



LONDON FIRE & EMERGENCY PLANNING AUTHORITY

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AGENDA ITEM

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Environment Update & Monitoring – Annual Report (April 2005-March 2006)

REPORT

(29.6.06) by the Assistant Commissioner (Operational Planning)

Summary

This report sets out the working progress LFEPA has achieved on environmental improvements during the 2005/06 financial year and tracks progress against the LFEPA Environment Action Plan.

LFEPA is guided by its Environment Policy and shares the commitment to the Environment and Sustainable Development strategies set down by the Mayor of London. LFEPA has worked closely with the GLA and other functional bodies over the past twelve months responding to initiatives that have been developed

The action plan for 2006/2007 focuses on increasing the scope of the existing environmental management systems, improving our measurement of impacts and promoting synergy in actions to support the GLA environment and sustainable development objectives.

RECOMMENDATION

That the Authority formally approves the draft Environment Policy included in the report.

FOR NOTING:

1. The work currently being carried out to achieve actions in the Environment Action Plan 2005/06 – 2006/07.
2. The sustainable development indicators for reporting to GLA.

ENVIRONMENT UPDATE & MONITORING – ANNUAL REPORT 2005/06

EXECUTIVE SUMMARY

This report sets out the working progress LFEPA has achieved on environmental improvements during the 2005/06 financial year and tracks progress against the LFEPA Environment Action Plan.

LFEPA is guided by its Environment Policy and shares the commitment to the Environment and Sustainable Development strategies set down by the Mayor of London. LFEPA has worked closely with the GLA and other functional bodies over the past twelve months responding to initiatives that have been developed.

Some key achievements during 2005/06

- The Procurement Department gained accreditation under ISO 14001 on 29th September 2005.
- The leading project to provide renewable energy using photovoltaic cells is operational at Richmond Fire station. Solar heating technology has been installed at Tooting Fire station.
- The programme to reduce the emissions of LFEPA fleet is on target and will meet the Low Emission Zone (LEZ) Euro III requirements by 2008.
- The awareness of and participation in, recycling programmes is widespread across the Authority.
- A 7.5% reduction in energy usage by the Authority (excluding vehicles) has been achieved despite growth in the number of functions undertaken by the Authority, increases in staff numbers and the quantity of Information Technology (IT) equipment in use.
- The introduction of water coolers to replace bottled water Authority-wide...
- The "Arson Task Force" has funding until March 2008, tackling areas with the highest incidence of arson.

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London Fire and Emergency Planning Authority Environment Policy

The London Fire and Emergency Planning Authority's principal aim is to "make London a safer city by minimising the risks and social and economic costs of fire and other hazards". In support of this aim the Authority is committed to reducing its environmental impact on London and to work towards sustainable development in its operations. To demonstrate this we will:

- Identify and reduce our impact on the environment, specifically in relation to our prime roles of attending incidents and providing fire safety to the community in London. Our responsibility to the environment supports our commitment to saving life and property.
- Continue year on year to develop new strategies in order to achieve continual improvement to each area of our operations. This work will be driven by our commitment to prevention of pollution and the key area of sustainable development as well as schemes to reduce our use of energy in buildings and emissions from our vehicles and machinery and the waste produced by our activities.
- Comply with and where possible, apply best practice to relevant UK, European and International legal requirements, and other requirements which relates to our environmental aspects. To seek to implement the requirements of relevant legislation before it comes into force.
- Provide an environmental management system that will monitor and review our environmental impacts and set objectives and targets to meet our environmental responsibilities. We will audit our procedures to work towards continual improvement.
- Communicate the implementation and maintenance of our activities and initiatives to all Authority's employees, those working on behalf of the LFEPA and the wider community. We will encourage ownership with our employees and provide support and training for each initiative.
- Minimise significant adverse environmental impacts from our new operations and new developments through the use of integrated environmental management procedures.
- Encourage our suppliers and contractors to continually improve their own environmental performance and influence them in ensuring that goods and services procured for or on behalf of the Authority support our environment policy.
- Continue to implement the energy policy in the design, maintenance and management of Authority buildings, raise awareness and good practice amongst all staff and deliver programmes to reduce carbon dioxide emissions.

1. ENVIRONMENTAL MANAGEMENT

The Environment Team is part of Corporate Health, Safety and Environment Services (CHSES) and co-ordinates activities across functional groups in the Authority as well as maintaining links into strategic environmental groups within the GLA and other Functional Bodies.

The management of environmental activities across the Authority is co-ordinated by the Environment Steering Group (ESG), a cross-directorate group established in 2003. This group reports to the Health, Safety and Environment Strategy Board (HSESB) on progress against the Environment Action Plan. Half-yearly reports within Operational Planning department are also submitted to the Corporate Management Board (CMB) and there is an annual report to Authority.

The ESG has responsibility for developing and maintaining the Environmental Management System (EMS) as well as monitoring legislative and technological developments. The overall objective is to extend the scope of the environmental management system to cover all operations within the Authority. Short-term projects are currently being developed such that they will form part of the planned management system.

LFEPAs Environment Policy has been developed from an original combined Health, Safety & Environment policy that was approved in May 2001 (FEP 102). The Authority Environment Policy is fully consistent with the existing Authority Policy on Energy Conservation in Buildings (MAN D005:A8).

LFEPAs shares the commitment to the Environment and Sustainable Development strategies set down by the Mayor of London. LFEPAs has worked closely with the GLA and other functional bodies over the past twelve months responding to initiatives that have been developed

Audit is a key management tool for the Environment Team. Regular audits have been carried out at a number of Fire stations to assess general performance. One of the significant issues identified was the need for support in the disposal of hazardous waste. The process for disposal together with training and communication is currently being improved to support the most common activities on site.

2. OPERATIONAL RESOURCES

Environmental protection training is included in firefighter and management development programmes to ensure that they are equipped to deal with incidents appropriately.

Procedures are in place to minimise the environmental impact of operational incidents. Additional expert support is available for potentially significant incidents from sources such as the Environment Agency (EA). Fifty-six officers have been trained as Hazardous Materials (Hazmat) Environmental Protection Officers (HMEPO), who are available to provide environmental protection advice.

During 2005 the Authority received 3273 confirmed hazardous material incidents and HMEPO Officers attended 104 of these. Scientific Advisers attended 36 of these incidents and provided advice at another 11 incidents. Operational environmental protection training courses are regularly reviewed with input from the EA and the Authority's Scientific Advisers, Bureau Veritas (BV).

During 2004/05 the Environmental grab packs were provided together with training so that they were operational on each appliance. These are now in regular use to prevent potential pollution. Monitoring orders for replacement items has identified that drain blockers are the most frequently used items to address spillages with 118 being used over the last 12 months.

3. INCIDENT PREVENTION

Many emergency situations dealt with by the Authority carry pollution risks, which differ in magnitude depending on the size and type of incident. A key activity, in line with the draft Environment Policy, is to mitigate these potential environmental impacts. LFEPAs is working in the community implementing a number

of schemes. These are targeted at reducing the number of accidental fires and other emergencies through fire prevention in the home, reducing the number of fires started by arson and road safety initiatives.

"Safe Drive Stay Alive" is a road safety initiative seeking to positively influence the road craft attitudes of young people, typically 16-17yrs. They are shown films, which reconstruct a serious road traffic accident that has occurred in the local area. This is intended to have a relevant emotional impact, which is supported by testimony from the emergency teams who attended the accident and those injured, disabled or bereaved as a result.

4. ENVIROCRIME

Arson is currently the largest single cause of fire in the United Kingdom and in London over 60% of fires are thought to have been started deliberately, abandoned cars, rubbish and empty premises being favourite targets. The "Arson Task Force" (ATF) was established in 2004 and is currently funded until March 2008. Its role is to tackle those areas with the highest incidence of arson and is participating in many projects linking with partners to reduce arson related crime or "Envirocrime". A major activity is to get the "fuel off the streets" preventing opportunistic arsonists. In addition, the ATF will liaise, communicate with and educate the community, local authority and other public services about the problems associated with arson. Each Borough has Arson Reduction Action Plans (ARAPs), which allows good practice to be shared across London. The projects target the following groups:

- Key stage 3, Secondary Schools 10 – 18 year olds
- Commerce and Industry
- Housing Associations (caretakers and wardens)
- Borough Councils and those employed by them.
- Places of Worship
- Health Departments

The Authority's "Juvenile Firesetters Intervention Scheme" works with children up to the age of 18 years who have demonstrated fireplay or fire setting behaviour. The Authority has 175 trained advisers who work in pairs with the child to re-address the fire setting behaviour.

Over 1300 Children and families have been referred to the scheme through a number of routes e.g. fire crews and fire investigation officers, parents and families, schools, police, social services and other agencies. Where necessary, advisors work in conjunction with other agencies to address the fire setting behaviour. This projects is estimated to prevent between 15 and 30 fires a year

The Local Intervention Fire Education (LIFE) project was developed as a response to anti-social fire related behaviour with local youths, particularly from the Bangladeshi community in Tower Hamlets. The Authority has run over 120 LIFE courses since June 2002. These have engaged with 1200 young people to enhance their social and citizenship skills. Based on good practice gained over this time there are now nine teams that take referral from 20 boroughs. There has been a measurable reduction in "Envirocrime" in the targeted Boroughs with a change in the culture on local housing estates away from deliberate fire setting, hoax calls and attacks on fire fighters. After the course they are also able to act as advocates for the Fire and Rescue Service, promoting their positive views among their peers. Fifteen young people who attended LIFE courses have applied for employment within the Authority with two being successful and currently employed as trainee fire fighters.

Since 2004, LFEPA has been working as a full delivery partner for the "Team" programme with the "Prince's Trust". The Team programme was funded by the national Learning and Skills Council (LSC), which is no longer able to provide support. LFEPA is currently looking at ways to continue its success in engaging with the community and uses the experience gained through links with the "Prince's Trust".

An 18-month pilot scheme for "Young Firefighters" is expected to commence in the boroughs of Hackney and Bexley. The scheme will focus on developing the citizenship and personal skills of young people between 12 and 18. Up to 20 young people will be involved in local community safety events and initiatives to develop

general life skills as well as knowledge of the Fire Service. Nineteen members of staff have been selected and initially trained to participate in running the scheme, which, if successful, will be extended into other London boroughs.

5. TRANSPORT

The major environmental impacts of transport used by the Authority and its employees in work related travel are the use of energy and air pollution. The following programmes detail our actions to mitigate these impacts.

5.1 LFEPA Fleet

AssetCo provides LFEPA with a fleet of 79 cars for use by Station Managers and as pool vehicles for the Authority, 72 of these are dual fuel (Liquid Petroleum Gas (LPG) and unleaded petrol). The Authority has also procured six new hybrid Honda Integrated Motor Assist (IMA) Civics powered by unleaded petrol and electric motors, following a successful trial. The replacement of the car fleet will take place within the next 18 months. Officers are currently working closely with AssetCo and are looking to improve the environmental performance of the next batch of fleet cars. A number of new environmentally friendly demonstrator vehicles (e.g. bio ethanol) have had initial trials. Increased environmental performance will be included in the specifications as a key deliverable for the replacement programme.

The Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs) are on a rolling programme of replacement that will achieve full Euro III compliance by 2008 in line with the London Low Emission Zone (LEZ) limits. Over the last 3 years 88 vehicles have been replaced and all new vehicles joining the fleet are Euro III compliant. It is anticipated that the programme will be complete by June 2007. All other specialist large goods vehicles will also be compliant ahead of the LEZ implementation in London. Investigations to determine if suitable retrofits are available for specialist vehicles that will not comply with LEZ requirements have commenced.

The number of specialist vehicles in the fleet continues to increase and specific emission data has been averaged over the number of vehicles. The details of vehicle numbers and emissions for the LFEPA fleet are shown in Table 1. The effect of the programme so far has been an absolute reduction in PM₁₀ emissions of 12 tonnes per annum. On an average vehicle basis this represents a 37.5% reduction in PM₁₀ emissions from the fleet. The achievable reductions in NOx emissions (combined nitrogen oxide gases) with new technology is significantly less but on an average vehicle basis these levels have also reduced.

Table 1. Details of Vehicles numbers and emission from the LFEPA Fleet

	2003/04	2004/05	2005/06
Total No. LFEPA vehicles	455	489	503
No. LFEPA HGVs/LGVs	376	410	424
% Euro III compliant HGVs/LGVs	36.7	48.4	56.5
Average PM ₁₀ emission (tonnes/vehicle)	0.08	0.07	0.05
% Cumulative change in the average PM10 emission (tonnes/vehicle)		12.5	37.5
Total PM ₁₀ emission (tonnes)	38	32	26
Average NOx emission (tonnes/vehicle)	0.86	0.86	0.85
Total NOx emission (tonnes)	391	420	430

The Authority's vehicle provider, AssetCo, has confirmed its approval for LFEPA to use bio diesel on the basis that the percentage of bio diesel does not exceed 5%. Officers continue to discuss with AssetCo the engineering risk transfer associated with bio diesel.

The project to replace the engines of the Authority Fire boats continue and options are currently being evaluated.

5.2 Travel Plan

Understanding the impact of LFEPA employees in their travel options to and from work together with work related travel, provides options to manage costs, minimise environmental impact and provide employee benefits. A Travel Plan is currently being developed to manage long-term implications and the increasing costs associated with working in London. Provisional objectives include, encouraging the increase of walking and cycling and where possible, reducing individual car travel.

The current environmental impact in lease cars is shown in Table 2. This information will be used to measure progress on the overall environmental impact as the Travel Plan progresses.

Table 2. Baseline details from the LFEPA lease cars

Lease Cars	2005/06
No. Lease Cars	226
Average CO ₂ emission (g/km)	175
Euro IV compliant	163
Euro III compliant	63
Estimated CO ₂ emission (tonnes) based on 19,000 km / annum	753

A questionnaire has been designed to survey the current individual travel patterns. The information from this survey will help design objectives, targets and programmes within the Travel Plan that aims to support both employees and LFEPA as well as help reduce our environmental impact.

6. PROCUREMENT

An ISO 14001 compliant environmental management system (EMS) was successfully accredited on 29th September 2005 and has now been in place for six months. The main focus has been to review internal responsibilities and raise awareness with key suppliers. An external surveillance audit of the management system by Det Norske Veritas (DNV) was carried out in June 2006 which successfully maintained the accreditation.

Two officers from the Procurement Department have been trained as internal auditors and will audit within the current scope of the environmental management system and support its extension throughout the Authority.

Staff at Protective Equipment Group (PEG) and Headquarter Stores are currently being trained as internal auditors, which will be completed in summer 2006.

6.1 Supply Chain Management

The importance of the links between AssetCo, as a supplier, and LFEPA require a partnership commitment and approach to developing their environmental credentials. Monthly meetings with AssetCo have focussed on ways to assist and develop their first steps in implementing an EMS. The achievement of environmental improvements has been incorporated into one of the key performance indicators within the contract.

An initial survey has been carried out of the top 25 suppliers based on their financial value which indicates that just over 16% of these suppliers are operating under ISO 14001 accredited systems. Validation of this survey is being carried out and methods are being investigated to try to encourage engagement in BS8555 and the Institute of Environmental Management and Assessment (IEMA) Acorn scheme as a method of developing a more sustainable supply chain. The BS8555 and IEMA Acorn schemes are modular versions of ISO 14001 environmental management systems, which can be upgraded to full management systems when required.

6.2 Green Procurement

LFEPA won the Most Innovative Organisation for Recycling at London Remade Awards in November 2005, which was presented by the Mayor.

Items on the Purchase Order Management System (POMS) which support recycling are identified to encourage green purchasing. These items represented an initial spend in 2003/2004 of £12,729 which increased significantly during 2004/05 to £176,785. Over the last 12 months the spend on identified green items has been £210,515 which represents an increase of 19% on 2004/05 figures. Although a growing contribution it represents less than 1% of the total Authority spend. Options are being investigated to review items which are likely to represent the least environmental impact, but do not currently qualify based on recycling content alone.

All contracts require tenderers to provide information on environmental management and equalities issues, as well as their approach to reducing the environmental effects of their business. Clauses based on LEZ emission targets and reducing packaging are included in all tenders. The contract for supply of toilet tissue has been awarded to a London based small/medium sized enterprise (SME), which provides a product from 100% recycled paper.

7. WASTE MINIMISATION

There is currently a significant amount of recycling through a range of different collection schemes carried out within the Authority. The most cost effective option currently available for the majority of sites is to use the local Borough schemes. A new centralised waste contract is currently under tender to provide a standard collection system and far more accurate measurements of the extent of recycling. A number of indicator schemes are detailed below.

7.1 Cartridge Recycling

The measurement of recycled cartridges determined by the number of units returned to central stores was compared with the number issued via POMS, annually. These figures do not currently include the recycling of cartridges that is carried out using alternative schemes. During 2005/06 cartridge recycling represented 6.5% of the total number ordered and 11.6% based on the purchase value.

7.2 Paper Recycling

Paper Round collects paper for recycling and returns it to a paper mill in Kent where it is converted into paper for office use. The purchase of paper from the mill helps to close the raw material loop and minimise on transport costs associated with the recycling process. This system is operated at HQ offices and Southwark Training Centre (STC) where predominantly used white paper is recycled. At Fire stations paper is recycled either using individual companies or through Borough schemes. The figures in the Table 3 below show the amount of recycling achieved at the major locations against the total amount of white paper ordered by the whole Authority. The amount of recycling has continued to increase over the last 12 months to 51.7%. As a large volume of paper is sent off site the maximum level of recycling that can be achieved is yet to be determined. This is probably an under estimate of the level of recycling as the local recycling component cannot be measured at this stage.

Table 3. Details of Paper recycling operating at Headquarter buildings and STC

Paper Recycling	2002	2003	2004	2005
Amount Recycled (tonnes)	33.3	32.6	36.4	37.6
Amount of white A4 purchased (tonnes)	71.2	78.8	73.7	72.8
% Recycled of A4 paper purchased.	46.7	42.9	49.3	51.7

7.3 Uniform Recycling Scheme (URS)

The URS commenced in June 2005 in conjunction with the Metropolitan Police Authority (MPA). Prior to the set up of this scheme disposal of non-serviceable uniform clothing was through local disposal to landfill. Items that can be recycled in the URS include: shoes, boots, sportswear, station work-wear and undress uniform. Over the last 12 months 0.32 tonnes have been recycled compared with 0.49 tonnes collected during 2004/05. The higher value for 2004/05 represented clear outs from a number of stations once the scheme had been put in place. The next steps are to expand the number of items being recycled and link the recycled data to the issue of replacement items.

7.4 Mobile Phone Recycling

Recycling Schemes have been expanded to include mobile telephones and 500 were recycled in March 2006.

7.5 Furniture Recycling

The Authority continues to work with a social enterprise organisation (Green-Works). This is a comprehensive and fully audited disposal service for unwanted office furniture with a work experience programme for the long-term unemployed. End of use and damaged Authority furniture is collected, sorted, cleaned, refurbished and then resold to charities, SMEs and similar end users. The removal and collection service costs are comparable with traditional removal firms.

7.6 Battery Recycling

The battery recycling scheme has been in place for just over two years and continues to divert potentially hazardous waste from other waste streams. The amount of batteries collected during the last 12 months was 1.11 tonnes compared with 0.63 tonnes collected during 2004/05. This represents a substantial increase in the use of this scheme.

8. SUSTAINABLE DESIGN

8.1 Products

Procurement and Property departments are working together with the government based Environmental Innovations Advisory Group Forward Commitment project, to develop and trial sustainable maintenance products.

8.2 New Headquarters building

Whenever possible new buildings and refurbishments will incorporate energy efficient systems and, where practical, on-site power generation.

8.3 Diesel Storage

Following an analysis to identify risks at our diesel storage facilities, funding has been approved to upgrade all facilities to ground level storage tanks, with bunding and weather protection. Existing underground tanks will be decommissioned. This work will be prioritised so that sites with the highest environmental risk in relation to factors such as hydrogeology will be targeted first.

8.4 Foam

Following the Buncefield fire there has been an increasing level of public awareness of the use of foam for fighting fires and its associated environmental implications. We have to ensure we have "best practice" in our management of foam use and, where possible, minimise its potential environmental effects.

To progress this we have introduced an alternative training foam, which allows training of personnel and the calibration of fire fighting equipment with a lower risk of damage to the environment.

The impact of the change to the use of alternative training foam will become evident over the next 12 months. The foam purchased in 2005 represents a cost exceeding £68,000.

To improve the current use and storage of foam within the Authority, an evaluation of all our activities to determine current "best practice" based on available technical options has commenced.

9. WASTE

It is anticipated that a new waste management contract will be in place by the end of 2006. Currently all the Authority premises have different waste collection and recycling facilities. The new contract will provide a uniform collection system allowing more consistent management of both waste and recycling across the Authority.

Waste minimisation and recycling schemes have been set up on a borough by borough basis at all Fire stations. They are predominately multi-material recycling schemes, with the collection of paper, glass, cans and cardboard. For Fire stations that do not operate multi-material collections, a paper-recycling scheme has been implemented. The service providers are the relevant local authority, community action groups or SMEs depending on the best, most cost-effective alternative in each borough.

10. ENERGY

The Authority's policy on energy conservation aims to ensure that best practice in energy management is applied throughout the LFEPA estate to deliver environment benefits as well as cost savings. The Authority is committed to an annual reduction of 2% in total energy use and is currently on target to meet the Mayor's CO₂ emission reduction target of 20% by 2010 set on the baseline level from 1990.

New buildings and major refurbishment schemes incorporate, whenever possible, energy conservation technology and environmental design considerations. Energy awareness campaigns encourage staff to be more conscious of the cost of energy and the impact our buildings can have on the environment. In this context systems are being implemented that will eventually provide feedback on energy use to individual Fire stations. This will increase local interest in actions to improve energy efficiency.

A good working relationship has been established with London Climate Change Agency (LCCA). Data has been exchanged and a number of collaborative projects are being investigated to support the Agency's objectives. The LCCA also reviews LFEPA energy projects to help select the best practicable environmental option (BPEO), which is consistent with the overall sustainability objective to minimise CO₂ emissions.

10.1 Energy Procurement

Both gas and electricity contracts were re-tendered in 2005 through an 'e' auction to competitively source both supplies. In the case of electricity, tenders were received with an average increase of 47%, which compared with an average market increase of 59%. No offers were received to supply electricity from renewable sources at the time of tender in August 2005 despite the tender documentation specifically requesting both brown and green supplies. LFEPA continues to explore ways of maximising the renewable proportion when this is available at competitive rates.

Gas supplier's interest was more restricted due to the volatility of the gas market. This resulted in three approaches to the market to mitigate price increases. The result was an increase of 74% compared with market increases of 77%.

10.2 Energy Efficiency

Investment programmes to save energy usage have targeted the worst performing stations identified by the Carbon Trust. Based on this system significant results have been achieved within the Authority's estate over the last 12 months.

The Carbon Trust benchmark Energy Performance Indicator (EPI), which is based on energy consumption and floor areas has been applied at Fire stations. A site with good energy performance has an EPI lower than 440kWh/m² per annum, a site with an EPI of greater than 620kWh/m² has a poor energy performance rating. The performance of each Fire station is shown in Table 4.

Table 4. The number of stations and their performance rated on the Carbon Trust Index

Performance	2004/05	2005/06
Poor	7	4
Fair	32	20
Good	73	88
Total	112	112

An improvement in performance was recorded at 30 Fire stations. This was achieved through various measures including additional pipe insulation, radiator controls and high efficiency lighting installations.

Work to install automatic lighting controls at STC was completed in March 2006 and an annual energy saving of 15% is predicted.

The design standard for station appliance bays was reviewed following a successful experiment to reduce the minimum ambient temperature from 10°C to 5°C. A programme to implement this change has commenced. This could achieve a 2-3% reduction in annual energy usage, equivalent to reduction of 17.5 tonnes of CO₂.

The Authority approved a cooling policy in March 2006 for its premises that sets out a systematic approach to dealing with reported problems of overheating. The implementation of this policy is expected to minimise the demand for cooling systems, which require high energy usage.

The pattern of energy usage by LFEPA is provided in Table 5. The overall energy reduction achieved over the last 12 months was 7.5%, which is equivalent to 612 tonnes of CO₂. In relation to the 1990 baseline the cumulative CO₂ reduction achieved to date is just over 12%. While overall energy consumption is down the rising price of energy resulted in the total cost of energy increasing by over 30% over the last 12 months.

Table 5. LFEPA Energy Usage data

	2001/02	2002/03	2003/04	2004/05	2005/06 *
Total Energy Consumption - Giga Watt Hour (GWh)	59.4	58.0	60.9	58.1	53.7
Total equivalent CO ₂ emissions (tonnes)	14726	14517	15500	14901	14289
Change in CO ₂ emission based on 1990 baseline (%)	9.32	10.60	4.55	8.24	12.01
Total Energy Cost (£ million)	£1.13	£1.06	£1.34	£1.48	£1.95
Electricity use (GWh)	14.3	14.6	16.5	16.0	15.7

Gas use (GWh)	45.1	43.4	44.4	42.1	38.0
Oil use (kWh)			73	73	0
* 2005/06 Data based on provisional data.					

A budget of £3m was approved in March 2006 for investment of both renewable energy schemes and energy reduction measures. Some 200 schemes have been identified and are currently in the process of being implemented. This initiative is estimated to enable the Authority to exceed the Mayor's current emissions reduction targets for 2010.

10.3 Renewable energy

The installation of photo voltaic cells on the roof of Richmond Fire station was completed in October 2005. The scheme generates approximately 11,300 kWhrs of electricity per annum and this represents a saving of 4.9 tonnes of CO₂. The scheme demonstrates the commitment of the Authority to generate its energy requirements from zero carbon sources, where possible, in line with the GLA policy. A grant of £65,000 from the Energy Savings Trust was received towards the cost of the scheme.

The Authority approved a photovoltaic scheme at Acton Fire station in January 2006. The system will add another 120 square metres of cells on the roof of the Fire station during 2006. This will generate a further 15,000 kWhrs of electricity per annum, equivalent to 6.5 tonnes of CO₂. The Authority's grant application has been successful and will provide £62,000 towards the cost of the scheme.

A solar heating system was installed at Tooting Fire station in January 2006. The system harnesses heat from the sun's rays to provide hot water. The station's new solar water heating system will provide enough energy to supply most of the hot water used in the station even during winter. Based on current gas prices, the complete system (which includes a computerised controller and a new smaller boiler) is predicted to save over £3,400 on the station's annual gas bill. The project will reduce carbon dioxide emissions by approximately 16 tonnes each year.

The Authority has also been successful in obtaining planning approval for a 1.5kW wind turbine at Hayes Fire station, which is due to be completed by July 2006. It is estimated to generate 4,000kWhrs of electricity, saving approximately 1.7 tonnes of CO₂ annually. A grant has been secured to fund 50% of the scheme costs. Planning has commenced for a solar heating system and a 6kW wind turbine at Wennington Fire station.

The Carbon Trust carried out a detailed feasibility study of a combined heat and power system (CHP) for STC. The findings are currently being evaluated.

11. WATER USE

During 2005/06 a 3.1 % increase, based on provisional figures, was experienced in the level of water use for non-operational purposes across the Authority, (see Table 6). This increase is likely to be due to the change from bottled water, to water coolers.

Water saving devices in the form of HIPPO and HOG bags continue to be installed. Automatic urinal flushing controls have been fitted at a further 4 stations.

Instructions have been issued to all Fire stations which are aimed at saving water during non-service delivery activities. These cover the whole Authority, including areas where there are currently no hosepipe bans.

The down sizing of water meters to reduce the associated standing charges has continued and has saved over £5,000 in standing charges annually.

New measurement software is currently being implemented which will allow information on water usage to be fed back to the individual Fire stations.

Table 6. Water use in LFEPA buildings

	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06 *
Amount of water used in facilities (m ³)	144,002	144,014	145,786	137,828	142,114
% Annual Change		-0.01	-1.23	5.46	-3.10
* 2005/06 Data based on provisional data.					

12. BIODIVERSITY

The most significant contribution that the Authority has in relation to biodiversity is by ensuring that LFEPA exercises its operational responsibilities appropriately and has regard for the need to protect sensitive sites. It is important that the potential impacts related to fire and other incidents are recognised and that planning and training arrangements take these considerations fully into account.

All trainee fire fighter and main grade staff receive induction training, which provides practical information on minimising risk to the environment. Fire fighters also receive grab pack training and are made aware of procedures to minimise potential environmental damage. The induction presentation has been continually improved to ensure that it contains current examples of relevant environmental issues. A version of the training package is being developed for training managers. Availability of training material on Hot Wire is being investigated.

Fire stations are encouraged, where possible, to have green areas or gardens, some of which incorporate wildlife areas.

13. NOISE AND NUISANCE

With increasing demands being placed on the Authority it is important to ensure that the potential impact on the community is fully understood. Seventeen environmental noise surveys have been carried out to identify the potential risk of additional noise from training activities, such as forced entry techniques, causing an increased level of nuisance. These will be used to recommend sites where potentially noisy training programmes could be carried out with minimal impact. These actions and recommendations support the existing Policy on Ambient Noise (MAN:D005:a6).

14. KEY ACTIONS FOR 2006/2007

Incident Prevention

- The pilot scheme for "Young Firefighters" will commence in the boroughs of Hackney and Bexley to support fire awareness education in the community.

Environmental Management

- Extend and monitor environmental management systems.
- To investigate if measures are available to determine LFEPA's operational performance in mitigating potential environmental damage.

Transport

- Maintain programme for LFEPA fleet replacement to meet the proposed emission standard by mid 2008.
- The objectives, targets and programmes of the Travel Plan will be developed based on the employee travel survey.

Procurement

- To maintain accreditation under ISO 14001 and to improve the performance against objectives and targets.
- To work with suppliers to improve the number of major suppliers which actively manage potential environmental impacts.
- To identify options to increase the level of purchased items, which have lower environmental impacts.

Waste Minimisation

- Continue to develop and expand recycling schemes within the Authority in order to minimise the level of solid waste generated.

Sustainable Design

- To transfer diesel storage from underground to ground level tanks.
- To complete the foam evaluation and to implement any use or storage recommendations Authority-wide.

Waste

- To have in place an Authority-wide waste collection contract, which allows measurement of key performance indicators.
- To develop a Hazardous Waste procedure and implement this across the Authority.

Energy

- A programme to install 40 wind turbines, 31 micro combined heat and power systems, 33 solar hot water systems and 20 additional photovoltaic systems has been approved and will commence in 2006/2007.
- A programme of energy reduction measures will be implemented including up to 40 installations of high efficiency lighting and major improvements to at least 5 heating systems.
- Ensure that all new buildings and refurbishments incorporate energy efficient systems and, where practical, on site generation.
- Extending the provision of usage monitoring reports from stations to all premises. The software for targeting and monitoring resource use has been updated and this will allow the provision of league tables for energy and water usage to all Borough Commanders for their stations.
- Continuing to promote good housekeeping in energy and water usage through articles in both the *iB* and other in house media.

Biodiversity

- To increase the level of information on potential biodiversity impacts within the Authority.

Noise & Nuisance

- To identify a baseline and measurements for the monitoring of environmental noise complaints within the Authority.

15. LEGISLATIVE CHANGES 2006/07

Environmental Liability Directive (2004/35/CE)

Anticipated implementation April 2007

This increases the financial liability of companies, which threaten or cause environmental damage. This will stimulate the need for environmental liability insurance, which may eventually become compulsory.

Action: The main defence against financial responsibility will be demonstrating good environmental practice in operating procedures. Extension of our environmental management systems will represent the first line of protection in the event of an incident.

Waste Electrical and Electronic Equipment (WEEE) Directive (2002/96/EC)

Anticipated implementation early 2007

This is an extension of end-of-life legislation to cover electrical and electronic waste such as TVs and radios, and requires collection schemes to be set up. The current delays in implementation of this legislation are likely to mean that the collection infrastructure may not be in place when the legislation is implemented.

Action: Continue to identify and where possible implement, existing reuse/recycling schemes for collecting of waste electrical items. This will minimise waste, demonstrate good practice and mitigate the impact of this legislation when implemented.

Draft Directive on Batteries and Accumulators and Spent Batteries and Accumulators COM (2003) 723

Anticipated implementation mid 2008

The EU has just adopted this directive. This is more end-of-life legislation which covers all types of batteries and requires collection schemes to be set up and restricts the use of portable Ni-Cad batteries.

Action: LFEPA is already active in recycling all batteries but a review of Ni-Cad battery applications will be required to ensure that all key applications are exempt.

Environmental Action Plan 2005/6 – 2006/7

Priority	Deliverable	Key Tasks	Lead Officer	Target date	Monitoring Position March 2006
1	Monitoring and reviewing the certified EMS for Procurement	<ol style="list-style-type: none"> 1. Hold regular meetings with Procurement representatives to review and revise EMS 2. Carry out Management Audit 3. Conduct Management Review of EMS 	Head of Procurement	Renew Certification, September 2006.	<p>Meeting to review preliminary audits, May 06.</p> <p>Actions to maintain and improve EMS on target, July 06.</p> <p>Improve the environmental performance of the supply chain, March 07.</p> <p>Increase level of purchases, which are identified as lower environmental impact, March 07.</p>
1	Conduct environmental audits	<ol style="list-style-type: none"> 1. All departments to undertake environmental compliance audits with the support of CHSES. 	AC (Op)	June 2006	<p>5 initial audits carried out on Fire stations as well as a follow up audit of the Firehouse, April 06.</p> <p>Integrated HS&E compliance audits to begin, January 07.</p>
1	Write an EMS to ISO14001:2004 specifications for the Property Department	<ol style="list-style-type: none"> 1. Assess property department environmental aspects and impacts 2. Identify roles and responsibilities 3. Write policy and relevant documentation 4. Establish objectives and targets 5. Build environmental legal register 6. Develop an environmental action plan 7. Conduct environmental awareness training. 	Head of Property	September 2008	<p>This would be applied to specific elements of the system, which will be introduced at relevant stages.</p>

Environmental Action Plan 2005/6 – 2006/7

Priority	Deliverable	Key Tasks	Lead Officer	Target date	Monitoring Position March 2006
1	Develop an Authority-wide EMS to ISO14001:2004 standard	<ol style="list-style-type: none"> 1. Environment Policy to be implemented 2. Identify roles and responsibilities 3. Conduct Aspects & Impacts Assessments for all departments 4. Establish corporate Environmental objectives and targets 5. Build environmental legal register 6. Develop an environmental action plan 7. Conduct environmental awareness training 	AC (Op)	<p>March 2006</p> <p>March 2006</p> <p>September 2008</p>	<p>Authority wide Environmental Policy awaiting approval, May 06.</p> <p>Initial aspect and impacts assessment complete.</p>
1	Environmental compliance assessments – estate wide	<ol style="list-style-type: none"> 1. Set out assessment criteria/risk checklist. 2. Undertake assessments systematically throughout the Authority. 3. Provide feedback to relevant departments for continuous improvement 	AC (Op)	Continual legal requirement	<p>In order for these assessments to have any bearing, there must be a mechanism in place for acting upon feedback. Continuous feedback must be integrated into procedures.</p> <p>Approval has been given to transfer oil storage from underground to over ground storage tanks April 06 for implementation by March 07.</p> <p>An evaluation of foam use and storage has been carried out, April 05.</p> <p>Foam use and storage recommendations to be implemented, June 08.</p>
1	Provide procedures to be used by the Authority in order to comply with current environmental legislation	<ol style="list-style-type: none"> 1. Publish procedure on Hazardous Waste disposal 2. Publish Chemical Storage and Spillage procedures 	AC (Op)	March 2006	<p>Draft Hazardous Waste Procedure prepared, May 06. Implementation, August 06.</p> <p>A programme to remove Hazardous Wastes off site is currently being</p>

Environmental Action Plan 2005/6 – 2006/7

Priority	Deliverable	Key Tasks	Lead Officer	Target date	Monitoring Position March 2006
					developed, May 06. Completion expected, June 08. Future legislation highlighted in Annual Report, May 06. Noise and Nuisance baseline and measures to be identified, March 07.
1	Prepare an environmental risk report annually	<ol style="list-style-type: none"> 1. Identify key environmental risks from station risk assessments and departmental risk assessments. 2. Generate the report for relevant personnel 	AC (Op)	December 2006	Existing risk assessment currently being reviewed based on site audits to be complete, December 06.
1	Improve communications	<ol style="list-style-type: none"> 1. Create an internet / intranet website. 2. Promote the Environment Group with regular articles published in <i>iB</i> and on the internet/intranet. 	AC (Op)	January 2007	A draft intranet website has been written and is expected to be published by January 07. Awaiting technical developments to support environmental information.
1	Improve environmental awareness	<ol style="list-style-type: none"> 1. Continue to deliver an induction presentation 2. Generate an induction booklet to new members of staff 3. Initiate an "environmental champions" programme including a training package 	AC (Op)	Ongoing March 2006 June 2006	The induction training has been updated and feedback from uniform and non-uniform staff being recorded, May 06. Induction booklet ready, June 06. Environmental Champions programme and web based training still under development. Expected, January 07.
1	GLA Mayoral Strategies	<ol style="list-style-type: none"> 1. Review consultation documents 2. Consider Authority Implications 3. Integrate into the Environment Strategy 	AC (Op)	Ongoing	Implement programmes to increase renewable energy generation, March 08. Implement programmes to increase energy efficiency, March 08. Meet LEZ targets for vehicle emissions, March 08. Implement programmes to minimise water

Environmental Action Plan 2005/6 – 2006/7

Priority	Deliverable	Key Tasks	Lead Officer	Target date	Monitoring Position March 2006
					use, March 08.
1	Emergency Preparedness	<ol style="list-style-type: none"> 1. Identify potential emergency and abnormal situations 2. Develop procedures for dealing with those incidents 3. Incorporate those procedures within the Authority or departmental EMS 	AC (Op)	June 2007	<p>This is part of the risk assessment programme which will look at internal and external risks.</p> <p>Identify measures to monitor the current environmental performance during operational incidents, June 07.</p>
2	Authority Travel Plan	<ol style="list-style-type: none"> 1. Undertake Transport survey, site assessments and all background work 2. Collate and assess information 3. Draft Travel Plan 4. Communicate initiatives 	AC (Op)	March 2007	<p>Draft Survey completed, September 05.</p> <p>Draft Objectives developed, March 06.</p> <p>Previous travel data reviewed and survey revised, April 06.</p> <p>Travel Survey target for completion, September 06.</p> <p>Implementation of Travel Plan, March 07.</p>
2	Authority Waste Review	<ol style="list-style-type: none"> 1. Establish current waste practices, and develop waste minimisation initiatives 	AC (Op)	December 2006	<p>The current tender is still with the GLA the contract is unlikely to be awarded before October 06. Measurements and targets in place, December 06.</p> <p>Development of improved recycling programmes and levels of recycling compared to waste volumes, March 07.</p>
2	Review of Sustainable construction and refurbishment practices		AC (Op)	Ongoing	Working with GLA on developing Sustainable Development indicators to ensure synergy with LFEPAs programmes and resources, March 07.
3	Biodiversity	<ol style="list-style-type: none"> 1. Undertake biodiversity and ecology studies of LFEPAs-owned or leased property and land. 	AC (Op)	Ongoing	A review of biodiversity sites in the Authority to be undertaken.

LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985**List of background documents**

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