.gov.uk

57 http://www.food.gov.uk/multimedia/pdfs/stratplan0510.pdf

- evaluating **hygiene award schemes for caterers** (by 2006) and using the results to help promote them more widely;
- developing and publishing (in 2006) a **strategy for promoting safe handling of food in the home**, to improve awareness and application of cleaning, cooking, cooling and avoiding cross-examination, concentrating particularly on work with schools and support for local food safety handlers;
- working with the food industry and local authorities to achieve more **comprehensive reporting on food safety incidents** relating to chemical (including radiological) contaminants and to establish an agreed system for **classifying their severity** by the end of 2005. A baseline measure of the number of incidents of each type will be established by 2006, and the Agency will work with industry to reduce the number of high and medium cases by 25% by 2010; and
- prioritising those **chemical contaminants** on which to work within the EU for **new or tighter legislative controls**.

5.2.13 The FSA has drafted a new Science Strategy[58] to inform and support the priority areas of work identified in its Strategic Plan as well as other key stakeholder areas that underpin its day to day business. Under its Science Strategy, to be published in spring 2006, the FSA will continue to fund **research** to investigate food safety problems and develop, with industry and other stakeholders, practical controls. It will also use **surveys** as an important tool to both monitor progress and identify possible new challenges to food safety.

5.2.14 All parts of the food chain have a role to play in ensuring a safe food supply. The food industry, and Sector Skills Councils which can help through **training** provision, are encouraged to work in partnership with the Food Standards Agency in delivering its strategic plan. This includes further reducing foodborne illness and achieving more comprehensive reporting of food safety incidents and working towards their reduction. As part of that, the British Retail Consortium (BRC) is committed to developing more comprehensive advice than at present on food safety standards and promoting it to retailers via, for instance, the BRC Global Standard.

Action Point

The objective is to reduce the incidence of foodborne illness in the UK in line with the FSA strategic objective, including its current target of securing a 20% reduction by 2006.

How will we measure progress?

5.2.15 Laboratory reports for the five major bacteria that cause the majority of foodborne illnesses: *Salmonella, Campylobacter, E.coli O157, Listeria monocytogenes* and *Clostridium perfringens* will be used as **Key Performance Indicators**. In addition, consumer confidence in the national regulatory system for food safety, which will be measured against the baseline levels established in the FSA's Consumer Attitudes Survey 2000.

58 http://www.food.gov.uk/multimedia/pdfs/fsa060206a.pdf#page=57

Equal Opportunities

What is the challenge?

5.3.1 The food industry provides more than 3 million jobs, equivalent to about 12% of UK employment. The Labour Force Survey 2002 shows that in the food and drink **manufacturing** sector 32% of the sector's employees are female; 8% are from ethnic minorities; 14% are disabled people; and 31% are over 45 years of age. In the **food service** sector, the figures are 58%, 13%, 12% and 13% respectively. The food industry, like many other sectors, is therefore in a good position to contribute to improving equal opportunities in the national workforce.

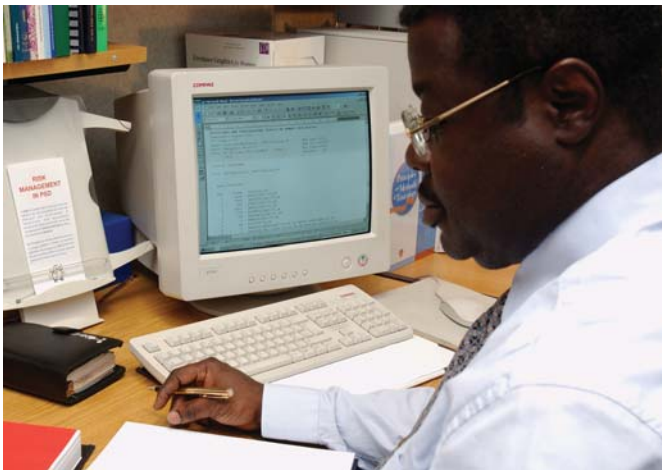
5.3.2 Demographic changes are making the need for equal opportunities all the more pressing. The average age of the UK workforce overall is rising steadily. Women now make up nearly half of it, double the number 25 years ago. Projections show that by 2010 only a third of the workforce will be male and under 45. And between 1999 and 2009, ethnic minorities will account for half the growth in the working-age population. The growing number of older people of working age will become an increasingly important reservoir of skills and experience for employers. But the benefits will only be realised by industry if they seek out new ways of tapping into this resource.

5.3.3 Nationally, there is plenty of scope for improvement. In particular, **women are under-represented in senior jobs, as are ethnic minorities and disabled people**. And the **full-time gender pay gap, estimated to be about 17% in favour of men in 2005** (based on mean salaries), remains a big issue as does workforce segregation.

5.3.4 The moral argument for improvement is as strong as ever. Also, as the demographic profile changes and labour shortages become more common, the business case for equality will become increasingly acute. It will become increasingly harder to keep good existing staff or attract new ones unless companies work to build reputations as employers. Companies with employment policies based on sound equal opportunities and diversity principles will be ahead of their competitors both in relation to UK nationals and the significant and growing number of overseas nationals working in the food industry.

5.3.5 **The widespread adoption of equal opportunities best practice in order to attract and retain a good quality and experienced workforce is the challenge to which the food and drink industry must rise.**

What is already happening?



5.3.6 Many **legal drivers** are already in place, the main ones being:

- the **Sex, Race and Disability Discrimination Acts** (1975, 1976 & 1995 respectively), which prohibit specified forms of discrimination;
- the **Equal Pay Act 1970**, which requires equal treatment for men and women in the same employment and provides for enforcement and disputes procedures; and
- the **Employment Act 2002**, which provides enhanced maternity and paternity provision, increases the amount of time parents have to secure appropriate childcare arrangements and places a new duty on employers to consider seriously requests for flexible working from parents of children under 6 years and disabled children under 18.

5.3.7 In addition, the **EC Employment Directive** prohibits discrimination on grounds of sexual orientation, religion or belief, disability and age in the fields of employment and vocational training. New domestic regulations have been introduced or are being developed to bring these into force.[59]

5.3.8 **Equality and other organisations** are also actively involved in encouraging equal opportunities best practice. For example:

- the Equal Opportunities Commission (EOC) is collaborating with food and drink companies to promote and share good practice in the food and drink manufacturing sector. This includes a captain of industry (the Chairman of Unilever) acting as 'Fair Pay Champion' in the sector, supported by the FDF. Under this initiative, a group of food industry companies are working collaboratively to identify pay gaps and appropriate solutions;
- the Commission for Racial Equality (CRE) is revising the Statutory Code on Practice for the Elimination of Racial Discrimination and the Promotion of Equality of Opportunity in Employment to help employers meet their obligations under the Race Relations Act (RRA);
- the Disability Rights Commission (DRC) has revised its Code of Practice on Employment and Occupation to take account of the regulations which implemented the EC Employment Directive. It also operates a helpline which provides advice to help employers understand and meet their duties under the Disability Discrimination Act; and
- ACAS has provided practical guidance for employers and employees on the new Sexual Orientation and Religion or Belief Regulations and is revising its Code on Disciplinary and Grievances Procedures in collaboration with the Small Business Service and other Stakeholders to help improve dispute resolution.

59 Sexual orientation and religion or belief strands came into force in December 2003. Regulations to extend the protection in employment under the Disability Discrimination Act came into force from October 2004. Age is planned for October 2006.

5.3.9 **Government** has also put in place a range of policies, campaigns and guidance to encourage improvement. For example:

- the National Childcare Strategy;
- a duty for employers to take seriously requests for flexible working from employees with young and disabled children;
- the Work-Life Balance Campaign;
- the New Deal for Disabled People;
- Surestart;
- a target for 35% of large companies to have completed equal pay reviews by April 2006, rising to 45% by April 2008
- awareness-raising campaigns to inform businesses, particularly SMEs, of their duties under the Disability Discrimination Act (DDA);
- the Government's Strategic Framework for Women's Enterprise;[60]
- the Strategy Unit's report on Ethnic Minorities and the Labour Market, for which a ministerial taskforce has been set up to ensure deliver of its conclusions;
- practical advice and case studies to help employers tackle the issue of **workplace segregation**;[61] and
- public procurement policies, designed to leverage equal opportunity improvements in the private sector.

What more will Government and industry do?

5.3.10 To promote equality and diversity in the UK labour market the Government, in collaboration with the CRE, is committed to:

- examining the options for more high profile awards;
- commissioning research on awareness campaigns;
- disseminating best practice gleaned from implementation of the 2000 RR(A)A to private and voluntary sectors, including the food industry; and
- examining the potency of the CRE general powers of enquiry.

5.3.11 The Government is also committed to extending further protection against discrimination for disabled people and, through the **Disability Discrimination Act 2005** which received Royal Assent in April 2005, it is extending the provisions of the 1995 Act. In addition, the Government is continuing to undertake a wide range of awareness–raising activity, especially among SMEs, to highlight the duties for employers and service providers under

60 http://www.sbs.gov.uk/SBS_Gov_files/speeches/SPE_womensframework.pdf

61 http://www.womenandequalityunit.gov.uk/women_work/advancingwomen.htm

the DDA, but especially the new duties that applied from October 2004. This complements awareness raising campaigns undertaken by the Disability Rights Commission.

5.3.12 The food industry is committed to adopting widely **best practice** guidelines for gender,[62] race,[63] disability[64] and work-life balance[65] to tackle the under-representation of women, ethnic minorities and disabled people where it exists in the workforce when benchmarked against the labour force as a whole. In addition, there is commitment to tackle significant and unexplained disparities in particular workforce grades, including senior management. Food industry trade associations are committed to using their influence to encourage best practice through **annual industry awards schemes** and similar programmes.

5.3.13 One such vehicle is the Sunday Times *100 Best Companies to Work For*, which is an annual event sponsored by DTI. The project aims to recognise some of the best UK employers and, by so doing, drives up standards for all UK workers. Both ASDA and Cadbury Schweppes were voted in the top 10 Best Big Companies to Work For by their employees in 2005.

5.3.14 FDF's Fair Pay Challenge is another example, in which food companies are encouraged to become actively involved.

Action Point

The objective is to halve any under-representation of women and ethnic minorities in skilled, and administrative and managerial grades in the food industry by 2010, benchmarked against their representation in the overall labour force. Industry responsibility.

How will we measure progress?

5.3.15 The percentages of food and drink **manufacturing** and **food service** sector employees who are women, from an ethnic minority group or are disabled is a **Key Performance Indicator under the FISS**.[66] The Government is committed to working with the retail and wholesale sectors to establish a baseline for women, ethnic minorities and people with a disability working against which to benchmark its future progress. Improve, the food and drink manufacturing SSC, is also committed to undertaking research to identify the scale of, and forecast the growth in, the food manufacturing sector's employment of overseas nationals.

5.3.16 The EOC will continue to monitor industry-wide progress on pay reviews and *Sure Start* will do so for childcare places through the quarterly Ofsted statistics.

62 http://www.womenandequalityunit.gov.uk

63 http://www.cre.gov.uk, http://www.communities.homeoffice.gov.uk/raceandfaith/ and http://www.dti.gov.uk/er/equality/

64 http://www.drc-gb.org

65 http://www.dti.gov.uk/er/fw_wlb.htm

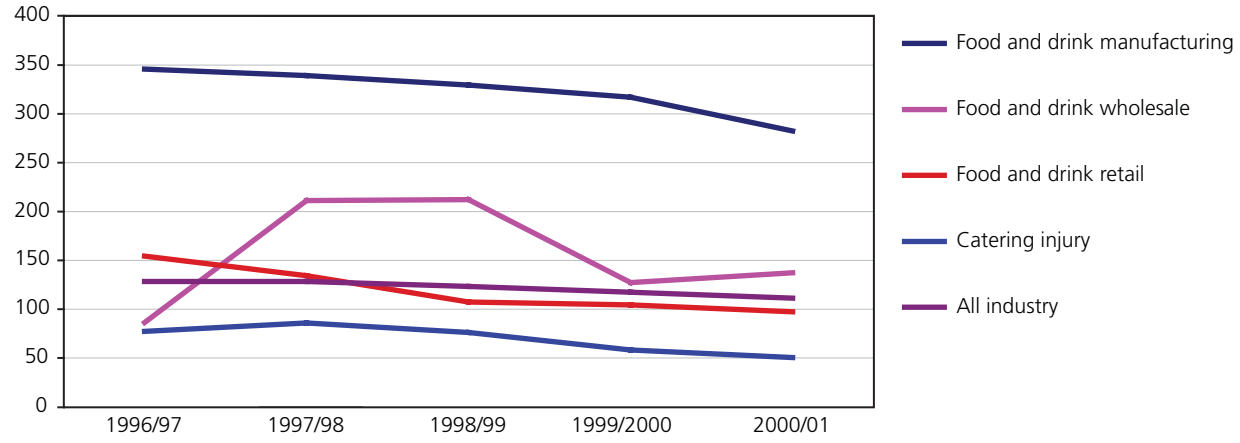
66 Labour Force survey will be used. Similar data for food wholesale and food retail sectors are unavailable given current standard industrial classifications.

Health & Safety

What is the challenge?

5.4.1 A high regard for health and safety is one aspect of being a socially responsible employer. Accidents and ill health associated with the workplace are estimated to cost the economy approximately £18 billion each year. Reducing this unnecessary cost requires good management systems, effective staff training and competence, and has clear business benefits to a company as well as its workforce.

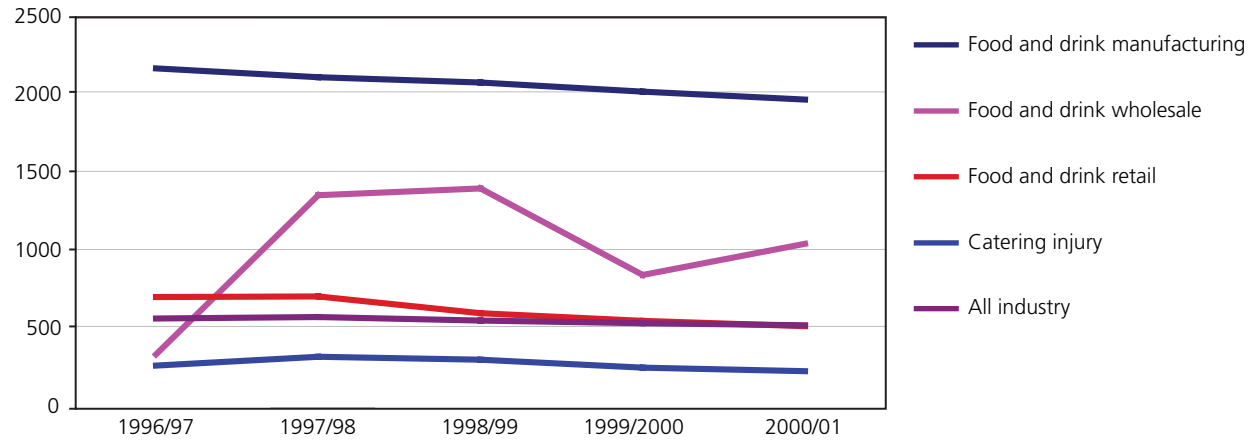
Chart 7: Fatal & Major Injuries/100,000 Employees



5.4.2 Despite significant progress, there is still a high rate of major injuries in the food **manufacturing** sector (**Chart 7**). There is also a high rate of over 3 day absences (**Chart 8**). The injury incidence rate in the food manufacturing sector is nearly twice the average for manufacturing as a whole.

5.4.3 **The challenge is for the food and drink manufacturing industry to improve further its track record, building on recent successes**. There is also scope for improvement in the food wholesale sector.

Chart 8: Over 3-Day Injuries/100,000 Employees



What is already happening?

5.4.4 The Health and Safety Commission (HSC) launched a campaign in the early nineties to tackle the problem in food **manufacturing**. The campaign became known as the ***Recipe for Safety*** initiative. It involved the provision of practical help and advice to the industry and also involved the Health and Safety Executive (HSE), food trade associations, large employers, and trade unions. A booklet was sent to all food and drink factories in the country setting out the industry agreed strategy to reduce injuries. This has been supported by other industry-specific guidance, conferences and seminars. The campaign's success has been remarkable. Injuries have dropped by 26% since 1990/91.

5.4.5 In 2000 the HSC launched a new strategy to reduce accidents in all British employment sectors, including the food **wholesale** and **retail** sectors. Called ***Revitalising Health and Safety***, it set national targets for the first time including a 5% reduction in fatal and major injury incidence rates by 2004, and a 10% reduction by 2010. HSE is working jointly with the food industry and local authorities to achieve these targets.

5.4.6 The HSC has also encouraged local authorities, which have front line public responsibility for health and safety in the **retailing** and **catering** sectors, to develop partnership arrangements with businesses which operate across many sites. These **Lead Authority Partnership Schemes** involve one authority linking with a company to agree standards and an approach across all its UK outlets. Other local authorities are then in a position to be able to link with the lead authority before undertaking enforcement action, thus ensuring consistency of approach. A large number of these partnerships have been established.

What more will Government and industry do?

5.4.7 The HSC's "Strategy for workplace health and safety in Great Britain for 2010 and beyond"[67] promotes this "Vision" to gain recognition of health and safety as a cornerstone of a civilised society. The "Vision" sets standards and performance levels for workplace health and safety that leads the world.

5.4.8 One of HSC's main Strategic themes identifies partnership as a way of improving health and safety performance. This is likely to prove effective in the food sector, building on these successes.

5.4.9 The ***Recipe for Safety*** initiative for **food manufacturers** has achieved remarkable success which needs to be sustained and enhanced. Despite these successes there remains a challenge for the food manufacturing industry in particular to continue to reduce accident rates.

5.4.10 Improve SSC is committed to identifying and defining health and safety standards within the food manufacturing industry, the training against which could be recorded in a voluntary skills passport. This would serve as a fully transferable record of an employee's achievements on health and safety and beyond. Employers would be able to identify more easily the level of health and safety awareness and competences of their employees as they move between companies.

67 http://www.hse.gov.uk/aboutus/hsc/strategy.htm

5.4.11 The HSE, the food manufacturing sector, and their trade associations and the trade unions are committed to continuing to work together to deliver the action plan which drives the campaign. As part of the ***Recipe for Safety*** initiative a new Food Manufacturing Health and Safety Forum comprising representatives from HSE, key trade associations and trade unions is spearheading co-ordinated action, including research and conferences, in order to achieve further reductions in injuries and occupational ill health in the sector.

5.4.12 Similarly, a concerted effort needs to be made to achieve the targets set out in ***Revitalising Health and Safety*** with regards to food **wholesalers** and **retailers**. Lead Authority Partnership Schemes will be used to promote the campaign during inspections and investigations of food premises, in addition to HSE publicity to these sectors.

5.4.13 In addition, HSE will be taking forward an engagement strategy, which will explore synergies for improving workplace health and safety throughout the food chain.

Action Point

The objective, in line with the HSC Strategy launched in 2000, is to cut all deaths and serious injuries per thousand workers in the sectors by 10% by 2010. Industry and trade union responsibility with HSE.

How will we measure progress?

5.4.14 A **FISS Key Performance Indictor** will be: notifiable injuries per 100,000 employees per year in each food industry sub-sector of the food and drink sectors benchmarked against the all industry position.[68]

68 Collected under the RIDDOR 95 regulations

Ethical Trading

What is the challenge?

5.5.1 Broadly defined, ethical trade may cover a range of practices throughout the supply chain that promote and protect labour standards, environmental standards and the livelihoods of vulnerable small-scale producers.

5.5.2 In the UK, growing public interest in the impact of business operations on workers in developing countries has brought such principles to the fore and into international trade, investment and the supply chain relationships. Ethical sourcing – practices throughout supply chains that promote and protect labour and environmental standards – is therefore increasingly a big issue for businesses and shareholders.

5.5.3 Ethical sourcing concerns are not limited to the supply of goods sourced from overseas. For example, there is a twin problem of illegal working and abuse of workers' rights associated with the use of casual and migrant labour in parts of the UK food industry. Businesses such as packhouses and other first stage processors, e.g. meat and fish processors, which supply the retail sector with much of our fresh food, rely to a significant extent on a labour force supplied by temporary labour providers or "gangmasters". As UK unemployment has reduced, migrant workers have accounted for an increasing proportion of this temporary labour. Some, but by no means all of these workers, are working here illegally. In some cases they are dependent on people traffickers and are, therefore, particularly vulnerable to abuse.

5.5.4 The fair trade movement is also concerned with ethical trade. Its approach is based on developing viable livelihoods for marginalized producers and their communities in developing countries. Food sectors beyond the farm gate have a crucial role to play in ensuring that small scale producers are not excluded from international trade and all food producers receive fair prices for their products.

5.5.5 **The challenge is to develop further best practice by which business can protect and promote ethical standards in trade in ways that improve the livelihood opportunities and sustainable development of the most disadvantaged.**

What is already happening?

5.5.6 The Government supports the work of the International Labour Organisation, the international body responsible for setting labour standards and providing technical assistance for their implementation. It also supports other international initiatives such as the United Nations Global Compact and the OECD Guidelines for Multinationals and works on voluntary initiatives with business, trade unions and NGOs.

5.5.7 Many companies have responded to the challenge by adopting voluntary codes of conduct covering labour standards and environmental sustainability. A number of certification schemes have been developed to verify good practice. Some food **trade associations** have been active with their members to encourage the adoption of ethical trading standards where relevant. For example, the FDF's Ethical Trading Working Group has drawn up a declaration of ethical trading values to help ensure that its members' relationships with suppliers are ethically, as well as commercially, based. It has also proactively endorsed ILO conventions and recommendations. A further example is the 2000 Fresh Produce Consortium which developed a Code of Practice on Temporary Packhouse Labour to provide guidance to businesses on how to address the problems of Gangmasters and illegal working in the fresh produce sector, which extends also to packaging and processing.

5.5.8 A significant development has been the establishment of multistakeholder initiatives. In the UK, the **Ethical Trading Initiative** (ETI) was established in 1998. It is a tripartite organisation comprising corporations, NGOs and trade unions committed to improving the conditions of workers in the global supply chains of corporate members. Corporate members of the ETI include a number of major food retailers such as Tesco, ASDA, Sainsbury's and Marks and Spencer. In total there are 37 corporate members with a combined annual turnover of over £100 billion.

5.5.9 The ETI members implement and monitor a "Base Code" which goes beyond the core ILO conventions on labour standards. The code stipulates that:

- employment should be freely chosen;
- there should be freedom of association and the right to collective bargaining;
- working conditions should be safe and hygienic;
- child labour should not be used;
- a living wage should be paid;
- no discrimination should be practised; and
- that no harsh or inhumane treatment is allowed.

The UK cocoa trade and chocolate industry is concerned about allegations of abusive labour practices on cocoa farms in Africa. It is working on a global alliance of industry, governments, the ILO, NGOs and others to address the problem.

Together they have agreed a Protocol the **Biscuit, Cake, Chocolate & Confectionery Alliance Action Plan on Child Labour**, which sets out a clear plan of action against a specific timetable to determine the extent of the problem and to establish a system to ensure that cocoa is grown without abusive child labour or forced labour practices.

5.5.10 Each ETI corporate member is expected to implement the ETI's Base Code or its own code of conduct incorporating the Base Code in its supply chain. The ETI recognises that some suppliers may not be able to meet all the terms of the Base Code in a short time, or may be constrained by national laws. Therefore, it is not a label or a standard but a commitment to learn and to agree corrective actions and to develop best practice within the tri-partite group of corporate members, NGOs and trade unions.

5.5.11 Each corporate member is also expected to open its supply chain to independent monitoring and to prepare an annual report, which is assessed by ETI. Social Accountability International's social accountability system, SA8000, is one of a number of efficient tools which corporate members can use to verify their supply chains. Amongst other things, it involves:

- a factory level management system requirement for ongoing compliance and improvement;
- independent, expert verification of compliance;
- input from all stakeholders; and
- public reporting.

5.5.12 The **Fairtrade Foundation**, which was set up by CAFOD, Christian Aid, New Consumer, Oxfam, Tradecraft Exchange and the National Federation of Women's Institutes, is also working to tackle ethical trading. It focuses on returns paid to producers in developing countries for particular products and an additional premium for investment in community development. It pursues this by awarding a FAIRTRADE Mark to products that meet internationally recognised employment standards and through consumer awareness campaigns. Currently more than 900 coffee, tea, fresh fruit, chocolate, cocoa, juice, sugar, honey and other products carry the FAIRTRADE Mark.

5.5.13 Defra and other Government departments have been working with the **ETI Temporary Working Group** (comprising retailers, packhouses, growers, labour providers and trade unions) to:

- draw up a Code of Practice for labour providers in the fresh produce supply chain;
- to develop practical tools to enable Gangmasters who are willing to implement good practice; and
- enable compliance with this Code to be audited.

5.5.14 Launched in November 2004, the Code sets out standards labour providers must meet legally as well as good practice. It enables the entire food supply chain to be involved in stamping out illegal practices. For the first time, labour providers can be audited against clear, agreed criteria to ensure that they are abiding by the law and respecting their workers. Defra fully backs the Code and has given almost £40,000 to develop the necessary audit arrangements. In addition, a new gangmasters licensing scheme will come into force in April 2006. Under the scheme, it will be illegal for labour providers in relevant sectors to operate without licences and an offence for anyone in those sectors to use an unlicensed gangmaster. Improve, the food manufacturing SSC ran a series of seminars for employers to raise awareness of the new Code and other best practice guidance.

What more will Government and industry do?

5.5.15 In support of voluntary initiatives and building on the lessons learned from current initiatives in the food sector and elsewhere, Government and industry will work to;

- further develop the business case of ethical trade demonstrating the benefits for both suppliers and retailers;
- address the potential for confusion and duplication of effort created by the proliferation of different schemes;
- improve the quality and effectiveness of auditing and support development beyond simple code compliance; and
- ensure local stakeholders play a bigger role in shaping best practice in supply chains.

5.5.16 Food industry trade associations are committed under this strategy to encouraging their members to become corporate members of the ETI where relevant to their businesses and the adoption of recognised monitoring standards such as SA8000.

5.5.17 The Department for International Development (DFID) helped to found the ETI in 1998 and has provided over £2 million to support its work so far. A new agreement, from July 2006, will provide approximately £2.5 million over the next 5 years.

5.5.18 DFID has supported the Fairtrade Foundation since 2002 and in 2005 agreed a further three year grant of £750,000 over three years to support the expansion of the Fairtrade Foundation's range of products. This is in addition to ongoing support for its awareness raising initiatives such as the Fairtrade Town campaign.

Action Point

The aim is to double the amount or percentage of food goods in supermarkets covered by ethical trading schemes by 2008. Government and industry to establish a Ethical Trade Forum for ongoing discussion between stakeholders (industry, workers, Government, consumers, civil society) to establish a framework for: ethical trade within the food industry; a mechanism for sharing lessons learned; identifying best practice; and ways of measuring progress. To report by spring 2007.

How will we measure progress?

5.5.19 Defra commissioned research into current levels of food industry involvement in ethical trade, the variety of schemes and the options for key performance indicators. The National Centre for Business and Sustainability's report of August 2005[69] concluded that the KPI proposed in the draft FISS issued for consultation earlier that year (the percentage of food industry plcs that follow a recognised ethical trading code of practice) would be problematic due to lack of data. It proposed instead a more overarching KPI concerning levels of 'participation in dedicated ethical trading schemes'. This could be on the basis of:

- the number of food and drink companies participating in each defined set of ethical trading schemes; or
- the total number of food and drink companies taking part in one or more of a defined set of dedicated ethical trading schemes.

5.5.20 These options will be considered by the Forum and covered in its report to be completed by spring 2007.

69 http://statistics.defra.gov.uk/esg/reports/Ethical%20trading/default.asp

Chapter 6: Primarily Economic

Science-Based Innovation

What is the challenge?

6.1.1 Science-based innovation has a significant role to play in the sustainability of the food industry. It can have economic benefits, aid environmental performance and help with social goals. Examples include improved technical efficiency with reductions in waste and resource use, improved working environments for staff, and the development of new products that meet consumer needs for safe and high quality foods that contribute to a healthy diet.

6.1.2 It is reported by the IGD that the food industry's intramural spend on R&D is around £80m per annum. This is mainly devoted to product and process development.

6.1.3 A Defra study (1996) of business spending on R&D in the food manufacturing industry, as a proportion of industry gross value added for a sample of OECD countries, found UK spending to be about average. Although not covered by the study, spending on R&D by the food retailing, wholesale and catering sectors appears to be negligible.

6.1.4 A number of firms have established contacts and research collaborations with universities. This enables access to science and engineering knowledge generated through public investment in the UK and wider science base. However, the extent to which this takes place is uncertain. It may at best be limited to the larger food industry companies. In addition, it is suggested that even some of these may have a limited capacity to keep up to date with relevant advances in science and engineering research in the universities. This is due to the very wide range of sciences involved and to competing demands and pressures on technical support staff in the industry. This is a barrier to science-based innovation. Some individual food industry companies also find it difficult to justify R&D spending where it cannot be spread over a sufficiently large volume to give an adequate return.

6.1.5 The challenge is threefold. To ensure that:

(i) science-based innovation is underpinned by appropriate levels of **funding**;

(ii) that strong networks exist between industry and the science base to engender **collaborative working**; and

(iii) sound mechanisms are in place for widespread **dissemination** of innovation and best practice, including for food and drink SMEs.

What is already happening?

6.1.6 The Government is enhancing food industry involvement in science-based innovation through co-funding of strategic research, knowledge transfer and spread of best practice. This is increasingly focusing on energy, waste and water use in addition to other aspects of manufacturing efficiency. The principal Government-wide or Defra programmes for achieving this are:

- The **LINK** scheme, which is aimed at collaboration between industry and the research base. Industry funding for research projects is matched under the scheme with public money;
- **Knowledge Transfer Partnerships** which provide for young graduates to work in a small company for two years on a project of strategic importance and with full academic back up from a university partner;
- **Knowledge Transfer Networks** (Faraday Partnerships), which bring together researchers and businesses around a common sector or technology theme;
- **6 Regional Technology Transfer Centres** located on university sites, which provide a single point of contact for local food SMEs and stimulate increased awareness and uptake of innovative food technology; and
- **A Sustainable Farming and Food Research Priorities Group (RPG)**, set up in October 2003, whose remit included advising Defra on strategic priorities for publicly funded research in support of a sustainable food industry in the UK.

A Case Study at **Northern Foods plc** (see Annex XII) illustrates the benefits of implementing the following higher investment measures:

- research to investigate the use of non-invasive temperature measurement technology leading to reduced product wastage.

Application of the new technology is estimated to have saved the company £0.5 million per year in reduced product losses.

What more will Government and industry do?

6.1.7 Defra will **increase its funding** in relation to its food science and innovation schemes by a third, to £3.7m over 3 years up to 2006/07. The technical focus of Defra's activities under these schemes will be on manufacturing and operating efficiency; energy, waste and water minimisation; and high quality and safe food that meets the nutritional requirements for a healthy diet. These research areas will be promoted in workshops and scoping studies, through which the technical barriers to progress can be identified and married up with appropriate science.

6.1.8 For example, Defra is committed to funding research by Imperial College into strategies for waste minimisation and opportunities for sustainable management of unavoidable food waste. Defra is also committed to working with the Chilled Food Association on a scoping study to identify the root causes of waste generation in the growing chilled food sector, and to assess the generic research needed to address the problem. A workshop will assess the application of university research to the reclamation of water in a wide range of food manufacturing operations.

6.1.9 To help food industry companies that find it difficult to justify R&D spending where this cannot be spread over a sufficiently large volume, Defra will **assist in the development of multi-company LINK projects** where costs and risks can be shared.

6.1.10 Defra will also seek to **develop effective networks** between the industry and a wider range of science and engineering expertise in the universities, both within and outside the UK. This will be done through close working with other funders of relevant research such as the DTI, whose Technology Strategy contains elements of potential benefit to the food industry, and with industry bodies. Discussions are taking place with the IGD Technical Directors Forum to identify areas (such as diet and health) where greater input on R&D would be beneficial. This has led to an initial research project on science underpinning the reduction of salt in foods, with planned scoping studies on other diet and health issues. In addition, the Science Advisory Council provides high level advice with respect to the whole of Defra's science and innovation programme.

6.1.11 The RPG recently published its first report making recommendations for future research priorities within the food chain in line with the SSFF.[70]

70 http://www.defra.gov.uk/science/documents/RPG/Papers/FinalRPGreport.pdf

6.1.12 Defra is committed under its Waste and Resources R&D programme to funding research on the management of unavoidable waste. The food industry will have particular interest in participating in research on systems for waste recovery and in technologies for treatment of residual wastes, including energy recovery from such waste.

Action Point

The industry's aim should be to work proactively with Government on collaborative R&D focused on overcoming technical barriers to achieve innovation which will leave industry better placed to meet sustainability goals. Food industry responsibility.

How will we measure progress?

6.1.13 The effectiveness of the Government schemes, and the appropriateness of the technical themes, will be evaluated each year to ensure that programmes maintain their relevance and continue to meet their objectives.

Workforce Skills

What is the challenge?

6.2.1 Workforce skills are an important determinant of labour productivity. The available evidence on skill levels in **food manufacturing** suggests room for improvement. For example, a 1998 international benchmarking study carried out by the Food and Drink National Training Organisation (NTO) found the number of employees in the UK sector with educational qualifications was 30% lower than the EU average and 40% less than Japan. In addition, a 2001 study by the NTO found that:

- the supply of workers for food manufacturing is lower than demand;
- the industry is less well qualified than the UK average; and
- there are widespread skill shortages, especially among the highly skilled occupations with resultant increased operating costs, difficulties in meeting customer needs and problems in introducing new working practices that would increase profits.

> The key to meeting the productivity challenge is skills. At basic skill levels, for instance, over 20 per cent of the adult UK population lacks functional literacy according to the International Adult Literacy Survey. ….. The traditional British deficit in technical skills is an important casual factor in our productivity gap.
>
> *DfES, Meeting the Sector Skills and Productivity Challenge, 2001*

6.2.2 **The challenge is to ensure that the food industry is promoted as an employer of choice and for any shortfall in skills demanded to be identified and met through training provision. This includes ensuring that Learning and Skills Councils (LCSs) work with Sector Skills Councils (SSCs) to ensure that the final network of 400 Centre of Vocational Excellence (CoVEs) is the best fit** – in terms of meeting employers' skills needs by sector and location.

Improve is piloting its new Skills Academy for food and drink manufacturers in East Anglia, East Midlands and the Humber with 18 employers. The aim is to enable employers and employees to identify the most effective route in the gaining of skills linked firmly to resultant productivity increases. In addition, this process encourages the recording of actual achievements at the workplace resulting from the gaining of skills. A key element of this access route through the Sectors Skills Academy will be the linking of the work and programmes run by the CoVEs who along with Improve will form a key partnership role in the use of the Academy by employers.

What is already happening?

6.2.3 Since 2001 the Government has introduced the **Learning and Skills Council** (LSC) to improve the supply and availability of education and training through local institutions and providers in different parts of the country. The Government asked the LSC to develop a network of 400 CoVEs across England by March 2006. These offer enhanced learning opportunities with a key focus on meeting the skills needs of employers at level 3. Further information is available on-line at www.cove.lsc.gov.uk

6.2.4 As at August 2005, there were 42 CoVEs (12% of the network) covering food technology, manufacturing, hospitality, and catering. Retail has 3 CoVEs approved in London, Birmingham and Norwich with others in the Southeast. These retail specific CoVEs are chaired by the London College of Communication. Skillsmart Retail is keen for each CoVE to take the lead on a specialist area and develop learning materials, which can then be shared across the Network. Early indications show that the programme has made a material impact on the development and provision of new training facilities and courses. Training providers are improving links with employers, which is leading to the provision of state of the art equipment and the development of highly relevant vocational courses to tackle skills needed. The Government estimates that by March 2006, over 300 people will have gained a level 3 qualification in food technology at a CoVE.

6.2.5 The Government has taken steps to help improve the demand side through the introduction of **Sector Skills Councils** (SSCs). These are influential **employer-led** bodies.

6.2.6 Licensed by Government, SSCs lead the drive to make significant improvements to skills and productivity in UK business sectors and public services. SSCs are experts on their sectors and understand both the key drivers influencing sector development and the implications for the demand, supply and use of skills.

6.2.7 SSCs work with employers, trade unions, government, and other partners to deliver key skills and productivity priorities to improve business competitiveness and public services performance. Their goals are to:

- reduce skills gaps and shortages, and increase the speed of development and transition by sectors;
- develop specific actions that lead to improved productivity, business and public services performance;
- take action leading to the development of everyone in the sector's workforce; and
- influence action that leads to improvement in learning supply.

6.2.8 The Government is underpinning each SSC with substantial public funding – SSCs currently receive £4M over three years in core funding from the SSDA. Other funds are also available.

6.2.9 The food industry has responded positively to this initiative and is essentially served by the following three SSCs:

- **Improve** which covers the food and drink manufacturing sector;
- **Skillsmart Retail** which covers the retail industry, of which over one third (1.2 million) of the people employed works in food retailing; and
- **People 1st**, which covers the hospitality, leisure, travel and tourism industries.

6.2.10 Skillsmart Retail has worked with Tesco, Asda and other partners (LSC, City&Guilds and the Qualifications and Curriculum Authority (QCA)) to accredit their own in-house training programmes as being capable of delivering the full apprenticeship programme at level 2. Tesco's first pilot programme across three stores has now been extended to 480 employees.

6.2.11 Skillsmart Retail has developed with employers and higher education a framework for Foundation Degrees in Retail Management and Leadership. This vocational degree covers the knowledge and skills that retailers want to see being developed so that graduates are capable of running the store as well as developing their intellectual skills. Skillsmart Retail are now working with both stakeholders to see how this will be taken up by the retail sector.

6.2.12 The **Skills Strategy White Paper** *'21st Century Skills – Realising Our Potential: Individuals, Employers, Nation'*, published on 9 July 2003, **clarifies the respective roles of key partners at national, regional and local level**. It sets out a new understanding of how the Government, employers and individuals can create a demand-led education and training system, which will raise the skills of the nation. The Skills Agenda includes:

- the guarantee of free learning for everyone who needs it, so that they can obtain a good foundation level of employability skills (to level 2);
- piloting of a new form of adult learning grant;
- a guarantee of protection for leisure learning in each LSC area. This will focus, for example, particularly on those on low incomes; and
- providing better information on training skills and qualifications so that people are better informed about availability, location and benefits.

Action Point

To contribute to the Skills Strategy White Paper's objectives, the aim is to reduce by 40% the number of adult workers in retail and manufacturing sectors who lack qualifications at NVQ level 2 and above by 2010 against a 2003 baseline.

What more will Government and industry do?

6.2.13 Improve's medium term business plan sets out the key areas in which employers will be engaged in identifying skills demand and providing the supply side provision required to meet gaps and shortages. The major areas being addressed are the:

- provision of a Sector Skills Academy to increase and extend access to relevant skills, training, qualification and access routes for both employers and employees;
- development of a Skills Passport to act as a transferable record of skills achievement and readily available to all employees and employers;
- development of a range of modern apprenticeship frameworks including advanced apprenticeships covering manufacturing and engineering, manufacturing and distribution, manufacturing and marketing, and manufacturing and management;
- formation of an employability framework of key and basic skills that can be attached to a range of qualifications to improve the employability of individuals through more effective application at the workplace of underpinning knowledge;
- development with other Sector Skills Councils of a Food Chain Skills Group to look at common skills issues across the food chain commencing with employer access to relevant food health and hygiene standards;
- formation of future food science, a joint venture with the Institute of Food Science and Technology and the Science Council to look at the academic routes;
- tackling the issue of management development through the provision of S/NVQ Level IV management and leadership programmes specifically designed for food and drink manufacturers and with the ability to be customised further for small to medium enterprise companies; and
- development of best practice programmes and seminars to address the skills needs of employers engaging overseas nationals.

6.2.14 Skillsmart Retail is committed under its Strategic Plan to a number of actions over a five year period (up to 2010) including developing:

- a unitised and credit based Retail Skills Map which allows all training and development to be incorporated and recognised;
- a Retail Qualifications Strategy, which is a strategic planning tool detailing the core requirements for the development of qualifications within the industry. Retail qualifications fall into three specific areas, general qualifications with a vocational context, occupational preparation, and occupational qualifications. They will work with employers, awarding bodies, and the regulators to agree the scope of qualifications provision for the sector; and
- a Sector Skills Agreement during 2005–2006.

6.2.15 DfES is working on a **scheme to guide businesses**, including those in the food and drink sector, to the services provided by CoVEs and the LSC.

How will we measure progress?

6.2.16 Each SSC is contracted to deliver a range of Key Performance Indicators (KPIs) with the Sector Skills Development Agency as part of its licensing arrangements. Specific performance targets are included in the contract with the SSC being subject to regular evaluation on its achievements.

6.2.17 Beyond this, in the case of Improve progress will be measured through a range of different mechanisms. Primary amongst these will be the development of a Sector Skills Agreement between Improve and its key strategic partners and providers. The Sector Skills Agreement is the major vehicle through which all Sector Skills Councils will be assessed in their engagement with employers and the resultant identification and provision of skills supply. Other means by which Improve will measure progress will be linked to employer surveys on its engagement with employers and the added value and benefits gained by them. Specifically, these would measure clear links between an employer's investment in skills and increases in productivity and profits. Further measures would relate to the gathering of labour market intelligence in key areas such as recruitment and retention, increases in training ratios and volume, and increased requests for careers information.

6.2.18 The LSC has arranged for 15% of the existing CoVE network to be evaluated to assess the impact on employers.[71]

71 The report "the Impact of CoVEs attitudes and Engagement on Employers and Key Stakeholders" was published in September 2004 at www.cove.lsc.gov.uk

Tackling Retail Crime

What is the challenge?

6.3.1 Crime is a problem that affects all retailers. Food and drink retailers are not particularly susceptible to it, but it can have a considerable impact on the smaller convenience stores, takeaway food premises and off licences. This is often due in part to the long and late opening hours, and staff working alone.

6.3.2 Police recorded almost 310,000 incidents of theft from shops in the twelve months to 31 March 2003. This total is not broken down into industry sectors. Other types of crime that affect retailers include burglary, fraud (cheques, credit cards, etc.), theft, criminal damage, arson and assault. The BRC conducts an annual crime survey of their membership. This suggests that the overall cost of crime to retailers is more than £2 billion each year.

6.3.3 Small-scale studies such as Ekblom and Simon (1988), Hibberd and Shapland (1993) and Hopkins and Tilley (1998) have shown that those who run small shops face particular problems relating to violent and abusive customers, and in the case of Asian shopkeepers, racial abuse. A study by Hopkins and Tilley of North London also found that 30% of small and medium sized businesses had, as a result of crime and abuse, considered ceasing trading. Crime, such as theft or assault or threatening behaviour, can also affect employed staff, as highlighted in Union of Shop Distributive Allied Workers (USDAW's) 2003 *Freedom from Fear* campaign.

6.3.4 Recent studies in 2004, including the 2002 commercial victimisation study and the British Retail Consortium crime survey, suggest that the number of incidents of violence against shop-workers is rising. The main cause of violent incidents is apprehending shop thieves. However, a number of studies including USDAW's "Freedom from Fear" survey, and Independent Retail News survey have highlighted the problems around age restricted sales of alcohol. The Government supports a "No ID – No Sale" message and is encouraging retailers to display this prominently at the point of sale. The introduction of ID cards will help here. However, in the meantime, schemes like the BRC's PASS (Proof of Age Standard Scheme) hologram on accredited cards should give retailers confidence. Some large grocery retailers are already using a principle of only serving alcohol to individuals looking over 21, unless they can produce ID proving that they are old enough to make the purchase legally.

What is already happening?

6.3.5 There are a number of different **policies and projects addressing best practice** aimed at combating retail crime. The main ones are:

- A **Scheme to assist small retailers in deprived areas:** This Home Office project targeted improvements in security for small retailers in the 10% most deprived areas. £15m was made available over 3 years ending in March 2004 for this purpose. It has helped over 12,500 small shops.
- **Business-crime reduction partnerships:** The Home Office has provided £0.9m of funding to the BRC over the next two years to set up the Action Against Business Crime Group (AABC), a national association of business crime reduction partnerships in towns and shopping centres across England and Wales. They currently exist in around 100 town and shopping centres with membership typically including local shops, police and town centre managers. AABC have been tasked with setting up 100 new partnerships, offering training for partnership managers and developing information sharing protocols between partnerships and the police. Partnerships will be accredited to the 'Safer Business Award' standard, which will be a 'kite mark' of professional standards in data and operational management of the partnership as well as an indicator that the partnership is working to tackle the causes of retail crime through drugs outreach or education.
- The **Association of Convenience Stores Retail Crime Forums:** Serving as regular information sharing forums they provide up to date information and briefing to representatives of smaller convenience stores.

The **Wigan 24 Hour Partnership** was established in September 2000 and operates under the Town Centre Management Initiative. Wigan town centre now has a strategic crime reduction partnership with multi-agency partners working towards common objectives. The Retail Crime Operation has almost 100 members, and all of the town's 52 licensed premises are members of the pub & club watch scheme. By working together, Wigan is well on its way to operating an effective 24-hour crime prevention partnership. This is proving to be of great value to retailers and other businesses in reducing crime and anti-social behaviour.

- The **Health and Safety Executive** has recently finished a three-year programme to produce case study guidance *'Work Related Violence – managing the risk in Small Businesses'*. The HSE also commissioned research to find examples of good practice in preventing and managing advice to lone workers. Case studies are now available on their website. They are also continuing to work on the development of new national occupational standards in the management of work related violence to provide employers with a sound framework on which to develop policies regarding violence at work. In early 2005, the HSE set up a number of working groups to tackle work related violence in the top 6 most vulnerable job areas. There is a group looking specifically at retail violence.
- The **Milton Keynes Retail Theft Initiative:** Police-led, this aims to get first (and second) time shop thieves to confront their behaviour and its effects with the help of partners – such as retailers. The initiative is being rolled out across the South East.
- **Business crime reduction advisors:** have now been appointed in each of the government offices in the regions. They are providing an essential link between business and local crime reduction agencies and are currently developing and implementing strategies to deal with local business crime problems.
- The Home Office carried out the 2002 **survey of business crime victimisation** covering retail and manufacturing sectors, which is the first such independent survey since 1994. Summary results were published in November 2004, and show that overall levels of crime in 2002 are slightly lower than those in 1994. These, and more comprehensive analysis have been published, and are currently available on the Home Office website.

6.3.6 Most of the large chain stores also have full-time **staff working on crime reduction measures** and are often at the forefront of work on subjects like store layout to deter crime.

What more will Government and industry do?

6.3.7 The Home Office is **evaluating the scheme to assist small retailers in deprived areas** and has provided a training package for over 600 small retailers on crime prevention and reduction as part of its scheme for deprived areas. A development and practice report from the small retailers scheme has been published[72] and the full evaluation is expected in 2006.

6.3.8 A mini website about the scheme has been developed on the Crime Reduction website http://www.crimereduction.gov.uk. This sets out best practice from four existing projects and also gives links to other useful sites, which may help retailers and other businesses to tackle crime. The Home Office has also produced a **good practice leaflet** for retailers. This leaflet was updated in August 2004 with advice relevant to all businesses and in March 2005, the Home Office published a comprehensive learning guide "Your business, keep crime out of it" aimed at helping all business improve their security.

72 http://www.homeoffice.gov.uk/rds/pdfs04/dpr29.pdf

6.3.9 The BRC and many individual retail crime groups have given time and financial support to combating crime. They have been instrumental in developing **town and shopping centre partnerships** that share information between members about known offenders and have developed radio-link schemes to give mutual warning and support when offenders are in the centre. Partnerships currently exist in around 100 town and shopping centres with membership typically including local shops, police and town centre managers.

6.3.10 It is hoped that retailers and their representative organisations will continue to maintain and develop partnership schemes. **Training for staff** in handling potentially violent situations will be particularly important.

6.3.11 A particular problem is likely to be presented by **SMEs** whose operators will often have little or no capacity to engage in partnership working. This group presents a particular challenge for the industry. A **national forum of small business representatives** has been set up to deal with this. The first meeting, chaired by a Home Office Minister of State, took place on 7 January 2004. The industry-led forum has set up working groups to look at 'The Police Response', 'Incentives to take up security measures' and 'Advice and information'. These groups have already posted significant results, including a commitment to pilot studies into the police recording of business crime in South Wales and Greater Manchester.

In May 2002, the BRC launched **'Wigan Town Centre Safe'**. This initiative is aimed at reducing crime and disorder during the evening. Working with key partnerships, an action plan was implemented and the results so far have been far better than anticipated – with serious crime falling by as much as 74%.

6.3.12 As part of the DTI Retail Strategy Group report published in April 2004, Government and industry will continue to maintain and develop partnership schemes.

6.3.13 Retailers, including the food sector, are also committed in response to the report, to working with the Home Office to develop **opportunities for ex-offenders**. It is hoped that working with the new National Offender Management Service, pilot programmes can be developed which could include training within prisons or work placement on release for suitable candidates. The Home Office is also keen that the retail sector considers tackling the cause of crime as part of their CSR agenda.

Action Point

The aim is for the food industry to play a full part in creating and maintaining business crime reduction partnerships. Participation in accredited schemes, such as the Safer Business Award, should be encouraged.

How will we measure progress?

6.3.14 A **FISS Key Performance Indicator** will be: the percentage of accredited partnerships which have enjoyed full co-operation from the food industry.

Chapter 7: Better Regulation

What is the challenge?

7.1.1 Sustainable development can be achieved only by changing people's behaviour. While in some situations a classic regulatory approach may be required to achieve a policy objective, in other circumstances an alternative approach may be more appropriate. Achieving this balance requires more imaginative thinking on the part of regulators and industry alike. Our aim is to take approaches which will reduce regulatory compliance costs, which cumulatively can be to the competitive disadvantage of UK business.

7.1.2 **The challenge, therefore, is to deliver better regulation, which means:**

- regulating only where necessary;
- doing so in a light touch way that is proportionate to risk; and
- deregulating and simplifying existing regulations wherever possible.

What is already happening?

7.1.3 The Government is committed to the delivery of better regulation, as set out in the way ahead in **Regulatory Reform, The Government's Action Plan** published on 10 December 2003.[73] The plan includes commitments to:

- reduce unnecessary business costs for the private sector;
- publish a specific **Action Plan for Small Business**[74];
- work with bodies such as the Audit Commission, the Environment Agency and Health and Safety Executive to make their enforcement regimes more risk based, in line with Government policy for **light touch enforcement**;
- ensure that the **impact of new regulation is fully considered**, by driving better regulation forward at the European level and extending the culture beyond central Government to all organisations that deal with business on a day-to-day basis. One key aspect of this includes driving up the quality of Regulatory Impact Assessments (which assess the costs, benefits and risks of policy proposals) including through their evaluation by the National Audit Office. Other aspects include the introduction by the European Commission of a new two-stage impact system for European proposals and, for example, commitments made in response to Better Regulation Task Force Reports.

73 http://www.cabinetoffice.gov.uk/regulation/regulatory_reform/act/action_plan.asp

74 http://www.sbs.gov.uk/sbsgov/action/layer?topicId=7000000084

7.1.4 In the 2005 Pre Budget Report the Government reiterated its commitment to better regulation, e.g. through the requirement for all significant new regulations to be subject to post implementation reviews. Government commitments to Task Force reports include ensuring:

- endorsement of the ***Better Regulation Task Force's five Principles of Good Regulation*** that regulation should be proportionate; accountable; consistent; transparent; and targeted; and
- independent regulators should prepare **impact assessments** and comply with Government codes on effective consultation and light touch enforcement.

7.1.5 The Government reiterated its commitment to reducing administrative burdens for business by accepting the recommendations of the Hampton Review, which was released alongside the 2005 Budget. The Hampton Review sets out a number of principles for regulatory enforcement which Defra is committed to take into account during development of all regulatory policy.

What more will Government and industry do?

7.1.6 The Vehicle Industry Policy and European Regulation (VIPER) Group was established by DTI following a recommendation made by the Ministerial Panel for Regulatory Accountability in 2001. Its aims are to:

(i) engender a new approach by creating a high level forum through which the industry and Government can add value to the policy and legislative processes in operation in the UK, EU and internationally;

(ii) be an early warning mechanism for stakeholders on proposed regulations, particularly those emanating from Brussels, and facilitate early co-operation in developing Regulatory Impact Assessments;

(iii) act as a forum for Government to articulate evolving policy thinking and benefit from the early input of industry views and concerns over possible impacts and effects. This should include consideration of alternatives to regulation, where appropriate;

(iv) help ensure proportionate and appropriate implementation of policy and regulations;

(v) help industry to better understand the rationale behind UK policy positions;

Maintaining **macro-economic stability** is the key element of the Government's economic policy. Between 1979 and 1997, the UK had one of the most volatile growth rates in the G7 and greater inflation rate volatility than all except Italy. This volatility deterred investment, inhibited innovation and limited enterprise. The Government has reformed the macro-economic framework for sustained and stable growth. It has committed itself to sustainable public finances through the Code of Fiscal Stability. It has also given the Bank of England the independence to set interest rates to meet the Government's inflation target. As a result, the UK has the lowest inflation in 30 years and long-term interest rates are the lowest for 35 years.

(vi) foster earlier and more productive joined-up working between officials from different Government Departments on cross-cutting policies; and

(vii) enable officials to understand and take into account the breadth of the policy and regulation affecting the sector.

7.1.7 The model has proved very successful for ensuring early warning and two-way dialogue on European and UK regulation and its potential impact on business. The Viper Group meets quarterly led by DTI, which also provides the secretariat. Its members include senior vehicle company representatives (who are churned so that half of those present at a meeting differ to those from the previous meeting, to ensure as many companies as possible are involved) and relevant central Government regulatory Departments. A matrix of policy priorities are determined by the Group working within priority themes, e.g. transport and environment regulation. Government and industry interest are identified for each, as well, as the legislative status in Europe and 'life status' e.g. proposal, consultation and adoption status. Company members, who are sufficiently senior to have ready access to CEOs and capable of driving the company end of the work programme are crucial to the Group's success.

7.1.8 Given the success of Viper, the Government has recently extended the model to the construction, chemicals and retail sectors. **The Government is committed under this strategy, supported by industry, to extending the model further to include the food manufacturing, retail, wholesale and service sectors**.

7.1.9 We want to ensure that the principles of better regulation are rigorously applied to food, nutrition and health, environmental and other legislation applicable to the sector. This includes the implementation of regulatory proposals, to avoid potential problems of 'gold plating', i.e. unnecessary regulation.

7.1.10 Defra is also committed to working with the Cabinet Office Regulatory Impact Unit and the Small Business Service in areas not covered by the proposed Food Industry Better Regulation Group (FIBR) to **ensure that RIAs and Small Firms Impact Tests are prepared for legislation** affecting the food industry. Equally, industry is committed to playing a fuller and more active part through the provision of information about regulatory proposals and their impact. To be effective, it is essential that this be done, particularly in relation to EU regulatory proposals, at the early stages of the regulatory process.

How will we measure progress?

7.1.11 National Audit Office evaluations of the quality and thoroughness of a sample of RIAs will help to identify learning points. Also, as from 2004, Whitehall Departments are expected to report their performance on better regulation in their annual departmental reports.

7.1.12 A Key Performance Indicator under the FISS will be the early establishment of the FIBR. A more subjective indicator, to be assessed by annual reviews, will be the degree of commitment from industry and regulatory participators to the group and its impact upon the regulatory landscape.

Annex I: Membership of the Food Industry Sustainability Strategy Stakeholder Group

Association of Independent Meat Suppliers
Association of Convenience Stores

British Beer & Pub Association
British Frozen Food Federation
British Hospitality Association
British Meat Manufacturers' Association
British Poultry Council
British Retail Consortium
British Soft Drinks Association

Cold Storage & Distribution Federation
Countryside Agency

Dairy UK (formerly Dairy Association Ltd)

Environment Agency

Federation of Wholesale Distributors
Food & Drink Federation

Gin & Vodka Association
GMB Trade Union
Government Office for the Regions

Hotel & Catering International Management Association

National Consumer Council
National Farmers Union

Provision Trade Federation

Royal Society for the Protection of Birds

South West Regional Development Agency
Sustain
Sustainable Development Commission

Transport & General Workers Union
Trades Union Congress

Union of Shop, Distributive and Allied Workers (USDAW)

Wildlife & Countryside Link

Annex II: Snapshot of the Environmental Evidence Base

Energy Data

Data availability on energy is good at the aggregate level. Annual data by fuel type is available from the DTI and energy use/CO_2 emissions estimates are available from CCAs and the EU Emissions Trading Schemes (EUETS).

The food and drink industry (excluding tobacco companies) accounted for 11% of the UK industrial (non-transportation) energy consumption in 2002 (nearly 100 TWh per year). It is, therefore, a major contributor to UK carbon emissions (7.9 million tonnes of carbon per year).

The manufacturing sector accounts for about 27% of food chain primary energy use, again excluding transportation use. Primary energy consumption for the food chain as a whole is estimated as 240 TWh, as follows:

- Domestic 39%
- Food and drink manufacturing 27%
- Catering 21%
- Agriculture 8%
- Retail 5%

Some decoupling of energy use and productivity has been seen for the food, drink and tobacco sector over the period 1990 – 2002. Direct energy consumption reduced by 7.2% while over the same period output increased by 1.7%.

Although there is a significant amount of data available for the manufacturing sector, the retail and service sectors are also significant in terms of energy use. Robust data on energy use does not appear to be available for these sectors and specific measures need to be implemented to improve our understanding of environmental performance and help set the level of ambition in these sectors.

Water Data

The water use data used within the strategy (paragraph 4.3.1) is based on Environment Agency actual abstraction data,[75] which is broken down to public water supply and other sectors. This data is based on annual abstraction returns sent to the Agency for 1997/1998. We have accounted for direct abstraction from the food and drink sector and public water supply used by the sector.

Envirowise studies have also produced some data on water use, for the industry as a whole and for some manufacturing sub-sectors. The programme is generally focused on SMEs and although the findings provide useful indications of sub-sectoral water use and diversity, they do not provide sufficiently robust data to be used as benchmarks or inform the development of targets.

75 Water Resources for the future: A strategy for England and Wales, Environment Agency, March 2001

The level of diversity between sub-sectors is such that a sub-sectoral approach to environmental improvement may be needed.

There is a lack of available data on effluent, beyond an estimate from Envirowise that the industry produces a total of 20 million m^3 of effluent per year.

Further investigation is necessary to gather more robust data, representative of all key manufacturing sub-sectors and a key aim of the water resources aspect of this strategy is for the food industry to establish this.

Waste Data

As is the case with much of industrial and commercial waste, there is uneven data on the food industry's wastes.

There are overall estimates of the sector's waste production, and detailed data for packaging waste in the case of larger companies obligated under the packaging waste regulations. However, there is a lack of robust data on the production and management of wastes at a sub-sectoral level, or information on other wastes. Information from Envirowise suggests that levels of waste reuse, recovery and recycling vary considerably across sub-sectors.

The food, drink and tobacco industry generated approximately 8.6 million tonnes of solid (factory back door) waste in the UK in 1998/99, equivalent to 19% of industrial waste arisings. Of this waste, approximately 44% is recycled and 37% sent to landfill (EA Waste Survey 1998-1999).

Packaging and food waste are the two most significant waste issues for the industry. In terms of sales, supplies of packaging to the food and drink industry were estimated to be worth £5.8 billion in 1997, representing around 53% of the total value of the packaging industry at that time (Envirowise data summary June 2004). Although this does not directly correlate with tonnage, it does indicate the significance of the food industry in the packaging lifecycle.

Data from one packaging compliance scheme indicates that total amounts of packaging handled by the food industry has increased by 41% between 2000 and 2003, although producer obligations to recover packaging waste have also increased similarly. Relative improvements, for example in the amount of packaging per tonne of product, have so far been insufficient to compensate for overall growth in the industry.

Annex III: A Case Study at Beefeater

Part of the Whitbread Group, Beefeater with almost 200 outlets, is the biggest full service restaurant group in the UK. An average Beefeater restaurant has some 8,000 covers a month and a typical electricity bill in 2004/05 of c.£14,000.

A planned restaurant refurbishment programme gives a chance to raise significantly the restaurant chain's energy conservation specifications on its properties and carry out environmental improvements, which historically may have been outside a normal focus on refurbishment. Many of the outlets are thermally inefficient as they are old buildings.

Action taken

Using refurbishment opportunities to make efficiency savings

Typical work carried out in each outlet is:

- Insulating all accessible roof spaces
- Draft proofing exit doors to cold rooms & cellars
- Installing daylight sensitive lighting
- Installing PIR (passive infra red) movement sensors (e.g. for lighting)
- Better control of ventilation extract
- Installing timers on air conditioning and similar electrical systems to ensure they are only used when needed
- Use of digital room thermostats to control room temperatures efficiently
- Heating system insulation and reflective panels behind radiators
- Ensuring that flush controls in toilets work properly

Project Managers are required to complete a pro forma of details on all work carried out, within 4 weeks of completion, so that energy and CO_2 reduction benefits can be tracked and quantified.

Achievements and Benefits

- Funding was 'ring fenced' at £1,800 per project.
- Completing the work as part of a bigger refurbishment helps eliminate disruption that would be faced if improvements were carried out during normal trading periods, takes less time and costs less.
- When a refurbishment takes place, a new lighting layout and improvements to air conditioning form part of the change. Trade also grows significantly. As a result it is difficult to isolate precise energy savings, but draft exclusion, insulation and water or time controls reduce usage by established norms.
- This activity has contributed to Whitbread's 2.7% reduction of energy used in 2004/05 which represents a reduction of 10,600 tonnes in carbon dioxide emissions.

Annex IV: A Case Study at Marriott Hotel

Huntingdon Marriott Hotel, Cambridgeshire (part of Whitbread Group plc) has 150 air conditioned bedrooms, 7 air conditioned meeting rooms for up to 250 people, a heated indoor swimming pool, a turnover of £6.1m and 110 full time equivalent employees.

A self-assessment health-check (see http://www.greenglobe21.com/) used in conjunction with a TRI benchmarking exercise (a generic benchmarking tool for hoteliers comparing like for like statistics with other similar hotels e.g. utility costs and occupancy) revealed that there were opportunities for better management of energy, water and waste.

Action taken

Staff training and awareness raising

No/low cost measures: The general manager realised that one of the key factors in improving performance was to engage better the hotel's employees to take action voluntarily and to encourage them to act in a more environmentally responsible way. Through regular Green Globe team meetings, an action plan was produced in both written form and pictorially as a large proportion of the hotel staff use English as a second language.

The plan included actions such as:

- making sure air-conditioning is turned off when meeting rooms are not in use;
- recycling newspapers;
- making sure that only the towels the guest wished to be laundered are laundered; and
- further activities concerned with energy efficiency, conservation and management; water management; social and cultural issues; land use and management; noise control; waste minimization, reuse and recycling and storage and use of hazardous substances all form part of the Green Globe agenda.

Departmental champions are assigned responsibility for specific task areas. Green Globe audits (a condition of accreditation) are undertaken annually. Audits are carried out on a national scale for Whitbread at an average cost of around £1000 per annum per hotel.

Energy efficiency in meeting rooms

No/low cost measures: Energy saving room cards were installed in the hotel's meeting rooms. Similar to key cards for the bedrooms, they are inserted into a special slot within each room before lights can be activated, thereby saving energy when rooms are not in use.

The meeting room energy controls were installed as part of an improved service contract - but would also have been available at a one off cost of £500.

Achievements and benefits

- The cost of the providing training/guidance and implementing subsequent good housekeeping measures is minimal.
- Employees were so successfully motivated that they also set up a scheme to collect the hotel's plastic cups in order to send them to be recycled into pencils.
- All Marriott hotels operated by Whitbread now have Green Globe accreditation. http://www.greenglobe21.com/
- The utility cost per occupied room was reduced by nearly 5%, impacting directly on the bottom line.
- This activity has contributed to a reduction in Marriott hotels of 16.5% in gas and 7.4% in electricity in the year up to 28 February 2005 and to Whitbread's 2.7% reduction of energy used in this period which, represents a reduction of 10,600 tonnes in carbon dioxide emissions.

Annex V: A case study at Walkers Snack Foods Ltd

Walkers Snack Foods Ltd, which is owned by PepsiCo, manufactures crisps and other snacks at various sites in the UK. This case study concerns the Peterlee site in County Durham, employing approximately 450 staff. Senior management at the site carried out a thorough review of manufacturing operations aimed at improving total process efficiency. Following this, a series of management initiatives were put in place to develop a self-sustaining waste minimisation culture involving all members of staff.

Action taken

Developing a waste minimisation culture

No/low cost measures: Walkers' belief in the 'ownership concept' is based on its observation that collective responsibility tends to lead to acceptance of the lowest tolerable standard. The company has overcome this problem by making individuals responsible for items of plant that they operate or areas in which they work. Management responsibility has been moved to those who were previously managed; shift managers have been given budgets and performance targets for production, quality and utilities, while packaging technicians and multi-pack team leaders are now accountable for waste packaging and waste product. Achievement is measured by monitoring performance against budgets and targets. Walkers have observed that assigning 'ownership' tends to encourage individuals to adopt a more responsible attitude towards their item of plant or area of the factory.

The factory is well equipped with monitoring equipment, ranging from cost and yield to utility sub-metering. Monitoring data generated by the simple, but comprehensive, data collection and reporting system are used to:

- set demanding, but realistic, targets;
- check performance against targets;
- feed results back to key employees; identify deteriorating performance; and
- review targets in line with business changes or annually.

This ability to apply conventional management control techniques to almost every aspect of the manufacturing process has improved production efficiency and has led to: raw material savings; reduced water, gas and electricity use; reduced solid waste and effluent production; and increased quality and service to customers.

Waste minimisation is a fundamental element of all training programmes at the Peterlee site. Training is now the responsibility of shift managers and is chargeable to their budgets. Walkers also operate a thorough management appraisal system, which includes accountability for waste generation; this is also emphasised in the appraisal process for operating teams.

A forum for discussing new ideas and learning about efficient methods has been created by setting up action teams comprising a cross-section of staff from the whole factory. This initiative has also improved communications between different shifts and other factories in the Group. The action teams have identified many small, low-cost modifications which have reduced costs while improving production efficiency and working conditions.

As part of a Company-wide training initiative, a site newspaper has been set up. Called 'The Peterlee World', it has proved an excellent vehicle for promoting the corporate image and cultural change message. The newspaper also publicises major technical innovations and personal achievements.

Waste segregation

No/low cost measures: Effective waste segregation is achieved using wheeled waste collection bins distributed throughout the factory. These are colour-coded according to the appropriate waste skip. Segregated waste is transported in a hygienic manner through the factory before being compacted for off-site disposal. The waste handling area is now clean and tidy, more accessible, well-lit, weatherproof and separate from other factory operations. This in turn has resulted in an immense improvement in working conditions. Better segregation of general factory waste also means that various waste streams can now be sold to waste recycling companies rather than being landfilled.

Annex VI: A Case Study at the Purfleet Margarine Factory

The Unilever UK Foods Ltd Purfleet factory employs 280 people and produces over 250,000 tonnes of margarines and spreads per year, including Flora and Proactive, for the home and export markets. In 1999 the factory produced 740 tonnes of solid waste and waste reduction was identified as one of the key activities to achieve improved productivity. The factory has ISO 14001 and operates a Total Productive Maintenance (TPM) continuous improvement programme, which involves all employees in continuous improvement activities with the aim of zero losses. These programmes were used to help identify the waste reduction measures outlined below.

Action Taken

Waste reduction and recycling

No/low cost investment measures: In order to identify and prioritise areas for waste reduction, a detailed analysis was undertaken by a factory waste reduction team using TPM techniques. First they analysed current performance by assessing types of losses, reasons, equipment, processes and costs, and set targets for improvement. Then, using detailed production line real time data, they developed a 'Waste Loss Tree' which identified areas of largest loss for each production line and part of the process. This information was used to prepare an action plan, which listed all of the projects identified by the team in order of priority, the timing and savings.

The study revealed that the greatest product losses were occurring when production line brand changes were taking place. In order to ensure that the process lines were completely clear before introducing the new brand a large amount of the previous brand material was being discharged to waste and a line can have several brand changes per shift.

In order to optimise the brand change-overs a detailed analysis of change over times was undertaken and it was found that the actual time could be reduced, typically from 10 minutes to 6 minutes 30 seconds, allowing more of the outgoing brand to be packed rather than being sent to waste. In order to achieve this, optimum times were calculated, and trials conducted with relevant sampling and testing, before changing software and timers accordingly. By implementing these measures on all lines total product cost savings of about £300,000 per year were achieved, with a minimal investment of about £4,000 for new timers.

The factory has always aimed to maximise recycling in support of its ISO 14001 improvement programme and in 1999 achieved a 41% recycling rate for wastes arisings on site. Using the TPM waste loss analysis techniques, further recycling opportunities for wood, ingredient big bags, computers, plastic cups, waste oils and plastic packaging were identified and recycling targets were set. It now achieves a 53% recycling rate for all waste arisings on site; this includes recycling 24 different waste types.

Waste reduction and re-use

Higher investment measures: In order to further reduce product losses a recovery tank system was designed and fitted to each of the production lines which would recover product at start up, brand change over and packed product stages. Now when there is a brand change the new brand pushes the outgoing product through the pipework and into the recovery tank until all of the previous brand is discharged. The recovered product is then re-included into the next suitable product at a controlled percentage, thus avoiding any financial loss. The system, which is fully integrated into the line control and CIP systems, was subjected to complete HACCP analysis and sensory testing during product re-inclusion trials to ensure that there was no loss of product quality. It cost £180,000 to install the system on the first 2 production lines which have produced savings of £500,000 per year. The system is now being installed on other suitable lines in Purfleet as well as other Unilever margarine factories across Europe.

Margarine tubs and lids were originally transported to the factory from the suppliers in corrugated outer cartons which, after use, were disposed of to landfill or sold for recycling. A factory team working with the suppliers developed a carton design, which had Velcro fastening so that after it was emptied it could be collapsed down flat for ease of transport and handling. These new style cartons, which cost 4 times as much, are now returned to the suppliers for re-use between 15 and 20 times, saving £350,000 per year.

Annex VII: A Case Study at J.W. Lees & Co. (Brewers) Ltd

JW Lees and Co was founded in 1828 and is a small, family-owned brewery employing over 160 staff in Middleton Junction near Manchester. The company produces about 86,000 barrels a year. In 1993 JW Lees and 13 other companies in the Mersey basin participated in Project Catalyst, a regional waste minimisation initiative designed to achieve and promote cost-effective cleaner production amongst businesses. Recognising that water consumption, beer losses and trade effluent charges were above the industry average, the Company installed meters to measure water consumption and effluent discharge in the main process areas. It then implemented a range of associated good housekeeping and low investment measures to improve the efficiency of water use.

Action taken

Water metering

Higher investment measures: Aware that accurate measurement is an essential first step to control, the Company employed a graduate trainee to map the water system, supervise the installation of new water meters for each main production/office area and monitor subsequent consumption. The cost of employing the graduate and new meters was £14,000.

Data provided by the meters allowed the Company to focus efforts where the greatest water savings could be made.

Water-saving measures

No/low cost investment measures: The water supply to the cask washer was switched manually between the washwater tank and a direct mains supply, depending on the volume stored in the tank. No formal procedure existed for selecting the supply and, sometimes, stored hot water was ignored, eventually overflowing to drain. A meter installed on the overflow indicated a significant level of waste. Following a study of the daily pattern of hot water availability, the supply is now switched to the washwater tank at 10:00 hrs daily. Cost savings for water and energy consumption, and trade effluent disposal worth £15,000 have been achieved for no capital outlay.

Cleaning operations were closely supervised for a three-week period. By improving procedures, an immediate water saving of £18,000/year in reduced water and effluent charges was achieved. This no-cost measure illustrates the benefits that can be achieved when plant operators are aware of the need to control water, energy or materials use.

In two instances, continued water use during non-production periods was traced to faulty control valves. Three faulty valves on the bottle washer caused the water tanks to overflow continuously to sewer. These were immediately replaced, saving an estimated £13,000/year in water and trade effluent charges for a one-off cost of £400. Similarly, faulty valves on the emergency cooling supplied to the refrigeration plant were found to be running 250m^3 of water to waste each week. Valve replacement at a one-off cost of £350 reduced water and trade effluent charges by a further £15,600/year. Fitting a new float-operated top-up valve at a low level in the washwater

tank has minimised both the overflow of hot water to waste and the quantity of cold top-up water required. The one-off cost of this alteration was £2,000 for the valve plus minor modifications to the tank and pipework. The savings in water, energy and trade effluent disposal charges were worth £5,000/year.

Higher investment measures: The original system of cask filling, which was done manually, wasted a lot of beer and gave rise to high trade-effluent costs. The company has now purchased a modern, semi-automated system allowing casks to be filled with a pre-set volume of product. The investment of £28,000 was recouped in just two years from the elimination of beer losses alone. The payback period is likely to reduce because of savings in trade effluent charges and unquantified productivity increases.

New cask washing equipment was installed at a cost of £63,500. High efficiency nozzles are used in the new washer to direct pressurised water on to the barrels. This has improved the efficiency of the washing process, reduced cold water consumption by 80% and hot water consumption by 17%. The associated cost saving is £8,600/year, with further savings resulting from lower labour costs and a reduced rate of returns. The payback period for the new washer is estimated at 2-3 years.

Annex VIII: A Case Study at Whitbread

Whitbread plc is the UK's leading leisure business, managing hotels, restaurants, sports, health and fitness clubs. In 2001, Whitbread's annual energy bill was in excess of £40m and this was identified as a major target for efficiency savings.

There are over 4,500 utility billing points throughout Whitbread's 1,400 properties, and a wide variety of control and management systems in place, many involving complex 24/7 site activity. Sites vary in scale from small Costa coffee operations to international scale venues. Additional complications include shared meter sites and thermally inefficient, old buildings, some built in the 13th century.

Ways of comparing statistics vary: by membership for health and fitness; by available room nights for hotels and by covers for restaurants.

Action taken

Improving data accuracy

Establishing model profiles identified areas of potential over consumption. In the case of similar restaurants or hotels, for example, if the buildings are virtually the same, energy consumption can be estimated relative to turnover and climate. Exceptional profiles helped to focus further action to establish whether the levels of consumption indicated by monitoring data were accurate, including:

- energy bill validation and verification, including discussions with utility providers; and
- undertaking a meter installation project to bring sites up to a standard that would allow effective data collection and analysis

The meter installation project included extending installation of half hour electricity meters to almost all sites (60% already had half hour meters) and installing independent metering of gas and water in large sites.

Data was then collected from all meters on a daily basis to build 'half hour' usage profiles, giving a full understanding of how energy is used throughout each day for each outlet metered. Using this data and working with suppliers, a new reporting system was developed which resulted in accurate billing data being available much more quickly. This allowed for automatic adjustment of incorrect charges – in effect 'self billing'.

Obtaining better data not only resulted in savings through more accurate bills, but also allowed for better housekeeping practices and more successful energy efficiency programmes based on actual rather than estimated data.

Achievements and benefits

For a cost of less than £500 per meter fitted per site (in addition to a small annual management charge per site for automated reporting), the benefits were:

- reduction in energy costs across the total group of over £3.0m in first year;
- over £1.2m claimed back through incorrect billing of energy and water;
- re-negotiation of group tariffs, ensuring on-going savings of £1.0m per year for energy;
- reduction in water costs of £0.4m over the year through reduced leakages and wastage
- 'Self billing' of electricity;
- ability to set up annual budgets for sites based on accurate historical data rather than estimates and hence deliver on-going improvements; and
- ability to import data from the energy database directly into the accounting system and P&L reports.

This activity contributed to Whitbread's 2.7% reduction of energy used that year, which represents a reduction of 10,600 tonnes in carbon dioxide emissions.

Annex IX: A Case Study at Bourne Salads (Geest plc)

Bourne Salads was acquired by Geest plc in 1989 and a £20 million investment saw the completion of a new factory in October 1997. There are currently 550 employees working on a site that has expanded its operations considerably to keep pace with dynamic growth in the leafy and convenience salads sectors.

To enable future compliance with discharge consent conditions limiting the volume of effluent discharge, Bourne Salads entered into partnership with Aquabio Ltd (Worcester) to install a water treatment system that could be expanded on a modular basis to suit the growing business. Although not a primary driver for the project, the prospects of water re-use and process water discharge to a watercourse were seen as attractive benefits, providing a three to four year payback.

Action taken

Water management

Higher Investment measures: Following a successful pilot trial in 2003, the company invested in a turnkey wastewater treatment and water recycling plant based on advanced membrane bioreactor (AMBR) and reverse osmosis technology. AMBR involves an intensive aerobic biological process using membrane separation in place of conventional settlement techniques. The resultant treated water is bacteria-free, but is treated to potable standards by a further process of reverse osmosis and ultraviolet disinfection.

The new treatment plant has enabled a significant reduction in the volume of effluent discharge, to well within the discharge consent limits. This has released capacity for the site to expand production in the future, with a high proportion of the treated water being of good enough quality to go into the watercourse and potable re-use in the factory, as well as providing substantial cost savings. The operation is fully automated with a Programmable Logic Controller (PLC) and data logging of key process parameters; furthermore operators do not require specialist knowledge in wastewater treatment.

Installation of the new plant has also resulted in the following benefits:

- the volume of incoming mains water has reduced by around 45% with a financial saving of approximately 55 pence/m^3;
- 450m^3/day of treated water is re-used by re-circulating within the factory, reducing the volume of trade effluent by an equivalent amount;
- in addition to the financial savings in mains water costs, the reduction in the volume of trade effluent has reduced discharge costs giving ‘double’ savings and increased return on investment;
- the design enabled re-use of a high proportion of the existing infrastructure;
- the ‘out of tank’ modular biomass separation system reduces maintenance and gives clean operating conditions;
- organic load reduction is achieved almost exclusively in the biological stage, minimising chemical use in the process; and

- an overall improvement in water quality is achieved (i.e. the reverse osmosis/ultraviolet treated water is cleaner than the incoming mains water).

Will Rose, Engineering Manager at Bourne Salads commented "through successful collaboration with Aquabio Ltd, Bourne Salads has managed to address key problems associated with its wastewater treatment on-site and reduce its dependence on the local effluent sewer."

In summary, the project has delivered attractive financial savings on both incoming and outgoing water costs with an overall annual saving of £253,000.

Annex X: A Case Study at Taw Valley Creamery

Taw Valley Creamery in North Tawton, Devon employs 120 people in the manufacture of cheese, whey products and butter. The creamery is accredited to ISO 9000:2000 and ISO 14001 standards, both of which help drive continuous improvement in the business. Investigations identified two aspects of the operation where a significant quantity of solid and liquid waste was generated.

Action taken

CIP optimisation

Higher investment measures: Whey, a by-product of cheese making, is concentrated using an evaporation stage prior to spray drying to make whey powder. The evaporators are regularly cleaned in place (CIP), which involves flushing out residual concentrated whey prior to detergent cleaning. An investigation revealed that a significant quantity of whey was being lost to drain when the evaporator was taken off-line for CIP. Bench-scale tests were carried out with different strengths of whey solution and a turbidity probe was identified as the best option for detecting recoverable water/whey mixtures.

A turbidity probe was installed at the end of the fill line to the concentrate tank, as part of an automatic recovery system. The cost of installation was £11,000. The probe detects the presence of water/whey mixtures and sends this information back to the control system. Recovery of concentrated whey to the whey storage tank is controlled via a densiometer, while the turbidity probe controls the recovery of the water/whey mixture to a separate tank. The mixture is subsequently mixed with raw whey to be reprocessed. When the turbidity is between certain set points indicating the presence of whey, the flow is automatically diverted to the recovery tank. When the detergent cycle starts, the probe signal is overruled to ensure no acid or alkaline detergent is diverted into the whey tank. Contamination of the recovered whey is avoided and only clear or detergent-containing water is discharged to drain.

Training was provided for operators to make them aware of how the new system operated and its benefits. Operating costs are negligible and the turbidity probe requires little maintenance. The probe is cleaned in place when the main evaporator is cleaned. Planned maintenance is performed annually. The system is designed to be fail-safe. The installation resulted in cost savings of around £16,000/year, increased product yield, less whey lost to drain, lower effluent treatment plant costs and a payback of 8 months on combined capital and installation costs.

Each stage of the cleaning-in-place (CIP) cycle was previously controlled by individual timers, which resulted in significant quantities of detergent being discharged to drain. To minimise the amounts of water and detergent discharged to drain, the company investigated conductivity measurement to improve control of the CIP system.

A conductivity probe was installed in the main line from the process equipment, close to the detergent tank inlet, to monitor the detergent/water concentration flowing through the line during a cleaning cycle. The cost of installation was £17,000. Detergent cleaning is initiated by a timer and detergent gradually replaces the flush water in the system, which is diverted to drain.

Once a set detergent concentration is detected, the conductivity probe signals an actuator to close the drain valve. The flow is then diverted back to the detergent tank and circulated through the system, rather than being discharged to drain. The third (rinse) stage is then initiated by a timer; detergent is recycled back to the detergent tank until dilution has occurred and the set detergent concentration is reached again. At this point, a signal from the conductivity probe opens the drain valve and the rinse water is discharged to drain until the probe detects clean water again. The drain valve is then closed and the clean water diverted to the water tank.

The conductivity probe also ensures that the required detergent strength is maintained throughout the clean. If the strength drops below a preset minimum, circulation is continued while the detergent strength is increased automatically to the required level. Benefits of the improved CIP control system include: estimated 15% saving on detergent for each CIP set, worth £13,000/year; reduced amounts of water and detergent discharged to drain; reduced downtime of equipment due to shorter cleaning cycle; optimised quantity of detergent used for each cleaning cycle; payback period of 16 months.

Annex XI: A Case Study at the Burton Marmite Factory

The Unilever UK Foods Ltd. Burton Plant employs 260 people and produces around 10,000 tonnes of products per year, primarily Marmite spread, Bovril and other food ingredients. Factory water and effluent costs exceed £270,000 per year and are expected to rise significantly over the next few years. The effluent treatment plant is near capacity and so every opportunity is taken to reduce overall water consumption and effluent plant loading.

The factory has ISO14001 and operates a Total Productive Maintenance (TPM) continuous improvement programme that encourages employees to identify and implement improvements. These programmes were used to help identify the savings opportunities and improvement ideas outlined below.

Action Taken

Water-saving/effluent management

No/low cost measures: All operators received ISO 14001 training relating to the environmental aspects of the factory operations. This included the provision of information on the costs associated with water use and effluent treatment, in addition to raising awareness of the need to minimise water use and avoid spillages. One of the initiatives from the training and the TPM programme was the fitting of trigger nozzles to all hoses within the plant and the removal of hoses from certain parts of the production area in order to avoid water over-use and to concentrate on avoiding spillage.

Higher investment measures: Cooling-tower water blow-down: During the evaporation stage, the condensers are supplied with cooling water from recirculating systems where the water is cooled by forced air through cooling towers. Evaporative water loss occurs from the cooling towers and as a consequence salt concentration increases. In order to counter the adverse effects of salt build-up (leading to scale development etc.), a quantity of water is removed from the tower via a blow-down system and is replaced with fresh water. The blow-down was regarded as waste water and discharged directly to the site effluent treatment plant.

Another part of the process within the factory employs a vacuum system and the vacuum is created by pumps that require water for the seals. The pumps run 24 hrs per day for about 350 days per year and consume 44 litres of water per minute.

In order to reduce mains water consumption within the plant, the blow-down from the cooling towers was diverted and used to supply the pump seals before discharge to drain. The cost of the pipework and pumps was £15,000 and it is estimated that the water saving was about 20,000m^3 per year resulting in a cost saving of £13,000 per year.

Yeast cell rinsing operation: Marmite is made from yeast, a by-product of the brewing industry. An early stage in the manufacturing process is centrifugation combined with a yeast-cell rinsing operation. The operation is carried out in order to remove cell-wall material from the yeast extract and to maximise product recovery. Mains water was traditionally used for the rinsing. At a later stage, water is evaporated from the product in order to increase concentration. The resulting condensate was disposed of to drain via the site effluent treatment system.

It was decided to recover the evaporator water and reuse it for the rinsing operation. Pipework and pumps were installed, at a cost of £20,000, to collect the condensate recovered from the evaporation stages and to deliver it to the centrifuges, via a holding tank, as rinse water. Mains water supply was maintained for the occasions when evaporators were not running.

Water savings of 10m^3 per hour were achieved together with a corresponding reduction in the volume of effluent. This resulted in a financial saving of £43,000 per year in water supply and effluent treatment costs. The recovered condensate was hot, therefore some reduction in heating requirements were also achieved but not quantified.

Annex XII: A Case Study at Northern Foods plc

Northern Foods plc has an annual turnover of approximately £1,500m and employs around 22,000 people. The business produces chilled, ambient stable and frozen foods for the retail market; the largest part of the turnover is in chilled foods.

To meet chilled food product safety and quality requirements, it is critical to monitor product temperature accurately. Typically, handheld thermocouple based probes are used to monitor product temperatures. This measurement method is invasive. The probes are inserted into the food, which then must be disposed of as waste. Northern Foods estimated the cost of that product loss, disposed of as waste, to exceed £0.5m per year. In addition, other problems associated with the use of handheld probes included the potential for inconsistent measurement technique and the cost of probe breakages.

The need for a non-invasive temperature monitoring technique was met with microwave radiometry. This technique, used in medical applications, was a subject for research at Glasgow University.

Action Taken

Northern Foods embarked on a collaborative project with Glasgow University to investigate the use of microwave radiometry in food products. The company part funded a 2-year post doctorate research project at a cost of approximately £175,000. The prototype instrument developed by Glasgow University measured the microwave energy emitted by a food and converted that energy into a temperature reading. The prototype was tested with a broad range of foods and in different Northern Foods factory environment conditions.

Loma Scientific, a manufacturer of specialised monitoring and measuring instruments, now market the patented technology for non-invasive measurement of chilled and frozen food temperature as "Celsius". Celsius is available at a typical cost of around £22,000 per measurement unit.

Benefits

The benefits of introducing this innovative technology are:

- substantial cost savings – through reduction of product waste;
- increased food quality and safety assurance – through continuous monitoring of food temperature;
- consistent measurement technique – reduced potential for operator error; and
- accurate temperature results – quickly and easily.

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