

Environmental impact assessment (EIA) is a key tool for delivering sustainable development by:

- collating and presenting information about the likely significant effects of a proposed development;
- engaging consultees and stakeholders early in the design/decision-making process;
- allowing developers to identify key potential constraints at an early stage, saving time and resources in the long term;
- allowing developers to adopt an iterative approach to the design of a development scheme and the adoption of meaningful mitigation measures;
- providing decision-makers with all the necessary information on the potential effects of a development, and thus the basis for a robust determination process.

Environmental impact assessment



Capability statement

Entec

Entec is one of the UK's largest environmental and engineering consultancies and forms part of AMEC's Earth & Environmental division. Our technical and business skills are dedicated to delivering strategic, technical and engineering solutions which bring commercial benefit to customers at home and overseas. This know-how is based on over 60 years' consulting experience in the public and private sectors.



Certificate No. FS 13881

Certificate No. EMS 69090

Entec operates a Quality Management System in accordance with the latest requirements of the international standard BS EN ISO 9001 and an Environmental Management System compliant with BS EN ISO 14001. Both are audited by BSI Management Systems.



Environmental impact assessment

Entec has undertaken EIAs in a number of countries around the world, although most of its work is UK-based. European Community Directive 97/11/EC amends EC Directive 85/337/EEC, which was the origin of the UK's legislation regarding EIA. The directive has been given legal status in the UK through a series of regulations relating to different types of developments (see examples below). These regulations require that an EIA be carried out, before consent is granted, for specified types of projects that are considered likely to have significant environmental effects.

The EIA regulations for different types of development incorporate essentially the same EIA process, but vary significantly in terms of procedures, consultation requirements and the permitting authority involved. There are currently over fifteen different EIA regulations in force in England and Wales, with broadly equivalent but separate regulations covering Scotland and statutory rules covering Northern Ireland.

An EIA must satisfy the requirements of the regulations in its scope and content. However, when used as a positive tool in the design of a project, EIA can go beyond these requirements by helping to minimise the adverse environmental effects of a development and maximising the benefits that may arise from it. In so doing, it is a tool to help developers contribute to the achievement of sustainable development, whilst obtaining the required planning or other relevant consent for a development, as well as benefiting society at large.

Examples of different types of developments that can require EIA but which are covered by separate regulations:

- developments requiring consent under the Town and Country Planning Acts (e.g. large residential and commercial developments, quarries and opencast coal sites, power stations, waste disposal sites, chemical plants, airports etc.);
- trunk roads and motorways;
- power stations (including offshore projects) and power lines;
- long-distance oil and gas pipelines;
- nuclear power station decommissioning;
- railways, inland waterways and works affecting navigation (in England and Wales);
- harbour and coastal works;
- land drainage and flood defence works;
- forestry and deforestation;
- conversion of uncultivated and semi-natural land to intensive agriculture;
- fish farming.



Environmental impact assessment



Photomontage of proposed Shrewsbury Town Football Club stadium.

This visualisation has been produced using a methodology designed to provide a realistic representation of the proposal. It is however illustrative and, as such, Entec accepts no liability for inaccuracy.

Why Entec?

Entec has a long and proven track record in helping our clients to secure consent for developments for which an EIA has been either required or offered on a voluntary basis. Our success is a function of:

- **appreciating of our customers' development needs** - we go out of our way to understand our clients' requirements, forging close working relations in order that we can respond better to their needs;
- **liaising closely with designers/engineers** - we place considerable emphasis on the early development of a close working relationship between the EIA team and the architects and/or design engineers for the project, thereby enabling mitigation and enhancement measures to be incorporated into the design as it progresses. Entec also has in-house design and engineering skills;
- **providing breadth and depth in technical expertise (see box 1)** - we can undertake all aspects of an EIA using staff from our in-house team of more than 40 EIA specialists, which is large enough to enable us to respond to large commissions at short notice and includes numerous individuals with relevant public inquiry experience;
- **working flexibly** - we can, where required, provide project managers or technical specialists to form part of teams that are assembled by our clients;
- **understanding stakeholder concerns** - we place considerable emphasis on the importance of appropriate consultation at all relevant stages of the EIA process, such as through consultations with statutory bodies and non-government organisations, attending public meetings and exhibitions;
- **communicating information** - the EIA is reported in an environmental statement which must be understandable to those who are not technical experts and include a non-technical summary. Our experience shows that getting the communication process right is critical to steering the scheme smoothly through the consenting process;
- **providing high quality services** - we value the quality of our product and services. In addition to Entec's registration to the ISO 9001 quality standard, we are also registered with the Institute of Environmental Management and Assessment (IEMA) as an environmental impact assessor. IEMA regularly reviews the quality of our work in order to maintain our accreditation.

Box 1 Entec EIA expertise:

- Agriculture
- Air quality
- Archaeology & cultural heritage
- Community/social Impact
- Contaminated land
- Ecology / biodiversity
- Geology & soils
- Landscape and visual
- Noise
- Planning
- Recreation
- Socio-economics
- Traffic & transport
- Water resources & water quality



Environmental impact assessment

In considering the need for or undertaking EIA work we are guided by the following key principles, which we believe benefit our clients and/or deliver better quality environmental statements:

- **To undertake EIA only where appropriate;**

For some developments, there is no question about the need for an EIA. But for other developments the need is less clear and hinges on the likely significance of the predicted environmental effects. Although local authorities will often give a 'screening opinion' that an EIA is required, there have been many cases of these opinions being overturned by 'screening directions' by the Secretary of State. Where appropriate, we produce 'screening reports' explaining why there will be no significant effects and hence why an EIA is not required, thus saving the client time and money (although there may still be a need to collect some environmental information, that may comprise technical reports to accompany a planning application).



- **To focus effort on likely significant effects;**

The only effects that need to be assessed as part of an EIA are those that are likely to be significant - other effects can and should be scoped out. We place considerable emphasis on the screening and/or scoping stages of the EIA to ensure that these likely significant effects are identified and agreed with key consultees. These effects are then the focus of the rest of the EIA. Not only does this benefit our clients, by reducing the cost of the EIA, but it also helps consultees by providing them with a more focused environmental statement that is less time-consuming to review. It is critical that the detailed assessment that is carried out reflects a specification that has been agreed with key consultees, so that they are less likely to object to the scope of the work when the environmental statement has been completed.



- **Where possible, to avoid the need for a public inquiry.**

Not only are public inquiries time-consuming and expensive but they also carry a significant risk of failure. The best solution is therefore to seek to avoid them. To this end, we work closely with our clients and/or their design teams to build mitigation and enhancement measures into the design such that the adverse environmental effects of the development are minimised and the benefits maximised. To achieve this, requires early and ongoing consultation with statutory organisations and, where appropriate, non-statutory organisations and the wider public. In this way we ensure that key issues of concern are, where possible, addressed early on, thereby reducing the likelihood of objections and the need for an inquiry (although we recognise that public inquiries are inevitable for some contentious developments). This process also results in a development that genuinely contributes to the achievement of environmental sustainability, and avoids the often high cost of having to modify the scheme to 'bolt on' mitigation measures to a completed design.

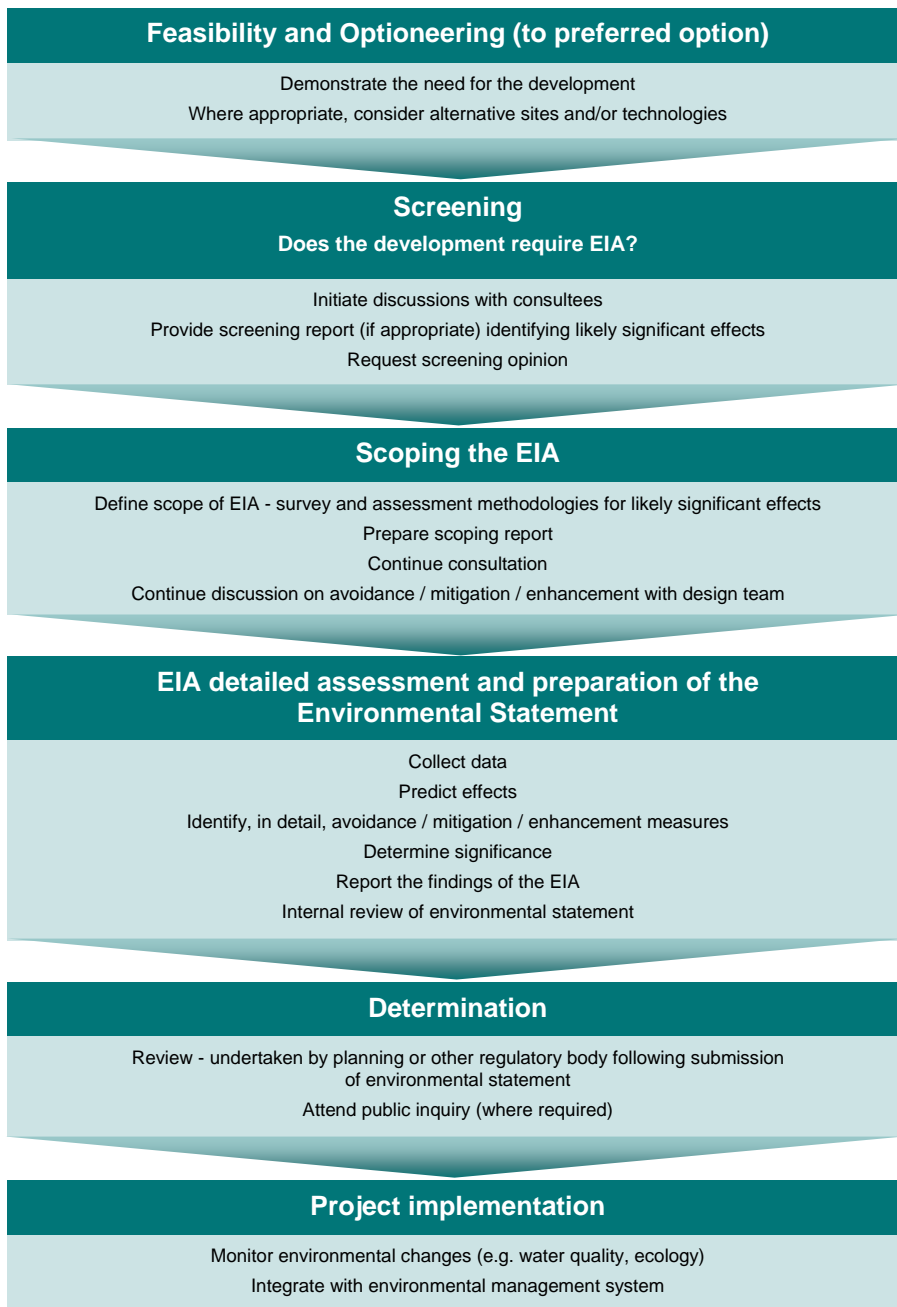


Environmental impact assessment

EIA involves collecting information about the environment that is relevant to a development project and making an assessment of how this environment would be altered if the development went ahead. For best results, the EIA should track the design process in order to feed in options for minimising adverse environmental effects and achieving environmental benefits at the earliest opportunity. Potential constraints can also be identified which, dependent on their severity, could mean that alternatives need to be considered.

The EIA process is summarised below, which illustrates the need for an iterative process, including on-going consultation with statutory and other consultees, as well as the design team.

The EIA process



Environmental impact assessment

Entec can offer services to address all of the steps in the process. In addition we also provide the following services.

- **EIA research:** Entec has (recently) undertaken research for the (former) Department for Transport, Local Government and the Regions (DTLR), to assess the effectiveness of the thresholds and criteria used to screen development proposals for the need to undertake an environmental impact assessment (EIA). The research involved an extensive consultation exercise, the responses from which provided the basis for making recommendations to the DTLR on measures to improve the effectiveness and efficiency of the process for determining the need for an EIA, including suggested amendments to the EIA regulations and the guidance in Circular 2/99.
- **EIA screening:** The decision over whether or not an EIA is required for a development is not always clear cut. We therefore provide advice to both local authorities and developers to assist in making this decision.
- **EIA review:** Increasingly, due to the complex nature of EIA development, local authorities require assistance in reviewing environmental statements. Entec can provide this service, using a recognised review procedure in order to identify any weaknesses in the ES and topics for which local authorities should request additional information.
- **Link to environmental management:** We recognise the need for the environmental statement, and specifically any mitigation and enhancement measures it contains, to be carried through to the project implementation stage. By providing clients with an environmental management plan and/or operational stage environmental management system we are able to ensure the appropriate controls are in place.
- **Integration with other permitting requirements:** Frequently a project will require a number of permits in addition to the primary development consent. We are therefore conscious of meeting the environmental information needs of the complete permitting package required for a particular development. For example, this may involve integration of the EIA with the requirements under legislation such as pollution prevention and control, protected species legislation, and the Hedgerow Regulations.

Case studies

The following pages demonstrate Entec's capabilities in the area of environmental impact assessment, using case study examples.

Example of amphibian fencing used to exclude great crested newts from a development area.



Environmental Impact Assessments of Proposed Raw Water Storage and Transfer Facilities Essex & Suffolk Water



Essex has a low rainfall compared with much of the rest of Britain. This coupled with an increasing population present a major challenge for Essex & Suffolk Water (ESW), the largest water supply company in Essex. This challenge is to ensure that the company is able to maintain a reliable supply of water to both existing and new customers, whilst at the same time meeting its environmental obligations.

There are two key elements to meeting this challenge. One is to provide sufficient capacity for the storage of raw water. The second is to ensure that sufficient water is available to support the storage facilities. If these twin requirements cannot be met, there will be insufficient water to meet residential and industrial needs within Essex, which could have major social and economic consequences.

Entec has been working since 1996 with ESW and its consultant engineers (including Halcrow as project managers), focusing on both storage capacity and support for the storage facilities.

Storage capacity

From a long list of potential sites for the provision of new storage capacity, ESW identified two sites that could meet its projected needs and that, technically, environmentally and financially, appeared the best options. Entec carried out environmental impact assessments (EIAs) for both sites, working closely with WS Atkins and Binnie, Black and Veatch (the

consulting engineers for the two schemes). One of these schemes was the construction of a major new reservoir at Feltwell, in the Fens to the east of Cambridge. The other was a scheme to raise the level of the existing Abberton Reservoir in Essex in order to increase its capacity for water storage. The EIA for Feltwell concluded that there would be major problems in developing a new reservoir, largely because the birds that it would attract would cause a significant risk of bird strike, affecting aircraft from nearby military airbases. Consequently, ESW decided to take forward the Abberton proposal, which the EIA concluded offers significant benefits to the site's internationally important bird populations.

Water support

The majority of the water that currently supplies Abberton Reservoir is pumped from the River Stour, which is supported by transfers from the Ely Ouse to Essex Transfer Scheme (EOETS). The EOETS makes use of watercourses and pipelines for the transfer of water between the River Ely-Ouse at Denver in Norfolk and the headwaters of various Essex rivers. To meet the supply requirements for a raised Abberton Reservoir, there would be a need for increased transfers to the River Stour

(and/or potentially other rivers) via the EOETS. Entec is assessing the environmental effects of this increase. The first stage was to assess various options for increasing the transfer volumes. Once a preferred option has been agreed with the Environment Agency, a detailed EIA will be carried out that will consider effects on the transfer rivers and other affected areas. This will build on an EIA that Entec previously undertook for the Environment Agency to examine the effects of the existing operation of the EOETS. This study, completed in 1998, comprised a series of reports covering hydrology, water chemistry, river biology, fisheries and land use / socio-economic impacts.

Once the environmental impact assessments and other work are complete, ESW will be in a position to begin seeking permission to develop the new storage and supply capacity that it requires.

*Meeting Essex's
water needs in an
environmentally
responsible way*

Key Issues for the EIA

Abberton Reservoir EIA

The reservoir is a Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site, reflecting its large over-wintering waterfowl population. As part of the EIA, surveys were carried out to plot the spatial distribution of waterfowl. The data obtained were then used to examine the factors that affect the distribution of birds, with depth being shown to be the key influence. Using data derived from hydrological models and information about the depth profile of the raised reservoir, an assessment was then made of how valuable the raised reservoir would be for birds. As well as considering birds, the EIA involved assessments of effects on other fauna and on vegetation. A wide range of other environmental topics was also investigated, with key issues including landscape, noise and traffic. The work involved close liaison with English Nature, the Essex Wildlife Trust, the RSPB and others.

EOETS EIA

Works required to the EOETS and the rivers that it supports could include changes to river channels to accommodate increased flows, river restoration works to offset adverse environmental effects and pipeline construction. The EIA, which is being undertaken in close consultation with the Environment Agency, considers the effects of all of these works on the natural environment and the users of the river valleys, as well as effects on the Stour Estuary SSSI, SPA and Ramsar site. This could be affected by changes in the quality and quantity of in-flow (as a consequence of changes in flows in and abstraction from the River Stour), with effects on the site's internationally important numbers of wading birds.



Environmental Advice at Powharnal Opencast Scottish Coal

Scottish Coal is the largest coal mining company in Scotland. The coal it extracts from opencast mines at sites across central Scotland is used primarily for electricity generation, and plays an important part in meeting the government's policy for a secure and diverse energy supply. Because the life of each mine is limited, the company is always seeking opportunities to develop new sites and extend existing ones. Each new site or site extension requires thorough environmental impact assessment and careful design to make it environmentally acceptable and to ensure that potential environmental benefits are achieved. Entec has worked with Scottish Coal on the assessment and design of several sites, and is retained by the company to advise on ecology and archaeology issues, both of which can be critical for consent or expensive to resolve. Ecology, in particular, can be a 'show-stopper' if not addressed appropriately.

One of Scottish Coal's most promising prospective sites is at Powharnal, near Muirkirk in East Ayrshire, where a relatively small extension to the existing Gasswater opencast will enable the extraction of around 7 million tonnes of coal in an economically favourable way. The Powharnal site, however, is in an area of upland that is internationally important for its breeding birds, and part of the site falls within the Muirkirk and North Lowther Hills Proposed Special Protection Area (pSPA) and Site of Special Scientific Interest (SSSI).

Entec was engaged to undertake a suite of baseline environmental studies, including surveys of birds, mammals and vegetation, and prepared a series of mitigation measures including a restoration plan aimed firmly at providing improved habitat for birds. Entec also put together the Environmental Statement

accompanying the planning application. Following objections from Scottish Natural Heritage (SNH) and the Royal Society for the Protection of Birds (RSPB), Scottish Coal spent a further two years undertaking detailed studies on the ecology of the principal bird species affected - the hen harrier - in order to address these. Entec advised on the scope of these studies, and devised a successful approach to wading bird habitat creation that has been trialled on the Gasswater site. In 2002 Entec contributed to the preparation of a twenty-year monitoring plan and the revised restoration plans and mitigation proposals that have accompanied the resubmitted planning application.

An opencast coal mine in an ecologically sensitive location



Black Law Windfarm Environmental Impact Assessment ScottishPower

ScottishPower's main business is the provision of dependable electricity supplies, and it operates several coal, gas, wind and hydroelectric power stations. In response to international and national concerns about climate change the UK is seeking to generate more of its electricity from renewable resources, and under the Renewables Obligation (Scotland) all electricity producers will be subject to escalating financial penalties if they fail to do this. On-shore 'windfarming' is an established renewable energy technology with the potential for substantial expansion in Scotland, and ScottishPower are relying on this to meet their obligation in the short to medium term.

Larger windfarms close to the main centres of demand are attractive for technical and environmental reasons, and ScottishPower identified a potentially suitable site at Black Law, near Forth, about 20 miles east of Glasgow. Here the company wishes to erect a 134 MW windfarm (sufficient to generate power for 80,000 homes), consisting of 67 turbines, each with a hub-height of 70m and a blade diameter of 80m. Entec was engaged to carry out the Environmental Impact Assessment of the project, co-ordinating inputs from external landscape and noise specialists as well as a multi-disciplinary in-house team, and

assisted in the design through constraints identification and mapping, and a series of specialist studies. Ancillary operations requiring assessment included the conversion of 480ha of conifer plantation to modified blanket bog and broadleaf woodland, and the sourcing of roadstone for use on the site through the reopening and restoration of a derelict opencast mine. These have required the development of a habitat management plan in consultation with the Royal Society for the Protection of Birds (RSPB) and the various landowners, and the reassessment of coal reserves and development of a revised method of working for the opencast mine, together with detailed restoration plans. Entec also undertook the EIA of the overhead power line that will connect the windfarm to the national electricity distribution system.

*Assessing the
environmental
impacts of a
large windfarm
in Scotland's
Central Belt*



Brownfield Site Redevelopment at Bilston, West Midlands Advantage West Midlands



Advantage West Midlands, the regional development agency, has worked with local authority partner Wolverhampton City Council to assemble a large previously-used site for an 'urban village'. An imaginative vision and development concept was prepared by award winning architect Andrew Wright.

To establish the planning position and support a compulsory purchase action for an unsightly scrapyards, Entec submitted a planning application, environmental statement and transport assessment.

The proposal is ambitious: high quality housing, commercial and leisure uses in a landscaped urban park, adding significantly to adjoining neighbourhoods and Bilston town centre. The approach is highly sustainable, emphasising public transport, cycling and walking, and low maintenance landscaping with a 2 hectare water feature. This is far removed from the legacy of heavy industry and coal mining - but quite appropriate for the largest brownfield opportunity in the Black Country.

Entec assessed the environmental implications of the proposed site remediation and built development, identifying appropriate design and controls to keep the impacts acceptable. A transport assessment considered how the site will be accessed, whilst reinstating pedestrian and cycle routes to the town centre and newly built Centro tram route.

The planning case has demonstrated how many of the Government's Urban Task Force recommendations are to be adopted. Some of the housing will be at high densities, up to 80 dwellings per hectare, with an emphasis away from private car usage and on-site parking. This is a radical approach for an established urban area with modest land values, and demonstrates Advantage West Midlands' intentions for the site.

Work by Entec and the overall project team has provided a compelling planning and environmental argument for taking forward this bold project. Planning approval will reinforce the case for compulsory purchase of the last piece in the land assembly jigsaw and remediation of the site can start in late 2002.

*Leading-edge
solutions for a
40 hectare
brownfield site*



Chalk Slurry Pipeline Environmental Impact Assessment Rugby Cement

Rugby Cement's existing 92 km pipeline for transporting chalk slurry from its quarry in the Chilterns to its processing plant in Rugby needed replacement due to an increase in demand as it approached the end of its reliable life. Entec's detailed knowledge of the planning process enabled its consultants to confirm that the submission of an Environmental Impact Assessment was not mandatory, however Entec identified a range of cost and project management benefits that a comprehensive EIA would provide for Rugby Cement.

Rugby Cement and their project management sub-consultants wanted to minimise costs and possible delays caused by potential environmental constraints along the route. Entec assembled a team of in-house specialists to undertake a comprehensive 'scoping' report to identify the principal potential constraints with regard to impacts upon flora and fauna, landscape, contaminated land, road crossings, groundwater and surface water resources, cultural heritage sites and temporary disruption of farming activities and public rights of way. Where potential issues were identified, Entec worked in close co-operation with the client and its project management sub-consultants to develop effective mitigation measures. These were concisely set out in the Environmental Statement (ES) and dealt with issues such as the preferred access routes for contractors, location of compounds and minor re-alignments to prevent damage to statutorily protected badger setts. The ES was then issued as a contract document to the tenderers to ensure that the successful contractor made suitable provision for the potential environmental costs in their tender.

The non-technical summary of the ES was issued to all site foremen. Following liaison with Rugby Cement and the contractor's environmental manager, the information gathered during the surveys was analysed to provide further operational savings during the construction period. This was achieved by the production of environmental summary



Preparation of EIA and ongoing construction environmental monitoring for 92km pipeline

maps for the contractor's use in the field and hedgerow replacement maps. As ecology and cultural heritage were identified as the key potential environmental issues that could delay the replacement contract, Entec designated a project ecologist and a project archaeologist for the construction periods. They liaised closely with the contractor to pre-empt potential problems and liaised with the relevant statutory authorities where environmental issues arose e.g. accidental spillage of materials. This ensured that there were no delays to the programme with no resultant costs to the client.

As the construction works were undertaken over three successive summers, Entec ensured that the information remained up to date by undertaking a review each spring prior to the re-commencement of site works. This allowed the identification of potential problems such as new badger setts or newly identified areas of contaminated land or designations. In this manner it was

discovered that a colony of Great Crested Newts were present in one area to be crossed by the pipeline. As Great Crested Newts are a legally protected species their presence had the potential to severely delay the pipeline works. Entec was able to use the experience of its ecologists to develop a remediation strategy with English Nature and the (then) DETR. Detailed negotiations led to the issue of a licence to allow the implementation of a large-scale trapping and removal programme ensuring there were no unnecessary delays and that Rugby Cement avoided the risk of heavy fines that would have been imposed had any damage been inflicted upon the newts.

Entec's inputs during the planning and implementation of this complex, large-scale project enabled Rugby Cement to efficiently undertake the pipeline replacement that was a key milestone in the modernisation of its entire operations at its Rugby site.



Lackford Landfill Extension Environmental Impact Assessment Suffolk Waste Disposal Company Limited



The Lackford landfill site near Bury St. Edmunds is a key component of the Suffolk Waste Disposal Company's future strategy for county wide waste management. However under present permissions the site was approaching the end of its landfill capacity. On the basis of its track record in securing planning permissions for landfill developments, Entec was engaged to design the extension and secure all the relevant permissions. The planning application required the development of a comprehensive restoration scheme and was supported by a mandatory EIA.

Key environmental issues that had to be addressed included the site's location of the edge of an area of landscape designation; potential impacts upon stone curlews - a nationally rare and legally protected bird species; the site's location above a major aquifer and the visual impacts of a raised landform in a relatively flat, open area. Entec's team worked in close co-operation with the client and the relevant statutory consultees to develop an extension and restoration scheme that minimised environmental impacts whilst maximising

the volume of landfill material and the profitability. This was achieved through a complex phasing programme involving the extraction of mineral resources from the extension area and the use of photomontages to ensure that the final design had minimal landscape and visual intrusiveness.

Entec was able to provide increased value to the site's operation by designing and incorporating a Materials Recycling Facility and a gas power plant to generate electricity from landfill gas. Entec was also able to respond to additional requirements such as the development of a woodland management plan for an adjacent woodland that were identified during the consultation process avoiding any potentially costly delays for SWDC. The landfill extension was granted planning permission in 1999 which will allow Lackford to play a key role in Suffolk's waste management policy until 2023.

*EIA for controversial
landfill extension in
environmentally
sensitive location*



Heathrow Terminal 5 Inquiry BAA



Photo courtesy of BAA picture library of BAA plc

BAA is the largest operator of airports in the UK. To meet the increasing demand for air travel, BAA planned to expand the capacity of Heathrow airport by 30 million passengers per annum through the provision of a new terminal with supporting infrastructure. The planning application for the development became the subject of the UK's longest running planning inquiry.

Entec headed the team that assessed the air quality impacts arising from the proposed development and its construction. The work focused on the assessment of existing air quality at, and around, the airport and the modelling of atmospheric emissions nitrogen oxides, carbon monoxide, sulphur dioxide, volatile organic compounds and particulate matter, (specifically PM₁₀) from four source regions, the airport, the near Heathrow region, Greater London and the remainder of the UK in a base year (1993) and two future cases - 2016 with and without the terminal. Modelling of the base year was undertaken to compare the predicted results against measurements at a number of monitoring sites in the near

Heathrow region. Modelling of future air quality allowed the potential change in air quality both with and without the new terminal to be assessed. In examining the future air quality consideration was given to the predicted increase in both air and road traffic in the area around the airport as well as forecast changes in other emissions from road transport, domestic, commercial and industrial.

The individual air quality assessments were published in a series of reports covering for example the terminal, modelling sensitivity and uncertainty tests, modelling sensitivity and uncertainty tests, construction, calculation of short period concentrations and model and monitoring comparisons. The assessments of existing and future air quality were used as the basis of evidence prepared and presented at the inquiry.

The assessment for the construction of Terminal 5 concentrated on nitrogen oxides, PM₁₀ and nuisance dusts following the change in emissions and concentrations in five years. The assessment showed the impacts of construction against a no Terminal 5 case.

Preparation and presentation of air quality evidence at Terminal 5 Inquiry

Entec presented evidence at the inquiry in both the air quality and construction topics. Other projects were undertaken by Entec including contaminated land/groundwater assessments, development of a construction waste minimisation strategy and a demographic study. Entec presented evidence on the demographic study.

The early publication of the air quality assessment facilitated extensive discussions with the local planning authority and other interested parties which enabled the preparation and agreement of joint position statements on much of the technical detail of the monitoring and modelling studies. Entec lead these discussions on behalf of BAA and prepared the position statements. The submission of the agreed position statements to the inquiry provided a focus to the issues between the parties thereby reducing inquiry time on the air quality topics.



Proposed Waste Management Facility Kingston upon Hull City Council

Kingston upon Hull City Council received a planning application in December 2000 for a proposed waste management facility in Hull. The plant, which would include a waste to energy plant and ash processing, was being promoted by the Waste Recycling Group which has a 25 year contract with the City Council and the East Riding of Yorkshire Council, which are the Waste Disposal Authorities for their areas.

The application was submitted in response to the need to reduce reliance on landfill for waste disposal for Hull and the East Riding, but the key question for the Council was "is an incinerator the best way forward?". In answering that, the



The proposed site

Independent review of environmental effects of proposed waste incinerator

main considerations were the environmental effects of the scheme in view of the high level of public concern about the proposals. On that basis, the council wanted an independent review of the Environmental Statement submitted with the application, in order to assist in its determination of the planning application. Following a competitive bidding process, Entec was chosen as the preferred consultant to carry out the review due to our extensive experience in waste management and also our track record in Environmental Impact Assessment.

The project involved two key stages. The first was a review of the Environmental Statement using a methodology developed at the University of Manchester. This enabled a quality check of the Environmental Statement to establish whether it contained the relevant

information as required by the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. The next stage was an in depth review of the technical content of the Environmental Statement against a number of criteria. Our in-house team was able to provide advice on all aspects of the assessment including the key issues of need and air quality, the latter was the main concern of local residents.

The findings of the review were presented in a report which set out the main areas of omission. This enabled the Council to understand where they required additional information and request this from the Applicant. The report was also used by the Council during a series of public meetings which were organised in order to enable local residents to comment on the proposals.



New Oil Tanker Facility at Milford Haven Texaco



Texaco was looking to improve the competitiveness of their export operations by providing new loading facilities for tankers at their Pembroke Refinery. The project involved refurbishing a partially redundant jetty and linking this to their existing jetty by a pipe bridge on piles in the seabed. This would reduce the need for vessels to anchor while awaiting a berth, thus also securing an improved safety regime for shipping operations. They commissioned Entec to undertake an environmental impact assessment (EIA) in support of applications for permission for the works.



The development site is adjacent to a national park and within a special area of conservation (SAC), and the EIA was completed taking these into account. Entec worked closely with Texaco and their local contacts, to ensure that the interests of all stakeholders were considered in full. The environmental statement covered impacts on the marine environment, as well as impacts on the surrounding wildlife, including birds, bats and badgers. Other issues assessed included noise, traffic, cultural heritage and landscape. Appropriate mitigation was recommended for adverse impacts. The results of the study were presented at a public meeting, where participants were able to raise concerns and, in fact, also to express support.

Entec managed the applications for the necessary permissions from the Department for The Environment, Transport and the Regions (DETR),

the Ministry of Agriculture, Fisheries and Food (MAFF) and the port authority. The EIA also supported an IPC variation application to the Environment Agency Wales and lease negotiations with Crown Estate. Close consultation with two local planning authorities was important, in relation both to their roles as statutory consultees for the marine works and their planning authority functions regarding permitted development rights for temporary construction work sites.

Entec secured the necessary permissions in time to meet Texaco's critical deadlines. Establishment of early dialogue with local interests and the wide range of technical capability available within Entec were crucial factors in producing an environmental statement that generated no further objections during the formal public consultation. This ensured a smooth passage of the applications, with no unexpected delays.

Environmental impact assessment and marine permits for Texaco



Flue Gas Desulphurisation at Eggborough Power Station Kvaerner



Reducing environmental emissions in North Yorkshire

Entec was commissioned by Kvaerner (who are acting as owner's engineer to British Energy) to undertake two major items of work in relation to the plan to install flue gas desulphurisation at British Energy's Eggborough power station. These were a BATNEEC/BPEO assessment to identify the most appropriate means of reducing emissions from the power station, in line with its integrated pollution control (IPC) authorisation requirements; and secondly, as the extension to the power station requires consent from the Department of Trade and Industry under the Electricity Act, to prepare an environmental impact assessment of the chosen option to accompany the Section 36 application.

British Energy purchased Eggborough in early 2000 in order to increase its generating flexibility which consisted of a 10 gigawatt (10GW) nuclear base load. Coal fired generation, as at Eggborough, emits large quantities of sulphur dioxide and this is the key pollutant requiring abatement. The BATNEEC/BPEO review identified wet limestone flue gas desulphurisation (FGD) as the appropriate technology and the EIA was carried out on that basis.

The EIA involved a detailed scoping exercise in consultation with the county and district authorities. This identified that the full range of environmental issues required consideration in the EIA,

although not all at the same level of detail. A comprehensive environmental statement was prepared which covered sourcing of the limestone raw material and removal of the waste product (gypsum), traffic and transportation, air quality, noise, water quality, ecology, landscape and visual impacts, contamination, health and safety and cultural heritage.

The application has been submitted to the DTI and Section 36 consent has been awarded.



Howdon Secondary Sewage Treatment Works Northumbrian Water



*An £86 million
flagship scheme for
Northumbrian Water's
largest regional waste
water treatment centre*

Entec was commissioned by Northumbrian Water to prepare and submit a planning application and accompanying Environmental Impact Assessment to improve existing facilities at Howdon Sewage Treatment Works (STW), by the River Tyne, North Tyneside. The provision of secondary treatment facilities represents a huge investment by Northumbrian Water in order to comply with European Directives (Urban Waste Water Directive 91/271) and complementary UK legislation. Under these provisions, additional treatment was required to upgrade the level of treatment to water before being discharge into receiving waters.

Entec successfully steered Northumbrian Water through a sensitive and challenging planning process by maintaining a consistent and open approach with the LPA, the production of a thorough and robust Environmental Statement, and sensitivity towards residents of East Howdon Residents Association.

Whilst the principle of the scheme was to provide additional sewage treatment facilities in accordance with EC legislation, the key issues to address surrounding the proposal were the mitigation of odours, the visual impact and the effect of additional traffic movements. Through a co-ordinated approach, Entec were able to guide the proposal through the planning system, and offer suitable mitigation measures to safeguard local residents. Entec were also able to advise Northumbrian Water's legal team on the content of a section 106 agreement to create and maintain a wetland feature. This proved a highly successful venture, which was opened by Environment Minister Chris Mullin and now attracts many local wildlife species bringing educational and recreation benefits to the local vicinity.



Environmental impact assessment

Sample client list

Advantage West Midlands
AES Electric
Aggregate Industries
Alaska Developments
BAA
British Energy
Clubhaus
Crown Estate
Essex and Suffolk Water
Highways Agency
Ikea
Kingston upon Hull City Council
Lancashire Waste Services
Magnox Electric
Ministry of Defence
National Grid Company
North West Development Agency
Northumberland County Council
Northumbrian Water
Railtrack
Rugby Cement
Scottish Coal
Scottish Power
Shanks Waste Services
SITA
Southern Water
Tarmac
Texaco
Upper Avon Navigation Trust
Worcestershire County Council



Entec

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