

get the

REWARD

Regional & Welsh Appraisal of Resource Productivity & Development

SEA supplementary briefing

SEA OPTIONS EXAMPLES

Supplementary briefing for users of the SEA
illustration contained in the REWARD
website – www.reward-uk.org

CONTENTS

1	Transport.....	3
1.1.1	<i>Congestion charging.....</i>	<i>3</i>
	<i>London Congestion Charge: Summary of report “Congestion Charging - 6 Months On”</i>	<i>3</i>
1.1.2	<i>Transport / Travel Plans.....</i>	<i>7</i>
2	Water demand	11
2.1.1	<i>Water Savings.....</i>	<i>11</i>
3	Energy Efficiency.....	12
3.1.1	<i>Energy Efficiency.....</i>	<i>12</i>
3.1.2	<i>Deepdale Farm - Old Stables to Low Energy Hostel.....</i>	<i>13</i>
4	Waste Management	15
4.1.1	<i>Waste Management - Examples.....</i>	<i>15</i>

1 Transport

1.1.1 Congestion charging

The **London Congestion Charge** has produced dramatic changes, for example:

- car movements have reduced by about 30%
- buses and coach movements have increased by around 15%, allowing new services to be introduced
- pedal cycle movements have increased by around 30%
- Traffic delays reduced by 30%

More details are at **Annex 1**.

German Lorry Tolls: from 2005 in Germany lorries over 12 tonnes will pay a charge per kilometre based on size and engine emissions. The logic behind this is:

- Heavy goods vehicles (HGVs) are responsible for a disproportionately high share of the costs of construction, maintenance and operation of motorways - road wear from a 40 tonne HGV can be up to 60,000 times higher than that of a car
- To move funding from tax revenue towards a fairer "user pays" system
- To introduce fairer competition for road and rail modes and encourage shifting goods traffic from road to rail or inland waterway

Back in the UK, a new section of road in the notorious Birmingham M6 congestion black spot has been opened as a toll road. It is estimated that the **M6 Toll** will reduce journey times on the M6 by up to 45 minutes, make the road safer, faster and more reliable, and is expected to have a trickle down effect reducing traffic congestion, noise and environmental impacts in surrounding sub-urban areas.

Links:

<http://www.cclondon.com>

<http://www.cfit.gov.uk/congestioncharging/factsheets/lorry>

<http://www.m6toll.co.uk/about/benefits.asp>

Congestion Charging – Further details

London Congestion Charge: Summary of report “Congestion Charging - 6 Months On”

This summary is based on a press release from Transport for London (<http://www.tfl.gov.uk/tfl/press-releases/2003/october/press-818.shtml>). The full report (42pages) is available to download from the Transport for London website: http://www.tfl.gov.uk/tfl/cc_intro.shtml

The congestion charging scheme directly tackles four key transport priorities for London: reducing congestion; improving bus services; improving journey time reliability for car users; and making the distribution of goods and services more reliable,

sustainable and efficient. It has also raised significant funds to improve London's transport system.

Transport for London's congestion monitoring report, *Congestion Charging: Six Months On*, provides the latest information on the operation and enforcement of the scheme and its effects on traffic levels, congestion, public transport and people coming to central London.

Key Findings

The report concludes that:

- congestion in the zone has dropped by around 30% - at the high end of TfL's expectations; congestion is now lower than at any stage since the mid-1980's
- the number of motor vehicles entering the zone during charging hours has dropped by 16%
- car journeys to and from the charging zone are quicker and more reliable - car journey times have decreased by an average 14% and reliability has improved by an average of 30%
- public transport is coping well with the increased number of ex-car users
- bus services are benefiting from the reduced congestion
- no significant traffic displacement around the zone has been observed
- provisional data suggest a 20% reduction in the number of accidents within the zone
- driver responses to charging appear to have settled
- the various payment systems are working satisfactorily
- call centre enquiries have fallen from an average of 167,000 calls per week to 70,000
- since the start of charging, penalty charge notices (PCNs) have been issued at an average rate of 106,200 per month
- payment rates for PCNs have steadily increased. 61% of those issued in August were paid by the end of September
- the percentage of representations received in response to PCNs have fallen from 62% to 16%
- although the net revenues from the scheme are less than anticipated, over £68million in net revenues will be raised in 2003/04 and £80million to £100million in future years for reinvestment in further transport improvements
- the public remain supportive of the scheme

Reduced Traffic Levels and Congestion

Six months on, TfL's surveys show 50,000 fewer cars per day are being driven in the charging zone, with the majority switching to public transport or other modes of transport such as bicycles, scooters and car sharing; or diverting around the zone, resulting in only 4,000 fewer people coming to the charging zone.

Traffic delays have been reduced and the increased public transport capacity is successfully accommodating new bus passengers.

More than 50% of London residents support the scheme, around 30% oppose it.

Congestion levels within the charging zone are now lower than at any stage since the mid-1980s, and the number of four-wheeled vehicles entering the zone, the main cause of congestion, has dropped by 16%. This has cut the amount of time drivers spend in queues; cut journey times; increased average speed; and may have cut accidents.

The cut in congestion could now save an average of ten minutes on an 80-minute round-trip to the zone. TfL's target of reducing traffic delays in the zone by 20-30% has been achieved with a fall of around 30%.

Public transport is coping well with the increased number of ex-car users. TfL increased bus capacity to accommodate the 15,000 extra bus passengers travelling to the congestion charging zone during the morning peak period. Further bus operations are more reliable than before, with excess waiting time at bus stops reduced by a third, and lost kilometres due to traffic delays cut by 60%.

A reduction of 30% in car movements to the zone slightly exceeds TfL's original expectations. Taxi movements have increased by 20%, more than TfL expected; van and lorry movements have decreased by 10%, slightly more than expected; and cycling has increased by 30%, although the favourable spring and summer weather may also be a factor.

Small changes of between -7% and 7% in orbital traffic levels outside the charging zone have been measured. However, no significant traffic displacement to local roads around the zone has been observed.

Provisional data for reported accidents inside the charging zone during charging hours suggest an approximate 20% reduction compared to the same period in 2002. Concerns raised about potential increases in two-wheeled vehicle accidents (particularly motorbikes) seem to be unfounded. However, TfL will be closely monitoring the situation to assess whether these early indications are sustained.

Economic Impact

Concerns over the detrimental impact of charging on economic activity appear to have been misplaced. Fewer people are now coming into central London for a variety of reasons. The 'Footfall Index', a measure of people visiting retail centres, indicates a 7 percent year-on-year decline within the charging zone, and that retail activity in central London during the first half of 2003 was notably lower than the equivalent period in 2002.

Approximately 70,000 fewer people are coming into the zone by all forms of transport compared to Spring 2002, when an estimated 1.6million people made journeys into the charging zone. Since 85-90% of people coming into central London travel by public transport, the relative impact of reduced car users is minimal. It is estimated that the congestion-charging scheme is only responsible for around 5-7% of the overall reduction in people coming into the charging zone.

Furthermore, reduced traffic delays, improved journey time reliability, reduced waiting time at bus stops, and lower fuel consumption resulting from congestion charging all have economic benefits which should assist business.

Transport for London will continue to develop its assessment of the economic impacts of the scheme through the ongoing monitoring programme. The main monitoring work with businesses is programmed for this autumn, corresponding to surveys undertaken at the same time during 2002, to allow a comparative analysis. The Second Annual Monitoring Report will include an update on the initial assessment provided in this report.

Improvements to Operations

Most aspects of the operation of the congestion-charging scheme have been functioning satisfactorily for most charge payers since charging commenced. However, TfL's monitoring and charge payer feedback on the first months of operation highlighted concerns around several aspects of the service.

In August 2003 changes were made to TfL's contract with Capita. Capita agreed to invest substantially to provide an enhanced level of service to central London congestion charge users. This programme of improvements will include the employment of more staff, the introduction of enhanced IT and processes to improve data quality, customer care, and firm but fair enforcement. Capita's failure to meet the milestones as outlined in the supplemental agreement will result in severe financial penalties.

This re-negotiation was not unexpected given the new, innovative and unique nature of the scheme. Indeed, the original contract envisaged substantial changes would be made through a change control process and a six monthly review of the performance regime.

Improvements are planned to become apparent over the coming months, with the full programme to be complete by the end of March 2004. Measures have already been taken to increase numbers of enforcement processing and customer service representatives, and TfL is about to improve the enforcement processes and implement an enhanced Performance Indicator regime.

TfL will continue to monitor the operational aspects of the scheme, and will continue to address with its contractors, any area where it is considered improvements need to be made.

Enquiries via the call centre now average around 70,000 calls per week, falling from the 167,000 average of the first few weeks of operation. This reduction is due to increased public awareness of the scheme, both in terms of its policy and its operation, and reduced use of the call centre for payments.

Enforcement Improvements

In the first six months an average of 106,200 Penalty Charge Notices (PCN) have been issued per month. As at the end of September, around 14,200 appeals had been registered. To date, 10,600 of these appeals have been processed, with 4000 being referred to the independent adjudicator.

Recent figures show an ongoing trend in the reduction of the number of representations and appeals. Since the summer more than 110 persistent evaders have had their vehicles clamped or removed and impounded by TfL. The number of vehicles clamped or removed is expected to increase over the coming months.

The number of representations made by vehicle keepers in response to PCNs has significantly decreased month on month. Representations made in response to PCNs currently lie at about 16% compared with 62% in the opening weeks of the scheme.

As a result of the renegotiations with Capita, and the improvements demanded by TfL being implemented, it is expected that the numbers of PCNs issued will increase from October 2003 and efficiency of handling representations will be improved.

Revenues

Congestion charging scheme is expected to generate £68 million this financial year for spending on transport improvements. Revenues are expected to increase to £80-£100 million in subsequent years as improved enforcement is implemented from autumn 2003 onwards.

The net revenues are lower than originally projected due to a lower number of chargeable vehicles entering the zone than predicted and a higher number of exempt and discounted vehicles. A tightened enforcement regime and improved operational processes are addressing evasion.

London's Success

Less congestion and fewer vehicles have eased the strain of travelling around central London leading to improved quality of life for those who live in, work in, or visit central London.

London's congestion charging scheme, whilst having a few teething problems, is tackling the Mayor's key transport priorities and helping improve London and its environment. TfL will continue to monitor its impacts closely to ensure that these benefits are maintained.

Fuller details of the impacts of the scheme will be provided in the Second Annual Monitoring Report, published in 2004.

1.1.2 Transport / Travel Plans

There is growing evidence from many sites that the benefits of promoting alternatives to the car far outweigh the costs.

A travel plan is typically a package of practical measures to encourage people to choose alternatives to single-occupancy car-use, to reduce the environmental impact of travel, to reduce the need to travel and to improve access to work and other services for people who don't own a car. Plans tend to be tailored to a particular business site, school, or area and can include a range of measures, such as setting up a car sharing scheme; providing cycle facilities; negotiating improved bus services; offering attractive

flexible-working practices; or offering part subsidies, restricting and/or charging for car parking.

Travel plans have been applied successfully to businesses, schools, and local communities and in relation to tourism and leisure. The Department of Transport DfT report *Making Travel Plans Work* (see link below) describes how 20 organisations that have adopted travel plans have achieved an average reduction in car-commuter trips to their sites of 18%.

More detailed travel plan examples are in **Annex 2**.

Links:

<http://www.travelwise.org.uk/travelplans.htm>

http://www.dft.gov.uk/stellent/groups/dft_sustravel/documents/page/dft_sustravel_504107.pdf

<http://www.transportenergy.org.uk/bestpractice/travelplans/index.cfm>

Transport Plans – Further details

A comprehensive review of UK travel plan case studies and best practice can be found in the DfT report *Making Travel Plans Work: Lessons from UK Case Studies*, DfT 2002,

http://www.dft.gov.uk/stellent/groups/dft_sustravel/documents/page/dft_sustravel_504107.pdf

Example case study from *Making Travel Plans Work* report:

Pfizer: shuttles and sharers

Organisation: Pharmaceutical company

1.1.2.1 Location: Rural

Staff numbers: 5,500 (daily use of site)

Staff car parking: 4,000 spaces

The pharmaceutical company Pfizer has cut car commuting to its UK headquarters by 9% – putting it ahead of schedule to meet its target of a 10% cut by 2003. In 1998, at the time of Pfizer's first travel survey, the number of cars coming on to its East Kent site for every 100 staff was 75.

By 2001 this had been reduced to 68. As a result, the company calculates that demand for parking has been cut by nearly 400 spaces, and that this is equivalent to a financial saving of £0.8 million in capital costs (excluding land). Pfizer estimates car park running costs at an additional £500 per space per year.

Supporting change

A full range of support measures has helped to bring about the increases in bus use and car sharing that underpin the Pfizer result. Although the company is in a rural location, some 23-bus services now stop on the site at peak times, including a free frequent shuttle bus to the nearest town of Sandwich. An estimated 5% of the workforce uses the service. Some staff living in Sandwich have given up second cars as a result. Additional

services, contracted from Stagecoach provide links to other areas at a fare of 10p per mile. Staff who commute daily by rail are eligible for a 50% discount on Connex services.

Car sharing is supported with a self-matching car share database, available on the company intranet. While the company offers no automatic guaranteed ride home, a quick search facility on the database can help users find an alternative partner when needed.

To encourage cycling, changing rooms, lockers and showers have all been improved and are now available in all major buildings, while cycle storage has been expanded. Pfizer has also helped fund improvements in local cycle routes on the National Cycle Network. Meanwhile, traffic calming, zebra crossings and a 30mph speed limit on the road through the site have improved walking conditions.

Internal promotion for the travel plan includes an intranet travel web site with comprehensive up-to-date travel information.

Findings from Pfizer's latest travel survey shed light on the popularity of different measures. This showed, for instance, that the shuttle bus was the change that most encouraged bus use, while the introduction of more frequent bus services was the change thought most likely to encourage greater use in future. New cycle paths were considered most likely to encourage more cycling, with the most wanted route being between Sandwich and Pfizer. The survey also showed that more staff were 'travel blending' – using alternatives to the car for one or two days a week.

Parking 'cash out'

Since its most recent travel survey, Pfizer has strengthened its travel plan with 'parking cash out', introduced in June 2001. All employees are entitled to park, but receive £2 (before tax) for every day that they work at the site but do not bring a car. The bonus was set to cover the estimated cost of providing a parking space. Security access proximity cards are used to operate the scheme. Points are added on entry to the site and deducted from those leaving through the car park barrier. Car sharers also benefit from the scheme – since only one person in the car needs to use their card. One advantage of the system is that data on car use will be automatically collected. The parking cash-out is seen as 'cementing' other measures together – with a single incentive that encourages drivers to use other options where practical.

The following examples come from the Travelwise website:

<http://www.travelwise.org.uk>

Nottingham Commuter Planners Club

In 1995, Nottingham City Council formed a unique network for organisations wishing to adopt what are now known as 'travel plans'. A travel plan is a package of measures designed to reduce unnecessary car trips to the workplace whilst promoting more environmentally friendly forms of travel.

The Nottingham Commuter Planners Club now represents over thirty-five organisations in the city, including the largest employers. It is estimated that club representatives collectively represent the travel interests of 50,000 employees. Members include Capital

One, Boots, the Queens Medical Centre and the Universities. Club meetings are held quarterly and are hosted by member organisations in turn.

The club has been the catalyst for organisations adopting packages of measures at members' sites including improved facilities for walking and cycling, preferential parking for car sharers, and agreements with bus operators. It has also proved to be successful in influencing central government policy.

Because it has been so popular, the club has created sub-groups. These are more 'location based'; for example, one exclusively attracts employers in the southern area of Nottingham City.

For more details contact...

Jeremy Prince

Transport Partnership Officer

0115 9155141 or 07973 284 796

jeremy.prince@nottinghamcity.co.uk

Fife Council

Fife Council developed their plan with the aim of reducing car dependency for daily commuting. A cross-service and cross-party working group in consultation with Fife Council employees put it together.

The initial plan covers the council offices in Glenrothes, Kirkaldy and Dunfermline and looks for opportunities to encourage the way people travel and challenges the reasons why journeys are necessary.

The over-arching target in the Fife Council Travel Plan is to achieve:

- a 4% drop in single occupancy car journeys to work by 2005
- a 10% drop by 2010.

The above targets will be achieved through meeting targets for individual mode of travel.

Fife Council monitor their plan in the following way:

- car parking demand
- use of cycle facilities
- staff travel survey 12 months after implementation and then after a further 2 years

2 Water demand

2.1.1 Water Savings

The examples below are a very limited selection from many best practice and innovation examples available showing impressive reductions in water use

- The BedZED sustainable housing development at Beddington in Surrey has used recycling of water and rainwater as a reliable non-potable water supply for domestic use. **Domestic water consumption in the development is 53% of the UK average.**
- Place UK a producer of high quality rhubarb, strawberries, raspberries, blackberries and bean sprouts on farm land in Tunstead, Norfolk installed systems to reuse and recycle excess water in the irrigation process with **savings of 38% of water use** during bean sprout production – saving over £12,000 per year equating to a payback time of less than 3 years.
- Pool House Hotel Green Business Tourism Scheme: Although a small-scale hotel, the Pool House Hotel has shown how water use reduction can combine with luxury service. Using water simple efficiency measures and technology in toilets and taps, drying towels for reuse rather than always washing them and harvesting rainwater for all garden uses, the hotel has managed to **cut water use by over 60%**
- Woodnook Bleaching and Dyeing Co (textile treatment, employing 120 people) applied new technology to its production process that **reduced water consumption by 50%** as well as financial savings of £61,000 p/a and reducing effluent significantly.

Links:

<http://www.bedzed.org.uk>

<http://www.environment->

[agency.gov.uk/subjects/waterres/286587/487004/?version=1&lang=_e](http://www.environment-agency.gov.uk/subjects/waterres/286587/487004/?version=1&lang=_e)

<http://www.mtprog.com/index.aspx> (Defra: Market Transformation Programme)

3 Energy Efficiency

3.1.1 Energy Efficiency

Numerous energy efficiency initiatives, organisations and best practice examples exist. Relatively simple, non-technical measures can be used to cut energy demand in domestic and industrial settings by up to 30%. More ambitious and innovative approaches such as those proposed by the Norfolk based Community Carbon Reduction (CRED) project, and the BedZed development show how the application of smart technology makes both environmental and business sense:

- The UEA based CRED Community Carbon Reduction initiative is building a community of partners who are deciding how they want to cut their emissions of carbon dioxide (CO₂) to meet a target of 60% reduction by 2025. Leading through participation and innovation CRED is looking to drive technological change and energy saving in all sectors. The initiative is expected to attract investment and help East Anglia become a centre of excellence for environmental technologies. CRED case studies are in **Annex 3**.
- **Annex 3** also contains a case study from the Energy Savings Trust on Community Heating, where Community Energy was used as a solution to issues of fuel poverty and hard to treat properties. Upgrading of multi-storey and low-rise housing achieved a reduction in fuel bills and CO₂ emissions of 40%.
- The BedZed Project buildings have been designed to conserve energy and it is **estimated that residents might see a 60% reduction in total energy demand and a 90% reduction in heat demand, compared to a typical suburban home.**
- There are many other examples of best practice and innovative technological solutions to improving energy efficiency in industrial / commercial sectors. The **Government Energy Efficiency Best Practice Programme** has compiled dozens of case studies typically with relatively specific sector or technical focus. Typical energy savings are between 10% and 30%.

Links:

<http://www.cred-uk.org/index.aspx>

<http://www.bedzed.org.uk>

www.energy-efficiency.gov.uk

<http://www.est.org.uk/communityenergy> (the Energy Savings Trust, a resource on community energy initiatives providing guidance, ideas and advice)

Energy Efficiency Examples

The following case studies are from the UEA CRED Carbon Reduction initiative:
<http://www.cred-uk.org/CRedInIndustry.aspx>

Global Commodities UK Ltd - Fuelling a Better World

driveECO bio-diesel - driving the ECOlogical, ECOnomical way

Global Commodities UK Ltd is an innovative Norfolk company that is pioneering the bio-diesel revolution in the UK. driveECO bio-diesel is produced locally at Shipdham near Dereham. A second factory in Lowestoft will expand production to over 180 million litres per year and create up to 200 new jobs in the area.

Global's current market is extensive covering large haulage companies, large independents who supply garage forecourts, Government Departments and the Broads Authority. Broadland Fuels supply driveECO bio-diesel in a 5% blend with conventional diesel to over 20 garages locally.

driveECO bio-diesel 'Fuel for Thought' ...

- No engine modifications required
- Enhances fuel economy
- Reduces pollutants into the environment
- Non-toxic and bio-degradable
- Reduces engine wear

SLP Energy - Building a new business in offshore wind power

SLP Engineering in Lowestoft has a history of success in offshore fabrication. Oil and gas extraction is now a mature industry in the North Sea but the opportunities in offshore wind energy are enormous.

SLP is using its core skills, built up over many years, to build a new business in renewable energy. Cutting carbon emissions depends on a huge expansion in renewable energy. The aim is to generate 20 per cent of electricity from renewables by 2020. Offshore wind is the technology that can make this possible.

3.1.2 Deepdale Farm - Old Stables to Low Energy Hostel

Farm Diversification the Sustainable Way

Deepdale Farm is a 1000-acre arable farm at Burnham Deepdale on the north Norfolk coast. Diversification is essential to maintain a viable business and has been on-going for twelve years. Derelict buildings have been renovated for visitor use. The Borthwicks have a vision of Deepdale that continues to develop benefits both for visitors and for the local community in a sustainable fashion.

This year, what were old stables have re-opened as a backpackers' hostel and have already accommodated delighted visitors from many countries.

Deepdale Stables, the 37 bed backpackers' hostel is a comfortable 'green' building. Solar panels provide hot water that is used also for under floor heating. This form of heating aids natural ventilation. Roof insulation is made of recycled newsprint and construction materials are locally sourced. Waterless urinals and low-flush loos reduce water consumption. Both directly and indirectly, 'green' construction Principles reduce energy use and CO2 emissions.

The following example comes from the Energy Savings Trust website:

http://www.est.org.uk/communityenergy/casestudies/index.cfm?ty=2&casestudy_id=13

Community Heating - Aberdeen City Council Case Study

Aberdeen City Council was faced with issues of hard to treat properties and fuel poverty. This detailed case study details how they used Community Energy as a solution to these issues when upgrading their multi-storey and low-rise housing to achieve a reduction in fuel bills and CO2 emissions of 40%. This case study is valuable reading for local authorities and housing associations.

What is community heating and cooling?

Community heating (CH) provides a central source of heating to a number of buildings and/or dwellings, typically using pre-insulated underground pipes. It is an opportunity to use renewable fuels and energy-efficient technologies, such as combined heat and power (CHP), heat pumps, etc. CH therefore achieves:

- Environmental benefits, principally lower carbon emissions
- Affordable warmth for building occupants, residents and other users
- Elimination of distribution and use of combustible fuels in buildings served by the scheme

CH is an extremely flexible energy supply system that delivers low and no-carbon heat supplies now and for the future. Successful schemes operate in a number of UK towns and cities, including Southampton, Sheffield, Nottingham, Lerwick and London.

The UK government recognises CH's potential and has encouraged its development for a number of years. The new £50m Community Energy programme is a demonstration of government support for CH. The International Energy Agency (IEA) also recognises the potential for CH (and community cooling) to significantly reduce greenhouse gas emissions, particularly carbon dioxide, in order to meet the targets established in the Kyoto Protocol.

4 Waste Management

Waste Management

Regulation: Examples of where regulation and controls have been used to reduce waste or change habits have been collated by the European Environment Agency and show that policy and public education can reduce waste going to landfill by 50% and in some cases raise recycling levels up to 80%. For example the introduction in March 2002 of a tax on plastic bags in Ireland (the Plastax) has proved popular, reducing plastic bag consumption by 90%, or 277million bags in its first 3 months, although concerns have been raised about equity effects (for example the whether the replacement paper bags make shopping without a car harder) and 'rebound' effects (eg increase in sales of plastic rubbish sacks). It had also raised over €3.5million in revenue by August 2003. More information on regulatory measures and their effects on waste can be found in **Annex 4**.

Innovation: Envirowise has compiled more than 100 case studies of waste management in action within organisations. Each case study gives independently audited savings, useful tips and pointers to further help.

Participation: recycling and waste networks and initiatives can also have a marked effect, such as the Devon Community Recycling Network: DCRN consists of a diverse range of about 40 member groups and many individuals. DCRN member groups undertake kerbside recycling collections from over 72,000 households across Devon, service a network of 90 rural recycling pavilions and employ over 120 people.

Links:

http://reports.eea.eu.int/topic_report_2002_2/en/tab_abstract_RLR (EEA Case Studies)

<http://www.envirowise.gov.uk/envirowisev3.nsf/key/CaseStudiesR> (Envirowise)

<http://www.dcrn.org.uk> (Devon Community Recycling Network)

<http://www.crn.org.uk> (Community recycling network)

<http://www.nrwf.org.uk/sharing.htm> (National resource and waste forum)

<http://www.eco-schools.org.uk> (Eco-schools initiative)

4.1.1 Waste Management - Examples

Waste Management Case Studies all from the European Environment Agency:

http://reports.eea.eu.int/topic_report_2002_2/en/tab_abstract_RLR

- Minimisation of land filling of biodegradable municipal waste, Austria: Through new rules on landfill, mandatory collection schemes and differentiated landfill taxes to **reduce between 1989 and 1996 the amount of waste to landfill by half (from 63.1% (1989) to 32 % (1996)** and for biodegradable waste only 20 % is landfilled).
- Landfill tax on construction and demolition waste, Denmark: The Danish waste tax has created a market for recycling of construction and demolition waste. **A tax increase from €5 to €17 per tonne has increased the recycling rate from 25% to nearly 80 % between 1990 and 1999.**
- Producer responsibility for packaging waste, Germany: A system of collection and licensing fees has applied the polluter-pays-principal to sales and transport packaging waste. Though having some free-rider problems (non-license paying waste producers packaging entering the system) the results have been impressive. **Packaging consumption decreased from 6.9 million tonnes in 1991 to 6.0 in 1997 (it has risen elsewhere), and recycling rate for packaging within the system in 80%.**
- Organic household waste action programme, Netherlands: Separated waste collection, new processing capacity and a clean compost initiative has led to a **household waste recycling rate of 43% (1999)**
- Producer responsibility for packaging waste, Sweden: Legislation obligating producers and importers to collect and recycle packaging waste (by paying license fees to material companies co-ordinating collection and recycling) has led to very high **recycling levels: eg Glass 84%, recyclable / refillable glass 99%, recyclable PET 92%, corrugated cardboard 84%, steel 62%.** Such high levels of recycling have also produced effective markets for recycled material with there in fact being excess demand for aluminium and plastics.

Irish bag tax hailed success – source BBC:

<http://news.bbc.co.uk/1/hi/world/europe/2205419.stm>

A tax on plastic shopping bags in the Republic of Ireland has cut their use by more than 90% and raised millions of euros in revenue, the government says.

The tax of 15 cents per bag was introduced five months ago in an attempt to curb litter, and the improvement had been immediate and "plain to see", said Environment Minister Martin Cullen. He said that the 3.5 million euros in extra revenue raised so far would be spent on environmental projects.

Other countries, particularly neighbouring Britain, are closely watching the "plastax". Bangladesh has banned polythene bags altogether while Taiwan and Singapore are taking steps to discourage their use.

"The levy has been an outstanding success in achieving what it set out to do," said Mr Cullen.

"Over one billion plastic bags will be removed from circulation while raising funding for future environmentally friendly initiatives."

He added: "It is clear that the levy has not only changed consumer behaviour in relation to disposable plastic bags, it has also raised national consciousness about the role each

one of us can, and must play if we are to tackle collectively the problems of litter and waste management."

The environment ministry estimated that about 1.2 billion free plastic bags were being handed out every year in the republic, leaving windblown bags littering Irish streets and the countryside.

In the three months after the tax was introduced, shops handed out just over 23 million plastic bags - about 277 million fewer than normal, the government said. Shoppers are being encouraged to use tougher, reusable bags.

The ministry said that if the current trend continued, the tax would bring in 10 million euros in a full year. Other countries around the world are also taking action to curb plastic bag litter.

In March, Bangladesh banned polythene bags after it was found that they were blocking drainage systems and had been a major culprit during the 1988 and 1998 floods that submerged two-thirds of the country.

Taiwan and Singapore are also moving to ban free plastic bags and in South Africa they have been dubbed the "national flower" because so many can be seen flapping from fences and caught in bushes.