Brendan Mangan

From: Brendan Mangan
Sent: 05 July 2001 15:23
To: Sylvia Shannon (E-mail)
Subject: Additional Information Mayo - Galway EIS.

Dear Sylvia,
Attached is the Additional Information Report prepared by Arup in response to the comments contained in the TES facsimile to the DPE of 14/6/01.
This Report will be further updated, if necessary, on receipt of the comments of Dúchas.
Contact me if you have any queries.
Regards,
Brendan.

BORD GÁIS ÉIREANN

Head Office:
P.O. Box 51,
Gasworks Road,
Cork.
Telephone (021) 4534000
Fax (021) 4534001

BORD GÁIS

20 March, 2001

Secretary General,
Department of Public Enterprise,
44, Kildare Street,
Dublin 2.

Att: Ms. Orla Ryan,
Gas (Regulatory) Division

Dear Sir,

Re: Proposed Mayo/Galway Gas Pipeline

Pursuant to Section 8 (7) of the Gas Act 1976, as amended, Bord Gais Eireann hereby applies to the Minister for consent to the construction of the Mayo / Galway Gas Pipeline. The pipeline would transport gas supplies from the proposed Enterprise Energy Ireland Gas Reception Terminal at Bellanaboy, Co. Mayo to link up with the proposed Gas Pipeline to the West at Craughwell, Co. Galway. A route map and outline programme for the project are attached.

Key programme dates are:

- Construction Start — 25th March, 2002
- Gas Delivery — 30th April, 2003

In relation to the required agreements between Bord Gais and Enterprise Energy Ireland please note the Commercial Heads of Terms in respect of capacity have been agreed, the Development Agreement in respect of the construction of the Mayo-Galway Pipeline has also been agreed while the Operations Agreement, encompassing the Code of Operations, is well advanced but not yet agreed.

The source of gas at the Mayo end will be the offshore gas field of Enterprise Energy Ireland while at the Galway end of the pipeline gas will be delivered into the proposed Gas Pipeline to the West at the proposed Craughwell AGI.

The proposed pipeline, which is 650 mm in diameter, would:

- facilitate the delivery of Corrib gas to the marketplace via the proposed Gas Pipeline to the West and the existing Bord Gais transmission network;
- increase security of supply aspects of the gas transmission system;

- *facilitate the provision of gas supplies to towns such as Castlebar, Claremorris and Tuam which are adjacent to the pipeline and open up the future possibility of supply to the North West Region including Ballina / Sligo and*

- *encourage further offshore exploration off the West coast.*

The project is currently at an advanced stage: wayleave packages are ready for issue, detailed engineering / procurement is ongoing and pipe tenders have been received.

We also confirm that we will submit the EIS shortly, in accordance with Section 40A of the Gas Act 1976 as amended by the Gas Amendment Act 2000.

Bord Gais Eireann was established by the Gas Act 1976; the functions of Bord Gais Eireann are as set out in the Gas Acts 1976 to 2000. We enclose a copy of the Annual Report and Accounts for 1998 and 1999.

Recent pipeline projects completed by Bord Gais are as follows:

PROJECT TITLE	LENGTH (km)	COST IR£
Cork Southern Feeder	4.8	0.8m
NEP III	83.1	10.8m
Interconnector	286.7	273.3m
Glebe West to Naas	6.5	1.2m
Dublin Southern Feeder	18.0	5.3m
Diswellstown to Leixlip	7.4	2.2m
Sandyford to Carrickmines	3.5	0.6m
Leopardstown to Poolbeg	8.0	4.1m
Carrickmines to Bray	9.9	2.3m
Santry to Cadbury's	3.9	1.6m
Abbotstown to Poolbeg	16.0	14.0m
Caherlag to Ballincollig	22.7	6.7m
Pilltown to Navan	25.0	4.6m
Baunlusk to Ballyragget	25.0	3.6m
Ballyvass to Athy	10.0	2.2m
Ballincollig to Ballineen	16.5	8.3m
TOTALS	527.0km	£341.6m

Please do not hesitate to contact me if you require further information to help you in processing this application.

Yours faithfully,

B.J. Barry
Secretary

Report Mayo to Galway Gas Pipeline EIS

Draft 1 – Additional Information

July 2001

C689/100

Report Mayo to Galway Gas Pipeline EIS

Draft 1 – Additional Information

Prepared By: Ria Lyden
Signed: Ria Lyden Date: 2 July 2001

Checked By: Ria Lyden
Signed: Ria Lyden Date: 2 July 2001

Passed By: Eoghan Lynch
Signed: Eoghan Lynch Date: 2 July 2001

Revision Record

Issue No.	Date	Status	Prepared	Checked	Passed
1	02/07/01	Draft Report	RL	RL	EJL

ARUP
Consulting Engineers

Table of Contents

1 Introduction

The Mayo to Galway gas pipeline project comprises the construction of a circa 150km, 660mm (26inch) diameter, high pressure gas transmission pipeline from the Corrib Bellanaboy Bridge terminal in Co. Mayo to Craughwell, Co. Galway. Enterprise Energy Ireland Ltd., who initiated the project, signed a contract in late 2000 with Bord Gáis Éireann (BGE) whereby BGE would undertake detailed design and construction of the pipeline. Enterprise Energy Ireland Ltd. had commissioned an Environmental Impact Assessment and the preparation of an Environmental Impact Statement (EIS). When BGE took over the project Arup Consulting Engineers assumed responsibility for completion of the EIS.

The EIS was submitted to the Department of Public Enterprise in May 2001. The Department appointed consultants to review the EIS. This document is a response to queries raised by the consultants.

2 Safety and Risk Management

2.1 Non Routine Events

Chapter 22 of the EIS contains a summary of the environmental impacts of the Mayo to Galway gas pipeline. Section 22.4, 'Non Routine Events', describes the environmental risk assessment process and provides a risk assessment of potential hazards. For eight events the nature of the event, the control measures to prevent its occurrence and the likely environmental consequences are tabulated.

2.2 Risk Assessment

The event which would pose a risk to nearby residents from a gas pipeline or an associated above ground installation (AGI) is an escape of gas which subsequently ignites, causing a fire or explosion. For this to happen there must be both a gas leak and a source of ignition. A leak of gas on its own will not pose a risk as the gas, which is lighter than air, will dissipate into the atmosphere very quickly.

Natural gas is an asphyxiant. This can pose a risk to personnel and must be considered in the design of certain types of gas installation. A gas transmission pipeline does not pose a risk of asphyxiation to nearby residents.

2.3 Gas Leak Prevention

To prevent a gas leak, the pipeline has been designed and will be constructed, operated and maintained in accordance with IS328 Code of Practice for Design and Installation of Gas Transmission Pipelines, 1989. The pipe size, grade of steel, wall thickness and corrosion protection systems have been specified to ensure the pipeline is suitable for its purpose and to ensure that its integrity is maintained during its design life.

To be included in the pipeline construction tender list, contractors will have to pre-qualify, by demonstrating their competence and previous experience in pipeline construction. Construction method statements must be provided for each element of the work. The method statements will be scrutinised and only a contractor of proven competence will be appointed. The pipeline will be constructed to the highest standards. Material and workmanship will be inspected and tested and the entire pipeline will be pressure tested prior to commissioning.

BGE has developed a comprehensive set of procedures for pipeline operation and maintenance. These are contained in BGE's Field Operations and Maintenance - Works Instruction Manual. The manual specifies maintenance and inspection routines designed to ensure that the integrity of the pipeline is not compromised.

2.4 Prevention of an Ignition Source

Possible ignition sources are sparks arising from impact damage to the pipeline during operations or a spark from an electrical source at an AGI. The pipeline will be given a minimum of 1.2m of soil cover to prevent damage from routine events. The cover will be increased under the bed of rivers and streams. The most likely cause of damage to the pipeline would be excavations close to the pipeline. The pipeline wayleave will be monitored regularly to ensure that no unsupervised excavation occurs. If there is some requirement to excavate close to the pipeline, the method of working will be specified and BGE personnel will supervised the work. At the AGIs, any electrical equipment, which could come in contact with gas, will be specified to have the appropriate rating for use in a potentially explosive environment.

2.5 Gas Pipelines Safety Performance

BGE has operated high-pressure gas transmission pipelines in Ireland for more than 20 years. In this time no catastrophic failure has occurred which has resulted in the release of gas to the atmosphere. A report, published recently by European Gas Pipeline Incident Data Group (EGIG), presented data on pipeline safety performance of high pressure (>15bar) gas transmission pipelines. This group comprises nine operators in Denmark, Spain, France, Holland, Germany, Belgium, Italy, Switzerland and UK. The main results of analysing the safety performances of their pipeline systems are:

- Over the period 1970 to 1998 there has been no fatal accident involving inhabitants.
- The overall incident frequency with an unintentional gas release over the period 1970 to 1998 is 0.480 incidents per year per 1000km pipeline. However, the figure over the period 1993 to 1998 is significantly lower: 0.211 incidents per year per 1000km pipeline.
- External interference is the main cause of gas pipeline incidents involving gas leakage; an average of 0.239 incidents per year per 1000km pipeline for the period 1970 to 1998. However, an improvement in the incident frequency occurred over the period 1993 to 1998 where this statistic reduced to 0.087 incidents per year per 1000km pipeline.

These figures show an increase in the safety performance. It is considered that this is primarily due to an increasing integration of safety items during the phases of design, manufacturing, construction, maintenance and operation of pipelines.

The above data are based on failure incidents in pipelines outside of AGIs. The EGIG has also assessed the contribution to the above statistics of failure incidents within all elements of transmission pipeline systems including AGIs and concluded that the external safety for the

"public at large" will only be affected by the cross country high pressure pipelines. The contribution of all the other elements such as block valves, pressure reducing stations, pigging stations etc. was found to be negligible. Therefore, to demonstrate the safety of high pressure gas transmission system it is sufficient to concentrate just on the pipelines.

2.6 Liaison and Emergency Procedures

BGE's existing liaison and emergency procedures will cover the Mayo to Galway pipeline. Central to BGE's procedures is the preparation of an emergency plan. This will contain a minimum of the requirements of IS328. As part of a Quality Management System, BGE has developed a *Control of Emergencies – Works Instruction Manual*. This manual sets out the action to be implemented by the Transmission Operational Response Team in the management of a crisis on the BGE Transmission Grid and details Emergency Procedures for the overall transmission network. It sets out procedures to be followed for the receipt, location, classification and control of emergencies. Emergencies are classified in the following categories:

- Line break (Major Leakage) Bord Gáis National Transmission System (NTS).
- Line damaged (sustainable level of gas leakage) Bord Gáis NTS.
- Line damaged (no gas leakage).
- Loss of gas supplies.
- Major emergency as declared by Local/Regional Authorities.

The manual sets out response procedures for each of these classes of emergency. It also provides contact details and details of the organisational structure that will be in place during an emergency. Central to this structure is the supply of information to the public through the Communications Team.

Major emergencies as defined by the BGE emergency procedures are 'any emergency which will require the implementation of the Regional Major Accident/National Emergency Plan and will normally involve a number of seriously injured casualties'. Emergencies can be classified as major if there are a number of human casualties involved, if the evacuation of a populated area is necessary or if there is a possibility that the emergency will escalate. Regional Emergency Plans and BGE emergency procedures identify the role of BGE as part of the Regional/National Emergency Plan. This role is generally to deal with and make safe any gas involvement and to liaise with Gardaí and other authorities in the overall operation as appropriate. In this regard, the BGE emergency procedures are integrated with the Regional/National Emergency Plans.

2.7 Air Emissions During Maintenance and Unforeseen Events

Any emissions to atmosphere during maintenance of the pipeline would be of natural gas. None of the routine maintenance activities will cause the release of a significant quantity of gas. An unforeseen event, which caused a rupture of the pipeline, would result in a leak of gas. It is difficult to quantify such a release. However BGE will operate a computerised leak detection system, continuously monitoring the pipeline. The leak detection system is described in Section 7.3.1 of the EIS. If a leak is detected the system will shut the block valves which are provided to allow each length of pipeline to be isolated. This will minimise the quantity of gas which is released.

If the leaking gas ignited, the emission to atmosphere would comprise the products of combustion of the gas such as carbon dioxide, water and nitrous oxides.

2.8 Outlet Valve from the Corrib Terminal at Bellanaboy Bridge

The operators of the Corrib Terminal at Bellanaboy Bridge will be able to shut the outlet valve from the terminal to the pipeline in the event of an emergency arising. The emergency could be a leak in the pipeline or an unforeseen situation in the terminal. An EIS has been submitted to Mayo County Council with the planning application for the Corrib terminal. Reference should be made to the EIS for the terminal for details of the terminal operations.

3 Difficulties Encountered in the Study.

3.1 Additional Studies

The scope and methodology of the ecological surveys to be undertaken during the Environmental Impact Assessment was agreed in advance with Dúchas, and the Regional Fisheries Boards. All of the work which had been agreed with Dúchas and the Regional Fisheries Boards was completed in July to November 2000 and reported in the EIS.

Dúchas and the Regional Fisheries Boards were consulted on the findings of the surveys. It was agreed with Dúchas that a series of more detailed studies would be carried out, prior to the commencement of construction, in a small number of particularly sensitive areas which had been identified during the fieldwork. These surveys were to provide detailed baselines against which the impact of pipeline construction could be monitored. It had been intended to undertake these surveys in March /April / May 2001 and include them in the EIS. However due to the Foot and Mouth protocols the surveys had to be postponed. It is appropriate to undertake some flora surveys in July/ August 2001 but one mammal survey will have to be deferred until Autumn 2001.

If completed as originally planned, these more detailed surveys would have been included in the EIS. However the EIS has sufficient detail to more than fulfil the statutory requirements in the descriptions of the existing habitats and the assessment of the impacts of the pipeline project. It is not intended to the delay the EIS process until the surveys have been completed. The reports of the surveys will be submitted to Dúchas and copies will be made available to interested parties on request.

3.2 Fieldwork in Re-route Areas

Before the Foot and Mouth crises occurred, when a change to a section of pipeline route was proposed a desk study was undertaken by the ecologists, archaeologists and engineering geologists and the re-routed section was inspected on the ground. During the period in which the Foot and Mouth protocols were in place, the desk studies of proposed re-routes were undertaken and the need for a site visit assessed. In most cases the re-routes were quite minor and covered by existing fieldwork and it was concluded that a site visit was not essential. However there were some instances where a site visit was regarded as essential for the completion of the EIS.

In the initial phase of the Foot and Mouth protocols access to land was forbidden. This delayed completion of the EIS. The protocols were then relaxed to allow access to land under a strict regime of disinfectant use etc. BGE's policy was to assess land only where this was unavoidable. In compliance with the policy, only the areas, to which the EIS team considered that a site visit was essential, were inspected and the EIS was completed.

When all protocols have been relaxed, and there is no risk posed by moving from one land holding to another, the other re-route areas will be visited. With the continuing incidents of Foot and Mouth disease in the United Kingdom it may be several months before this may be possible. As visits to these areas are not regarded as essential, it is not intended to delay the EIS process until the visits take place.

4 Climate

4.1 General

The EIS addresses topics where there is the potential for a significance impact. The net effect of the project on the climate will be insignificant.

4.2 Construction Impact on Climate

Construction of the pipeline will require construction plant and vehicles, fuelled by hydrocarbons, the combustion of which will cause emissions of greenhouse gases. The quantity will not be significant in relation to the total amount of greenhouse gas emissions due to plant and vehicle traffic in Ireland. Commissioning of the pipeline will involve minor emissions of natural gas which is regarded as a greenhouse gas. The pipeline is routed through areas of forestry, and some trees will have to be felled. Trees cannot be replanted in the 14m width of the pipeline way-leave. Consequently the total amount of forestry will be marginally reduced. Forests are regarded as carbon sinks acting to reduce the amount of carbon dioxide, a greenhouse gas, in the atmosphere. The reduction in the total amount of forestry in Ireland, and the consequent reduction in the carbon sink capacity of Ireland, due to the construction of the pipeline will be insignificant. Thus the construction of the pipeline will have an insignificant direct negative impact on the climate.

4.3 Pipeline Operations Impact on Climate

Operation of the pipeline will have no significant direct impact on climate. Any release of natural gas during operations and maintenance will be negligible.

There will be indirect impacts on the climate due to operation of the pipeline. The pipeline will facilitate the construction of a gas distribution system in the areas of Counties Galway and Mayo, to the north of Galway City, which would not otherwise get it. The relative convenience and lower cost of natural gas will encourage households and businesses to switch from coal and oil for space heating. The climate change emissions from natural gas are far less than coal or oil and the switch will have a beneficial effect on the climate. However these areas of Mayo and Galway have a relatively low population density and any reduction in greenhouse gas emissions will not be significant in the context of Ireland as a whole.

There is the potential to develop a natural gas fired power station along the route of the Mayo to Galway gas pipeline. Generation of electricity from natural gas will result in reduced greenhouse gas emissions, if there is a resulting reduction in the use of coal or oil to generate electricity. However, with the construction of the second gas inter-connector to the UK gas transmission grid, there will be the possibility of siting a gas fired power station at many locations on the BGE grid. Siting one on the Mayo to Galway pipeline would just displace it from another location. A new gas-fired power station is not dependent on the Mayo - Galway gas pipeline being constructed.

Thus operation of the pipeline will have an insignificant beneficial effect on the climate.

5 Human Beings

Section 21.2.1 of the EIS lists the sections in which the impact of the project on Human Beings is addressed, as follows:

'Human Beings are addressed throughout the EIS, but not specifically in one section. The economic and social considerations are detailed in Section 19, Land Use issues are addressed in Section 5 and 12, and Health and Safety issues have been considered in Section 6 and 21. The effects of the development on human beings with regard to Landscape and Visual (Section 15), Traffic (Section 16), Noise (Section 17) and Environmental Emissions (Section 18) are also addressed.'

The impact on Human Beings can be summarised as follows: there will be localised impact on Human Beings along the pipeline route due to the activities undertaken during the course of the construction stage of the project. These will include disruption to traffic, loss of farming activities in the area fenced for construction, some noise and visual impact. On completion of the construction there will be no significant negative impacts and some positive economic impacts on Human Beings.

6 Waste

Chapter 18 of the EIS describes emissions from the construction and operation of the pipeline. Section 18.5 includes a table which describes the wastes arising from 15 construction activities, and the recommended disposal route. Sections 18.6.6 and 18.7.6 describe wastes arising from pipeline testing and commissioning and from pipeline operation.

7 Consultations

The EIS team consulted with a very wide range of organisation and individuals in the course of the preparation of the EIS. The EIS team is satisfied that the full statutory requirements have been complied with, in terms both of the requirement for consultation and the information to be contained in the EIS.

8 Alternatives Considered and Routing of the Pipeline

8.1 Existing Planning and Licences

The route was chosen to avoid existing houses and gardens. Searches were undertaken of the Mayo and Galway County Council Planning Registers to identify sites for which planning permission had been obtained. The pipeline route was chosen to avoid these sites.

8.2 Concerns of Nearby Residents

All landowners along the route were consulted and their requests for changes of the route were considered in detail. The ecologists, archaeologists, pipeline design engineers and engineering geologists commented on each proposed route change. The change was implement if it did not conflict with environmental, archaeological or engineering constraints.

9 Other Remarks

9.1 Impacts due to Pipeline Construction

Section 6 describes the construction methods of the pipeline. The likely environmental impacts, mitigation measures and residual impacts from pipeline construction are comprehensively described in the EIS, in Section 9.5 for terrestrial habitats, and Sections 10.2 and 10.3 for aquatic habitats. Section 18 details emissions during construction and mitigation measures. Section 22.3 provides a summary of construction impacts, mitigation measures and residual impacts.

There are a number of construction methods and types of equipment which can be used to construct a gas pipeline at special locations such as through peat or at river crossings. The contractor will specify the construction methods. This will allow the contractor to utilise methods and equipment in which he has particular expertise and experience. Prior to commencement of construction the contractor must submit detailed method statements for construction of the pipeline in the ecologically sensitive areas, which are identified on the pipeline tender drawings. The tender documents give the required scope of the method statement for each type of special location, to ensure that the key issues are addressed by the contractor. These methods statements will be agreed with Dúchas, or the Regional Fisheries Board in the case of the river crossings, prior to construction commencing. This procedure will ensure that the mitigation measures listed in the EIS are implemented.

An extract from the pipeline tender documents giving the scope of the method statements is appended to this document, in Appendix 1.

9.2 Rahasane Turlough

Indirect impacts on the Rahasane Turlough SAC from the construction of the crossing of the River Dooyertha include possible changes to the hydrogeology of the area if a non-open cut crossing method was chosen or if extensive rock blasting were required for trench excavation. Diversion of the River to allow a dry crossing might also have an indirect impact on the Turlough, which is downstream. These possible indirect impacts will be avoided by ensuring that the contractor's proposed method for constructing this crossing is will avoid these construction techniques.

9.3 Mitigation Measures to Prevent Impact on Watercourses

Mitigation measures to prevent impact on watercourses are addressed in Section 10.2.

9.4 Terrestrial Habitats - Residual Impacts

The extent and nature of the residual impacts are described under the habitat types Dry Habitats, Wetlands and Fauna, in the subsections following the heading '9.5.10 Residual Impacts'. The subsections are incorrectly numbered.

9.5 Pipe Storage/Construction Facilities

The pipe storage and construction facilities are dealt with in a general way in the EIS. Each compound will be the subject of an application for planning permission to Mayo or Galway County Council. Drainage drawings will be submitted with the planning applications.

9.6 Noise

In Section 17 of the EIS, Table 17.2 gives typical noise levels for various construction activities. These noise levels are based on typical plant being operated during the activity. Thus where the use of compressors are a normal part of the activity, the noise for the compressor is included.

Currently BGE carry out helicopter monitoring of their entire transmission pipelines on a fortnightly basis, and have done so for many years. No difficulties have been experienced with noise impact on livestock.

It is not intended to carry out noise monitoring unless there is a specific complaint from a landowner.

9.7 Inert Plugs

The term 'inert plug' is used in Section 9.5.6.2 in the context of the need to ensure that the pipeline trench, when backfilled with the pipe in place, does not act as a longitudinal drain, changing the ground water flow regime. In this context an inert plug is a barrier of chemically inert material which will act as a dam to prevent movement of water.

9.8 Programme for River Crossings

On the pipeline route there are 22 significant river crossings, none of which are major rivers and most are less than 10m in width. A few small streams, which are tributaries of the streams feeding Carrowmore Lake and are ecologically sensitive, will also be crossed. It is planned to construct the Mayo to Galway gas pipeline over two seasons, 2002 and 2003. Two seasons will give 10 months to construct these crossings. This should be sufficient time.

9.9 Archaeological and Cultural Heritage - Unknown Sites

Any unknown archaeological sites will be uncovered in the topsoil stripping operation. As stated in the EIS, topsoil stripping along the pipeline route will be monitored by a licensed archaeologist. If a site is uncovered, the contractor will be instructed to stop work and move to a different part of the pipeline. Dúchas will be consulted and it will determine if the site should be archaeologically resolved or remain untouched. If the site cannot be archaeologically resolved the pipeline will be rerouted.

9.10 Storage of Construction Materials

Construction materials and chemicals, which could cause environmental damage if accidentally released, will be stored in the most appropriate manner. Liquid chemicals will be treated in a similar manner to oils.

9.11 Preliminary Design Aspects

The natural gas will comprise methane and a low concentration of an odourant (Butyl Mercaptan 80% and di-Methyl Sulphide 20%) added to the gas. BGE's quality specification for the gas sets upper limits to impurities. Refer to Table 1.

Table 1

Material	Concentration
Hydrogen Sulphide	≤ 5.6 mg/m^3
Total Sulphur Content	≤ 50 mg/m^3
Oxygen Content	≤ 0.5%
Non Combustibles Content	
(1) Carbon Dioxide	≤ 4%
(2) Nitrogen	≤ 6%
Water Content	≤ 112 mg/m^3
Mist, Dust, Liquid	Technically free

The design life of the pipeline will be 40 years.

APPENDIX 1

Extract from Pipeline Construction Tender Documents

Method Statements for Pipeline Construction in Environmentally Sensitive Areas

6.0 METHOD STATEMENTS FOR PIPELINE CONSTRUCTION IN ENVIRONMENTALLY SENSITIVE AREAS

6.1 Introduction

The pipeline route passes through some areas of major ecologically importance. The pipeline would not have been routed through these areas if there had been a feasible alternative. These sensitive areas are highlighted in Section 7.0 of the Special Locations Report. A more complete description of these areas is also included in the Environmental Impact Study report.

The Contractor is required to prepare a method statement for construction in these sensitive locations. The scope of the method statement required for each type of area is outline below.

6.2 Scope of Method Statement for Areas of Peat

6.2.1 *Characteristics of Peat*

There are a number of key features of peat and bog areas underlain by peat, which the construction method statement must address.

- The top layer of peat, which contains the growing vegetation (hereinafter referred to as Layer 1), is very susceptible to mechanical damage, by shear and compaction, which can destroy the vegetation and adversely change the water storage and transmission properties. Layer 1 may generally be taken to be 0.5m or less in thickness, depending on the depth of living root penetration. The peat below the top layer (hereinafer referred to as Layer 2) has an even more delicate soil structure and is very liable to erosion by rain, surface water flow, and foot and vehicle traffic. The thickness of this layer varies considerably and may be up to 5m or more locally.

- Layer 2 peat can consist of up to 98% by weight of water. Handling tends to break down its physical structure and alter the chemical properties, and can turn the material into a soupy liquid.

- Storage of materials on the surface of Layer 1 (i.e. the natural bog surface) for any length of time, besides causing compaction of the underlying peat, can reduce or eliminate the light and oxygen reaching the vegetation cover and damage it or cause it to die.

- The movement of water across the bog surface and within Layer 1, and the storage and retention of water in the lower layers of peat are very important features in the development and preservation of the body of peat.

- Digging a trench in peat may cause drainage and lowering of the moisture content causing the peat to shrink and crack, and thus leading to chemical changes in the peat. This in turn can lead to non-bog plant species spreading onto the peat.

- In areas of sloping ground underlain by peat, digging a trench can alter the surface water run-off pattern. The result can be erosion where the run off increases and drying out of the peat where the run-off is reduced or removed.

6.2.2 *Scope of Method Statement for Working in Areas of Peat Bog*

Items to be included in the method statement for each length of peat bog include:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with Dúchas throughout the works

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- working area width required
- method of setting out the working width and the centreline of the pipeline
- type of fencing to be used and method of fence installation, including types of vehicles to be used
- number of months fencing is to be left in place
- Width and depth of each of the soil layers to be removed and temporarily stockpiled
- method of removing the top layer of peat, containing living vegetation (Layer 1)
- method of storing Layer 1 material, to include means for keeping it separate from the underlying surface and preventing cross-contamination by extraneous soil and vegetation; location for storage, and means for protection from drying out.
- location and method of storing Layer 2 peat material, to include means for keeping it separate from the underlying surface and preventing cross-contamination by extraneous soil and vegetation; height and width of the stockpile, protection from drying out.
- location and method of storing subsoil (i.e. mineral soil) encountered beneath the peat, to include means for keeping it separate from the underlying surface, height and width of stockpile.
- method of creating the vehicle access road along the working width, including road width, materials for construction and method of removal of the road when construction is completed
- method and types of plant to be used for transporting pipe along the spread, stringing the pipe, forming the trench and supporting the sides, lowering in the pipe and back-filling the trench
- types of vehicles to be used to transport personnel along the wayleave
- method of de-watering the trench, including treatment and disposal of the water
- method to prevent the trench acting as a short term or long term drainage path
- method to ensure existing watercourses continue to function when temporary access roads are constructed and the trench is open, and in the long term, following completion of works
- method for back-filling the trench, including ensuring that the materials are replaced in the reverse sequence to which they were excavated, i.e. the material from the deepest parts of the trench being back-filled first,

- method of reinstating the surface layer of peat, including ensuring that there is not a long term hollow along the pipeline trench as the back-fill materials settles
- method for removing excess material from the wayleave and disposal location
- method to prevent liquid or solid contaminants (diesel, hydraulic oil, cement, etc.) from coming in contact with the in situ or stockpiled peat, or with surface water or ground water
- construction management plan to minimise traffic on the working width
- traffic management plan and haul routes on the surrounding road network
- proposal for the supervision by peatland ecologists of all construction and restoration work in peat areas and monitoring following completion, including name and CV of staff to be employed.

6.3 Scope of Method Statement for River Crossings

6.3.1 Rivers Crossings General

For each river crossing the special locations report identifies the features which require protection because of the importance or sensitivity of the habitat. These features include the use of the river for fish spawning or fish feeding, the presence of fauna such as salmonid species, freshwater crayfish or lampreys, and the importance of the river for angling.

To minimise the impact of the pipeline construction it will be important to reinstate the river bed and banks as closely as possible to their original condition including restoring the bed and bank material, gradient and vegetation. It will also be very important to prevent contaminants entering the river.

Notwithstanding the above, careful consideration must also be given to the possibility of erosion of the river bed and banks at times of flood. Where an armour layer of stones is present on the river bed or vegetation serves to protect the banks from erosion, the same conditions (or an acceptable environmental equivalent in terms of erosion protection) must be included as part of the reinstatement.

6.3.2 Scope of method statement for river crossings

Items to be included in the method statement for each river crossing include:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with the relevant regional fisheries board and Dúchas on the work

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- identify the working area required on either side of the crossing
- method of forming a temporary bridge
- identification and method of protecting trees and hedgerows on the two river banks
- method of removing and storing the bank-side vegetation and topsoil, including the height of the stockpile.

- method of reinstating the surface layer of peat, including ensuring that there is not a long term hollow along the pipeline trench as the back-fill materials settles
- method for removing excess material from the wayleave and disposal location
- method to prevent liquid or solid contaminants (diesel, hydraulic oil, cement, etc.) from coming in contact with the in situ or stockpiled peat, or with surface water or ground water
- construction management plan to minimise traffic on the working width
- traffic management plan and haul routes on the surrounding road network
- proposal for the supervision by peatland ecologists of all construction and restoration work in peat areas and monitoring following completion, including name and CV of staff to be employed.

6.3 Scope of Method Statement for River Crossings

6.3.1 Rivers Crossings General

For each river crossing the special locations report identifies the features which require protection because of the importance or sensitivity of the habitat. These features include the use of the river for fish spawning or fish feeding, the presence of fauna such as salmonid species, freshwater crayfish or lampreys, and the importance of the river for angling.

To minimise the impact of the pipeline construction it will be important to reinstate the river bed and banks as closely as possible to their original condition including restoring the bed and bank material, gradient and vegetation. It will also be very important to prevent contaminants entering the river.

Notwithstanding the above, careful consideration must also be given to the possibility of erosion of the river bed and banks at times of flood. Where an armour layer of stones is present on the river bed or vegetation serves to protect the banks from erosion, the same conditions (or an acceptable environmental equivalent in terms of erosion protection) must be included as part of the reinstatement.

6.3 2 Scope of method statement for river crossings

Items to be included in the method statement for each river crossing include:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with the relevant regional fisheries board and Dúchas on the work

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- identify the working area required on either side of the crossing
- method of forming a temporary bridge
- identification and method of protecting trees and hedgerows on the two river banks
- method of removing and storing the bank-side vegetation and topsoil, including the height of the stockpile.

- location and method of recording, removing and storing the river bottom material include the height of the stockpile.
- location and method of storing subsoil
- method and types of plant to be used for stringing the pipe, forming the trench and supporting the sides, and lowering in the pipe
- method to minimise silt entering the river
- precautions to protect existing fish and other species if blasting is to be used
- method for back-filling the trench, including ensuring that the river bottom material is replaced so as to replicate the original river bottom material and lateral and longitudinal profile
- method of reinstating the river banks to the original profile and so as to prevent erosion
- method for ensuring long term stability of the river bed and banks
- method for removing excess material from the site and the disposal location
- method to prevent oil or other materials spilling or leaking from plant and contaminating the river, soil or ground water
- maintenance of access for anglers to and along the river bank
- traffic management plan and haul routes on the surrounding road network

6.4 Scope of Method Statement for Hazel scrub

6.4.1 *Hazel Scrub General*

The route passes through areas of hazel scrub which represent a semi-natural habitat of importance. To minimise impact it will be important to reduce the working width to a minimum, to fell the minimum quantity of trees, protect the remaining trees from damage and to reinstate the scrub after construction.

6.4.2 *Scope of Method Statement*

Items to be included in the method statement for where the route crosses hazel scrub include:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with the Dúchas on the work

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- Method for identifying hazel scrub
- Protection of topsoil to the extent of the edge of the tree canopy
- Method for identifying and marking trees for removal
- Reducing working width where possible
- Protection to be provided for branches of trees in working width
- Method for protection of thin soil cover from erosion
- Name, CV and outline of relevant experience of staff or sub-contractors to be employed to fell trees
- Method to reinstate the scrub including species to be used

- Aftercare method for scrub reinstatement – including provision for replacement of any dead stock for a minimum period of two years after planting and protection from rabbits and grazing animals

6.5 Scope of Method Statement for Areas of Karst, Turloughs, Vulnerable Hydrology

6.5.1 *General*

The route crosses extensive areas underlain by Pure Limestone Formation bedrock, which tends to be particularly prone to solution weathering, known as karst. Karst is associated with the occurrence of springs, underground water channels, caverns and swallow holes. Of these, swallow holes are the most widespread and obvious manifestation of karst. Sink holes may become enlarged to form turloughs, which are either shallow karst lake features or areas prone to seasonal flooding by high groundwater. Turlough may or may not be associated with surface stream drainage.

Due to their unique characteristics some of the karst areas on the route have ecologically important flora. These are identified in the Special Locations report. In addition many karst areas along the route are Regionally Important Aquifers, and where the overburden in thin, these can be very vulnerable to pollution. These are identified in the Special Locations report.

In karst areas it is essential to avoid unnecessary disturbance of the underlying soils or rock which might alter or interrupt the groundwater movement. It is also important to avoid changes to the surface and near surface drainage.

It is also imperative that usage and storage of potential contaminants be avoided or strictly controlled in karst/Regionally Important Aquifer areas because of the rapidity with which contaminant materials can enter the ground and be transported by groundwater.

6.5.2 *Scope of Method Statement for Working in Karst Areas*

Items to be included in the method statement for working in each length of karst:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with Dúchas throughout the works

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- working area width required
- method and types of plant to be used for forming any trench in rock
- if blasting is to be employed, name, CV and outline of relevant experience of staff or sub-contractors to carry out the blasting
- method of monitoring vibrations creating during trench excavation
- method of monitoring the trench and surrounding area to detect instability or settlement
- method of de-watering the trench, including disposal of the water
- method to prevent the trench acting as a short term or long term drainage path

- method to ensure existing watercourses continue to function when temporary access roads are constructed and the trench is open, and in the long term, following completion of works
- method for back-filling the trench, including ensuring that the materials are replaced in the reverse sequence to which they were excavated
- method of reinstating the topsoil, including ensuring that there is not a long term hollow along the pipeline trench if the back-fill materials settles
- method for removing excess material from the site and disposal location
- method to prevent oil or other materials spilling or leaking and contaminating the soil or rock, surface water or ground water
- method for full containment storage of oil, diesel, and other liquid/solid contaminants
- construction management plan
- traffic management plan and haul routes on the surrounding road network

v

7 December, 2001

Ms Orla Ryan,
Gas (Regulatory) Division,
Department of Public Enterprise,
44 Kildare St.,
Dublin 2.

Re: Mayo to Galway Natural Gas Pipeline – EIS,
Letter from the Department of the Arts, Heritage, Gaeltacht and the Isla.

Dear Ms Ryan,

We refer to your letter dated 6th November 2001, which enclosed a letter dated 6th November 2001 from Mr Neil McDonough of the Department of the Arts, Heritage, Gaeltacht and the Islands.
We would comment on the Nature Conservation issues raised in Mr. McDonough's letter as follows:

The heading numbers are those in Mr McDonough's letter.

1. Nature Conservation

1.1.1 General Concerns

1.11 A Consultant Ecologist will be employed by Bord Gais and a liaison mechanism agreed whereby the Consultant Ecologist will work closely with Dúchas throughout the construction phase. Method statements for the construction of the pipeline in sensitive areas will be submitted to, and agreed with, Duchas.

1.12 Bord Gáis will seek approval for the source and disposal of water for hydraulic testing. Dúchas, the Local Authorities and the Regional Fisheries Board will be consulted in this respect.

1.13 The removal of hedgerows will be kept to a minimum. The species composition of hedgerows will be recorded and the hedge-rows will be fully reinstated following completion of the pipeline. Unfortunately, it will not be possible to avoid hedgerow removal in the period March 1 to August 31 as this is the weather-window period during which this type of construction activity takes place. See attached Dúchas letter in respect of the proposed Gas Pipeline to the West, which is also due for construction during the summer of 2002.

1.14 Disposal of spoil will not take place in Natural Heritage Areas, Special Areas of Conservation or Special Protection Areas.

1.15 The mechanism for on-going liaison with Dúchas local staff should ensure that Bord Gáis is kept fully up to date with ongoing site designations on to the pipeline route. In areas of

woodland, every effort has been made to route the pipeline through existing gaps. The contractor will be required to minimise the construction width in areas of woodland and hazel scrub and to treat sensitively other areas of local importance.

1.16 Bord Gáis Éireann is very conscious of the need for extreme care during the construction of the pipeline across or in close proximity to SACs and NHAs, such as at Glencullin Upper and the Eskeragh fen. As indicated in section 1.11, method statements will be submitted to, and agreed with, Dúchas prior to construction.

1.17 A monitoring scheme for six such areas has been discussed with Dúchas Research Section and the initial field work, to set up the agreed monitoring baselines, has already been carried out. The report on the field work will be submitted to Dúchas shortly.

1.18 The construction of the pipeline across the listed rivers has been discussed with the Regional Fisheries Boards. Again, methods statements for the construction of the pipeline across the rivers and their main tributary streams will be submitted to, and agreed with, Dúchas. The contractor will be required to carry out works in the rivers in the time period suggested by the Fisheries Boards, typically May to August or September, in order to minimise any adverse impact.

Specific Concerns

1.21 The method statements for the construction of river and stream crossings, referred to above, will include a description of the proposals to control silt and to prevent contaminants entering the rivers or streams.

1.22 The requirement for approval of the construction method statements should minimise the impact of pipeline construction on the river habitats.

1.23 Prior to construction, a survey will be undertaken along the pipeline route to search for habitats and breeding places of Horseshoe bats. If any such places are found, Bord Gáis Éireann will consult Dúchas about appropriate mitigation measures.

1.24 A method statement for construction of the pipeline in the vicinity of Carrowkeel Turlough will be agreed with Dúchas.

1.25 See 1.16 above.
Bord Gáis Éireann assures Dúchas that the measures specified for the other rivers will also apply in the case of the Ballymunnelly River.

The archaeological matters, referred to in Mr. McDonough's letter, have bee addressed in the letter dated 5/12/01 from Ms. Rose Cleary, Bord Gais Project Archaeologist to Mr. Ed Bourke of Dúchas.

If you have any queries in relation to the above please contact me.

Yours sincerely,

Brendan Mangan.

Cc Mr. Neil McDonough, DAHGI
Mr. Ed Bourke, DAHGI

BORD GÁIS TRANSMISSION

BORD GÁIS
TRANSMISSION BUSINESS UNIT

MAYO-GALWAY GAS PIPE LINE

ENVIRONMENTAL IMPACT STATEMENT

Addendum Report

SEPTEMBER 2001

ARUP

Report Mayo to Galway Gas Pipeline EIS

Additional Information

4 September 2001

C689/10

Report Mayo to Galway Gas Pipeline EIS

Additional Information

Prepared By: Ria Lyden
Signed: Ria Lyden Date: 4 September 2001

Checked By: Ria Lyden
Signed: Ria Lyden Date: 4 September 2001

Passed By: Eoghan Lynch
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1	02/07/01	Draft Report	RL	RL	EJL
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ARUP
Consulting Engineers

Table of Contents

1 Introduction

The Mayo to Galway gas pipeline project comprises the construction of a circa 150km, 660mm (26inch) diameter, high pressure gas transmission pipeline from the Corrib Bellanaboy Bridge terminal in Co. Mayo to Craughwell, Co. Galway. Enterprise Energy Ireland Ltd., who initiated the project, signed a contract in late 2000 with Bord Gáis Éireann (BGE) whereby BGE would undertake detailed design and construction of the pipeline. Enterprise Energy Ireland Ltd. had commissioned an Environmental Impact Assessment and the preparation of an Environmental Impact Statement (EIS). When BGE took over the project Arup Consulting Engineers assumed responsibility for completion of the EIS.

The EIS was submitted to the Department of Public Enterprise in May 2001. The Department appointed consultants to review the EIS. This document is a response to queries raised by the consultants.

2 Safety and Risk Management

2.1 Non Routine Events

Chapter 22 of the EIS contains a summary of the environmental impacts of the Mayo to Galway gas pipeline. Section 22.4, 'Non Routine Events', describes the environmental risk assessment process and provides a risk assessment of potential hazards. For eight events the nature of the event, the control measures to prevent its occurrence and the likely environmental consequences are tabulated.

2.2 Risk Assessment

The event which would pose a risk to nearby residents from a gas pipeline or an associated above ground installation (AGI) is an escape of gas which subsequently ignites, causing a fire or explosion. For this to happen there must be both a gas leak and a source of ignition. A leak of gas on its own will not pose a risk as the gas, which is lighter than air, will dissipate into the atmosphere very quickly.

Natural gas is an asphyxiant. This can pose a risk to personnel and must be considered in the design of certain types of gas installation. A gas transmission pipeline does not pose a risk of asphyxiation to nearby residents. (Note: The Concise Oxford Dictionary defines asphyxia as 'defective aeration of blood through impaired respiration; suffocation'. An asphyxiant is a substance which causes this effect.)

2.3 Gas Leak Prevention

To prevent a gas leak, the pipeline has been designed and will be constructed, operated and maintained in accordance with IS328 Code of Practice for Design and Installation of Gas Transmission Pipelines, 1989. The pipe size, grade of steel, wall thickness and corrosion protection systems have been specified to ensure the pipeline is suitable for its purpose and to ensure that its integrity is maintained during its design life.

To be included in the pipeline construction tender list, contractors will have to pre-qualify, by demonstrating their competence and previous experience in pipeline construction. Construction method statements must be provided for each element of the work. The method statements will be scrutinised and only a contractor of proven competence will be appointed. The pipeline will be constructed to the highest standards. Material and workmanship will be inspected and tested and the entire pipeline will be pressure tested prior to commissioning.

BGE has developed a comprehensive set of procedures for pipeline operation and maintenance. These are contained in BGE's Field Operations and Maintenance - Works Instruction Manual. The manual specifies maintenance and inspection routines designed to ensure that the integrity of the pipeline is not compromised.

2.4 Prevention of an Ignition Source

Possible ignition sources are sparks arising from impact damage to the pipeline during operations or a spark from an electrical source at an AGI. The pipeline will be given a minimum of 1.2m of soil cover to prevent damage from routine events. The cover will be increased under the bed of rivers and streams. The most likely cause of damage to the pipeline would be excavations close to the pipeline. The pipeline wayleave will be monitored regularly to ensure that no unsupervised excavation occurs. If there is some requirement to excavate close to the pipeline, the method of working will be specified and BGE personnel will supervised the work. At the AGIs, any electrical equipment, which could come in contact with gas, will be specified to have the appropriate rating for use in a potentially explosive environment.

2.5 Gas Pipelines Safety Performance

BGE has operated high-pressure gas transmission pipelines in Ireland for more than 20 years. In this time no catastrophic failure has occurred which has resulted in the release of gas to the atmosphere. A report, published recently by European Gas Pipeline Incident Data Group (EGIG), presented data on pipeline safety performance of high pressure (>15bar) gas transmission pipelines. This group comprises nine operators in Denmark, Spain, France, Holland, Germany, Belgium, Italy, Switzerland and UK. The main results of analysing the safety performances of their pipeline systems are:

- Over the period 1970 to 1998 there has been no fatal accident involving inhabitants.
- The overall incident frequency with an unintentional gas release over the period 1970 to 1998 is 0.480 incidents per year per 1000km pipeline. However, the figure over the period 1993 to 1998 is significantly lower: 0.211 incidents per year per 1000km pipeline.
- External interference is the main cause of gas pipeline incidents involving gas leakage; an average of 0.239 incidents per year per 1000km pipeline for the period 1970 to 1998. However, an improvement in the incident frequency occurred over the period 1993 to 1998 where this statistic reduced to 0.087 incidents per year per 1000km pipeline.

These figures show an increase in the safety performance. It is considered that this is primarily due to an increasing integration of safety items during the phases of design, manufacturing, construction, maintenance and operation of pipelines.

The above data are based on failure incidents in pipelines outside of AGIs. The EGIG has also assessed the contribution to the above statistics of failure incidents within all elements of transmission pipeline systems including AGIs and concluded that the external safety for the "public at large" will only be affected by the cross country high pressure pipelines. The contribution of all the other elements such as block valves, pressure reducing stations, pigging stations etc. was found to be negligible. Therefore, to demonstrate the safety of high pressure gas transmission system it is sufficient to concentrate just on the pipelines.

2.6 Liaison and Emergency Procedures

BGE's existing liaison and emergency procedures will cover the Mayo to Galway pipeline. Central to BGE's procedures is the preparation of an emergency plan. This will contain a minimum of the requirements of IS328. As part of a Quality Management System, BGE has developed a *Control of Emergencies – Works Instruction Manual*. This manual sets out the action to be implemented by the Transmission Operational Response Team in the management of a crisis on the BGE Transmission Grid and details Emergency Procedures for the overall transmission network. It sets out procedures to be followed for the receipt, location, classification and control of emergencies. Emergencies are classified in the following categories:

- Line break (Major Leakage) Bord Gáis National Transmission System (NTS).
- Line damaged (sustainable level of gas leakage) Bord Gáis NTS.
- Line damaged (no gas leakage).
- Loss of gas supplies.
- Major emergency as declared by Local/Regional Authorities.

The manual sets out response procedures for each of these classes of emergency. It also provides contact details and details of the organisational structure that will be in place during an emergency. Central to this structure is the supply of information to the public through the Communications Team.

Major emergencies as defined by the BGE emergency procedures are 'any emergency which will require the implementation of the Regional Major Accident/National Emergency Plan and will normally involve a number of seriously injured casualties'. Emergencies can be classified as major if there are a number of human casualties involved, if the evacuation of a populated area is necessary or if there is a possibility that the emergency will escalate. Regional Emergency Plans and BGE emergency procedures identify the role of BGE as part of the Regional/National Emergency Plan. This role is generally to deal with and make safe any gas involvement and to liaise with Gardaí and other authorities in the overall operation as appropriate. In this regard, the BGE emergency procedures are integrated with the Regional/National Emergency Plans.

2.7 Air Emissions During Maintenance and Unforeseen Events

Any emissions to atmosphere during maintenance of the pipeline would be of natural gas. None of the routine maintenance activities will cause the release of a significant quantity of gas. An unforeseen event, which caused a rupture of the pipeline, would result in a leak of gas. It is difficult to quantify such a release. However BGE will operate a computerised leak detection system, continuously monitoring the pipeline. The leak detection system is described in Section 7.3.1 of the EIS. If a leak is detected the system will shut the block valves which are provided to allow each length of pipeline to be isolated. This will minimise the quantity of gas which is released.

If the leaking gas ignited, the emission to atmosphere would comprise the products of combustion of the gas such as carbon dioxide, water and nitrous oxides.

2.8 Outlet Valve from the Corrib Terminal at Bellanaboy Bridge

The operators of the Corrib Terminal at Bellanaboy Bridge will be able to shut the outlet valve from the terminal to the pipeline in the event of an emergency arising. The emergency could be a leak in the pipeline or an unforeseen situation in the terminal. An EIS has been submitted to Mayo County Council with the planning application for the Corrib terminal. Reference should be made to the EIS for the terminal for details of the terminal operations.

3 Difficulties Encountered in the Study.

3.1 Additional Studies

The scope and methodology of the ecological surveys to be undertaken during the Environmental Impact Assessment was agreed in advance with Dúchas and the Regional Fisheries Boards. All of this work was completed, and all of the areas, which required field inspections, were inspected. Completion of the EIS was delayed to allow this fieldwork to be undertaken when the Foot and Mouth Disease restrictions had been relaxed to allow visits to farmland. The field studies, which were undertaken, provided sufficient information to describe the receiving environment and assess the impacts of the pipeline, as required by Article 25, Second Schedule, of the Environmental Impact Assessment Regulations 1989 and subsequent amendments.

Following completion of the field studies, Dúchas was informed of the findings. Dúchas requested that some more detailed studies be undertaken in specific areas, prior to the commencement of construction. Dúchas did not require these additional studies to form part of the EIS.

Seven of the additional studies relate to vegetation. The purpose of six of these vegetation studies is to form a detailed baseline, in specific areas, in order to record the changes and monitor the recovery of the vegetation during and following construction of the pipeline. The baselines will also be used to monitor the impact of different construction techniques in bog areas.

The seventh vegetation study requires the recording of the dominant species composition in well developed hedgerows, in order to facilitate the reinstatement of the hedgerows on completion of construction.

Additional field surveys of badgers, otters and bats were also requested by Dúchas.

The badger survey will be undertaken to identify badger activity close to the pipeline route. If a badger sett is identified which will be affected by the pipeline construction, and it is not practicable to adjust the route of the pipeline to avoid the sett, Dúchas will be informed. The appropriate mitigation measures, which may include relocating the badgers, will be taken by suitably qualified persons in consultation with Dúchas.

Otter surveys will be undertaken at the river crossing points. If otter activity is identified, precautions will be taken to ensure that otter movement along the river banks is not hindered temporarily by construction of the river crossing.

In the limestone areas to the west of Caltragh and Knockdoe a survey will be undertaken to identify bat roosts close to the pipeline. This is a precautionary measure, requested by Dúchas. For geotechnical reasons the pipeline route has been chosen specifically to avoid areas of limestone cave formation, which might be suitable as bat roosts. The geophysical surveys, which were undertaken as part of the geotechnical site investigation, would have identified any unknown areas of this type. Nevertheless, the survey will be undertaken and if bat roosts are identified, Dúchas will be informed and the appropriate mitigation measures, which may involve adjusting the route of the pipeline, will be taken.

Dúchas requested additional hydrogeological studies in the sensitive wetland areas. The objective of the hydrogeological studies is to form a baseline against which to monitor the groundwater levels and groundwater movement during and after construction of the pipeline. The baselines will also facilitate monitoring of the impact of different construction techniques in bog areas.

The field surveys undertaken and reported in the EIS were very comprehensive. Given the scope of the additional surveys, detailed above, it is extremely unlikely that these surveys will uncover any matters which will have serious consequences for the potential environmental impact and eventual mitigation measures of the pipeline.

If completed as originally planned, these more detailed surveys would have been included in the EIS. However the EIS has sufficient detail to more than fulfil the statutory requirements in the descriptions of the existing habitats and the assessment of the impacts of the pipeline project. It is not intended to the delay the EIS process until the surveys have been completed.

The reports of the surveys will be submitted to Dúchas and copies will be made available to interested parties on request.

3.2 Fieldwork in Re-route Areas

Before the Foot and Mouth crises occurred, when a change to a section of pipeline route was proposed a desk study was undertaken by the ecologists, archaeologists and engineering geologists and the re-routed section was inspected on the ground. During the period in which the Foot and Mouth protocols were in place, the desk studies of proposed re-routes were undertaken and the need for a site visit assessed. In most cases the re-routes were quite minor and covered by existing fieldwork and it was concluded that a site visit was not essential. However there were some instances where a site visit was regarded as essential for the completion of the EIS.

In the initial phase of the Foot and Mouth protocols access to land was forbidden. This delayed completion of the EIS. The protocols were then relaxed to allow access to land under a strict regime of disinfectant use etc. BGE's policy was to enter onto land only where this was unavoidable. In compliance with the policy, only the areas, to which the EIS team considered that a site visit was essential, were inspected and the EIS was completed.

When all protocols have been relaxed, and there is no risk posed by moving from one land holding to another, the other re-route areas will be visited. With the continuing incidents of Foot and Mouth disease in the United Kingdom it may be several months before this may be possible. As visits to these areas are not regarded as essential, it is not intended to delay the EIS process until the visits take place.

4 Climate

4.1 General

The EIS addresses topics where there is the potential for a significance impact. The net effect of the project on the climate will be insignificant.

4.2 Construction Impact on Climate

Construction of the pipeline will require construction plant and vehicles, fuelled by hydrocarbons, the combustion of which will cause emissions of greenhouse gases. The quantity will not be significant in relation to the total amount of greenhouse gas emissions due to plant and vehicle traffic in Ireland. Commissioning of the pipeline will involve minor emissions of natural gas which is regarded as a greenhouse gas. The pipeline is routed through areas of forestry, and some trees will have to be felled. Trees cannot be replanted in the 14m width of the pipeline way-leave. Consequently the total amount of forestry will be marginally reduced. Forests are regarded as carbon sinks acting to reduce the amount of carbon dioxide, a greenhouse gas, in the atmosphere. The reduction in the total amount of forestry in Ireland, and the consequent reduction in the carbon sink capacity of Ireland, due to the construction of the pipeline will be insignificant. Thus the construction of the pipeline will have an insignificant direct negative impact on the climate.

4.3 Pipeline Operations Impact on Climate

Operation of the pipeline will have no significant direct impact on climate. Any release of natural gas during operations and maintenance will be negligible.

There will be indirect impacts on the climate due to operation of the pipeline. The pipeline will facilitate the construction of a gas distribution system in the areas of Counties Galway and Mayo, to the north of Galway City, which would not otherwise get it. The relative convenience and lower cost of natural gas will encourage households and businesses to switch from coal and oil for space heating. The climate change emissions from natural gas are far less than coal or oil and the switch will have a beneficial effect on the climate. However these areas of Mayo and Galway have a relatively low population density and any reduction in greenhouse gas emissions will not be significant in the context of Ireland as a whole.

There is the potential to develop a natural gas fired power station along the route of the Mayo to Galway gas pipeline. Generation of electricity from natural gas will result in reduced greenhouse gas emissions, if there is a resulting reduction in the use of coal or oil to generate electricity. However, with the construction of the second gas inter-connector to the UK gas transmission grid, there will be the possibility of siting a gas fired power station at many locations on the BGE grid. Siting one on the Mayo to Galway pipeline would just displace it from another location. A new gas-fired power station is not dependent on the Mayo - Galway gas pipeline being constructed.

Thus operation of the pipeline will have an insignificant beneficial effect on the climate.

5 Human Beings

Section 21.2.1 of the EIS lists the sections in which the impact of the project on Human Beings is addressed, as follows:

'Human Beings are addressed throughout the EIS, but not specifically in one section. The economic and social considerations are detailed in Section 19, Land Use issues are addressed in Section 5 and 12, and Health and Safety issues have been considered in Section 6 and 21. The effects of the development on human beings with regard to Landscape and Visual (Section 15), Traffic (Section 16), Noise (Section 17) and Environmental Emissions (Section 18) are also addressed.'

The impact on Human Beings can be summarised as follows: there will be localised impact on Human Beings along the pipeline route due to the activities undertaken during the course of the construction stage of the project. These will include disruption to traffic, loss of farming activities in the area fenced for construction, some noise and visual impact. On completion of the construction there will be no significant negative impacts and some positive economic impacts on Human Beings.

6 Waste

Chapter 18 of the EIS describes emissions from the construction and operation of the pipeline. Section 18.5 includes a table which describes the wastes arising from 15 construction activities, and the recommended disposal route. Sections 18.6.6 and 18.7.6 describe wastes arising from pipeline testing and commissioning and from pipeline operations.

The management of wastes generated during the construction of the pipeline will be the responsibility of the contractors. Management of wastes will be controlled under the Waste Management Act 1996 and the subsequent amendment. Each contractor will be required to prepare a waste management plan. The plans will have to adhere to the waste hierarchy, giving priority to waste prevention and minimisation, followed by reuse, recycling and recovery, with disposal as the least desirable option.

The EIS team is not aware of any studies which have been undertaken to record the waste generated by the construction of a natural gas pipeline in Ireland. The amount of waste, which will be generated by the construction of a natural gas pipeline, is difficult to quantify as it is dependent on a number of variables.

For example:

- The duration of the construction phase, and consequently the quantities of incidental waste such as office and canteen waste and sewage and also of stone for temporary roads, will be very dependent on weather conditions in the spring and summer of 2002 and 2003. With a long spell of dry weather, construction might proceed much more rapidly than currently expected and the quantities of these wastes would be reduced.

- The quantities of waste will also be very dependent on the construction methods and the effectiveness of waste minimisation programmes of the pipeline contractors.

- The quantity of crushed stone waste from temporary roads will be very dependent on whether the contractor opts to construct stone roads in soft ground areas or to used bog mats, which can be reused many times.

- Quantities of water pumped from excavations will be very dependent of weather conditions, amount of rainfall and height of the water table in the construction seasons.

- The construction methods used in peat areas will determine the quantity of water, if any, to be pumped from trench excavation in peat.

- Some contractors may opt to crush rock and boulders on site and reuse the material in the excavations. This would greatly reduce the volume of surplus spoil and rock to be removed from site.

- Some contractors may opt for trenchless crossings of some of the main roads, other contractors may do all road crossings as open cut.

- The quantity of office waste would be reduced if the contractor operates an effective paper and cardboard waste minimisation and recycling system.

In order to give an indication of the waste quantities to be expected, a preliminary estimate has been made. The estimate is based on pipeline construction experience and a two-season construction schedule. Refer to table 6.1 below.

Table 6.1: Potential Wastes Generated by the Construction of the Pipeline.

Activity	Waste Generation	Disposal Recommendation	Quantity
Pipeline Construction Base			
Site preparation	Likely to be negligible	-	
Operation	Office rubbish, paper, packaging, canteen refuse etc.	Recycle or send to licensed waste disposal site.	50 tonnes
	Rubbish from yard and site.	Collect in covered skips or tipper trucks and send to a licensed waste disposal site.	50 tonnes
	Scrap metal.	Sell as scrap.	
	Sewage.	Cesspit emptied regularly.	25 tonnes 3500m^3
Site reinstatement	Workshop waste, e.g. paints, oil etc.	Collect in covered skips or tipper trucks and send to a licensed waste disposal site.	10 tonnes
	Concrete foundations etc.	Send to a licensed waste disposal site.	100 tonnes
Pipeline Construction			
Working width preparation	Hedges, timber, brash, fence posts, wire etc.	In accordance with landowners requirements.	200 tonnes (note 1)
Pipe-stringing and bending	Pipe-bands, off cuts and end caps.	Collect in covered skips or tipper trucks and send for recycling or to licensed waste disposal site.	500 tonnes
Welding, testing and coating	Spent welding rods, grinding wheels, visors, and shot-blast.	Collect in covered skips or tipper trucks and send to licensed waste disposal site.	20 tonnes
Trenching, lowering and laying	Pumping discharge.	Pump into adjacent ditch using suitable filtration/ settlement techniques.	100m^3 (note 1)
Backfilling and grading	Surplus spoil and rock.	Subject to landowner/ occupier's agreement, take to licensed waste disposal site.	1000 tonnes (note 1)
Reinstatement	Temporary stone roads. Temporary fencing, gates, troughs etc.	Subject to agreement with the relevant County Council. Re-use elsewhere within land holding.	5,000 to 30,000 tonnes (note 1)
Construction through areas of peat	Pumping discharge.	Pump into adjacent ditch / field using suitable filtration/ settlement techniques.	100m^3 (note 1)

Activity	Waste Generation	Disposal Recommendation	Quantity
Microtunnelling	Slurry/Spoil.	Passed through de-sander, slurry recycled and ultimately disposed of using road truck tankers to licensed waste disposal site.	0 to 20 tonnes (note 1)
Auger-boring and pipe jacking	Spoil and rock cuttings.	Disposed of using road truck tankers to licensed waste disposal site.	0 to 20 tonnes (note 1)
Drill and Grout	Spoil grout and flush water.	Spoil disposal to licensed waste disposal site. Water used for flushing disposed of in accordance with the relevant County Council requirements either by filtration to land or off-site, if contaminated.	10 tonnes (note 1) $50m^3$ (note 1)
Mess huts, misc., etc.	Canteen refuse, safety equipment etc.	Collect in covered skips and send to licensed waste disposal site.	100 tonnes (note 1)
Mobile site toilets	Sewage.	Disposal by appointed waste management contractor.	$1000m^3$

Note 1: depends on construction method.

7 Consultations

The EIS team consulted with a very wide range of organisation and individuals in the course of the Environmental Assessment. The organisations and individuals consulted are listed in Section 2.4 of the EIS. The EIS team is satisfied that the full statutory requirements have been complied with, in terms both of the requirement for consultation and the information to be contained in the EIS.

8 Alternatives Considered and Routing of the Pipeline

8.1 Existing Planning and Licences

The route was chosen to avoid existing houses and gardens. Searches were undertaken of the Mayo and Galway County Council Planning Registers to identify sites for which planning permission had been obtained. The pipeline route was chosen to avoid these sites.

8.2 Concerns of Nearby Residents

All landowners along the route were consulted and their requests for changes of the route were considered in detail. The ecologists, archaeologists, pipeline design engineers and engineering geologists commented on each proposed route change. The change was implement if it did not conflict with environmental, archaeological or engineering constraints.

9 Other Remarks

9.1 Impacts due to Pipeline Construction

Section 6 describes the construction methods of the pipeline. The likely environmental impacts, mitigation measures and residual impacts from pipeline construction are comprehensively described in the EIS, in Section 9.5 for terrestrial habitats, and Sections 10.2 and 10.3 for aquatic habitats. Section 18 details emissions during construction and mitigation measures. Section 22.3 provides a summary of construction impacts, mitigation measures and residual impacts.

There are a number of construction methods and types of equipment which can be used to construct a gas pipeline at special locations such as through peat or at river crossings. The contractor will specify the construction methods. This will allow the contractor to utilise methods and equipment in which he has particular expertise and experience. Prior to commencement of construction the contractor must submit detailed method statements for construction of the pipeline in the ecologically sensitive areas, which are identified on the pipeline tender drawings. The tender documents give the required scope of the method statement for each type of special location, to ensure that the key issues are addressed by the contractor. These methods statements will be agreed with Dúchas, or the Regional Fisheries Board in the case of the river crossings, prior to construction commencing. This procedure will ensure that the mitigation measures listed in the EIS are implemented.

An extract from the pipeline tender documents giving the scope of the method statements is appended to this document, in Appendix 1.

9.2 Rahasane Turlough

Indirect impacts on the Rahasane Turlough SAC from the construction of the crossing of the River Dooyertha include possible changes to the hydrogeology of the area if a non-open cut crossing method was chosen or if extensive rock blasting were required for trench excavation. Diversion of the River to allow a dry crossing might also have an indirect impact on the Turlough, which is downstream. These possible indirect impacts will be avoided by ensuring that the contractor's proposed method for constructing this crossing is will avoid these construction techniques.

9.3 Mitigation Measures to Prevent Impact on Watercourses

Mitigation measures to prevent impact on watercourses are addressed in Section 10.2.

9.4 Terrestrial Habitats - Residual Impacts

The extent and nature of the residual impacts are described under the habitat types Dry Habitats, Wetlands and Fauna, in the subsections following the heading '9.5.10 Residual Impacts'. The subsections are incorrectly numbered.

9.5 Pipe Storage/Construction Facilities

The pipe storage and construction facilities are dealt with in a general way in the EIS. Each compound will be the subject of an application for planning permission to Mayo or Galway County Council. Drainage drawings will be submitted with the planning applications.

9.6 Noise

In Section 17 of the EIS, Table 17.2 gives typical noise levels for various construction activities. These noise levels are based on typical plant being operated during the activity. Thus where the use of compressors are a normal part of the activity, the noise for the compressor is included.

Currently BGE carry out helicopter monitoring of their entire transmission pipelines on a fortnightly basis, and have done so for many years. No difficulties have been experienced with noise impact on livestock.

It is not intended to carry out noise monitoring unless there is a specific complaint from a landowner.

9.7 Inert Plugs

The term 'inert plug' is used in Section 9.5.6.2 in the context of the need to ensure that the pipeline trench, when backfilled with the pipe in place, does not act as a longitudinal drain, changing the ground water flow regime. In this context an inert plug is a barrier of chemically inert material which will act as a dam to prevent movement of water.

9.8 Programme for River Crossings

On the pipeline route there are 22 significant river crossings, none of which are major rivers and most are less than 10m in width. A few small streams, which are tributaries of the streams feeding Carrowmore Lake and are ecologically sensitive, will also be crossed. It is planned to construct the Mayo to Galway gas pipeline over two seasons, 2002 and 2003. Two seasons will give 10 months to construct these crossings. This should be sufficient time.

9.9 Archaeological and Cultural Heritage - Unknown Sites

Any unknown archaeological sites will be uncovered in the topsoil stripping operation. As stated in the EIS, topsoil stripping along the pipeline route will be monitored by a licensed archaeologist. If a site is uncovered, the contractor will be instructed to stop work and move to a different part of the pipeline. Dúchas will be consulted and it will determine if the site should be archaeologically resolved or remain untouched. If the site cannot be archaeologically resolved the pipeline will be rerouted.

9.10 Storage of Construction Materials

Construction materials and chemicals, which could cause environmental damage if accidentally released, will be stored in the most appropriate manner. Liquid chemicals will be treated in a similar manner to oils.

9.11 Preliminary Design Aspects

The natural gas will comprise methane and a low concentration of an odourant (Butyl Mercaptan 80% and di-Methyl Sulphide 20%) added to the gas. BGE's quality specification for the gas sets upper limits to impurities. Refer to Table 1.

Table 1

Material	Concentration
Hydrogen Sulphide	5.6 mg/m^3
Total Sulphur Content	50 mg/m^3
Oxygen Content	0.5%
Non Combustibles Content	
(1) Carbon Dioxide	4%
(2) Nitrogen	6%
Water Content	112 mg/m^3
Mist, Dust, Liquid	Technically free

The design life of the pipeline will be 40 years.

APPENDIX 1

Extract from Pipeline Construction Tender Documents

Method Statements for Pipeline Construction in Environmentally Sensitive Areas

6.0 METHOD STATEMENTS FOR PIPELINE CONSTRUCTION IN ENVIRONMENTALLY SENSITIVE AREAS

6.1 Introduction

The pipeline route passes through some areas of major ecologically importance. The pipeline would not have been routed through these areas if there had been a feasible alternative. These sensitive areas are highlighted in Section 7.0 of the Special Locations Report. A more complete description of these areas is also included in the Environmental Impact Study report.

The Contractor is required to prepare a method statement for construction in these sensitive locations. The scope of the method statement required for each type of area is outline below.

6.2 Scope of Method Statement for Areas of Peat

6.2.1 *Characteristics of Peat*

There are a number of key features of peat and bog areas underlain by peat, which the construction method statement must address.

- The top layer of peat, which contains the growing vegetation (hereinafter referred to as Layer 1), is very susceptible to mechanical damage, by shear and compaction, which can destroy the vegetation and adversely change the water storage and transmission properties. Layer 1 may generally be taken to be 0.5m or less in thickness, depending on the depth of living root penetration. The peat below the top layer (hereinafer referred to as Layer 2) has an even more delicate soil structure and is very liable to erosion by rain, surface water flow, and foot and vehicle traffic. The thickness of this layer varies considerably and may be up to 5m or more locally.

- Layer 2 peat can consist of up to 98% by weight of water. Handling tends to break down its physical structure and alter the chemical properties, and can turn the material into a soupy liquid.

- Storage of materials on the surface of Layer 1 (i.e. the natural bog surface) for any length of time, besides causing compaction of the underlying peat, can reduce or eliminate the light and oxygen reaching the vegetation cover and damage it or cause it to die.

- The movement of water across the bog surface and within Layer 1, and the storage and retention of water in the lower layers of peat are very important features in the development and preservation of the body of peat.

- Digging a trench in peat may cause drainage and lowering of the moisture content causing the peat to shrink and crack, and thus leading to chemical changes in the peat. This in turn can lead to non-bog plant species spreading onto the peat.

- In areas of sloping ground underlain by peat, digging a trench can alter the surface water run-off pattern. The result can be erosion where the run off increases and drying out of the peat where the run-off is reduced or removed.

6.2.2 *Scope of Method Statement for Working in Areas of Peat Bog*

Items to be included in the method statement for each length of peat bog include:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with Dúchas throughout the works

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- working area width required
- method of setting out the working width and the centreline of the pipeline
- type of fencing to be used and method of fence installation, including types of vehicles to be used
- number of months fencing is to be left in place
- Width and depth of each of the soil layers to be removed and temporarily stockpiled
- method of removing the top layer of peat, containing living vegetation (Layer 1)
- method of storing Layer 1 material, to include means for keeping it separate from the underlying surface and preventing cross-contamination by extraneous soil and vegetation; location for storage, and means for protection from drying out.
- location and method of storing Layer 2 peat material, to include means for keeping it separate from the underlying surface and preventing cross-contamination by extraneous soil and vegetation; height and width of the stockpile, protection from drying out.
- location and method of storing subsoil (i.e. mineral soil) encountered beneath the peat, to include means for keeping it separate from the underlying surface, height and width of stockpile.
- method of creating the vehicle access road along the working width, including road width, materials for construction and method of removal of the road when construction is completed
- method and types of plant to be used for transporting pipe along the spread, stringing the pipe, forming the trench and supporting the sides, lowering in the pipe and back-filling the trench
- types of vehicles to be used to transport personnel along the wayleave
- method of de-watering the trench, including treatment and disposal of the water
- method to prevent the trench acting as a short term or long term drainage path
- method to ensure existing watercourses continue to function when temporary access roads are constructed and the trench is open, and in the long term, following completion of works
- method for back-filling the trench, including ensuring that the materials are replaced in the reverse sequence to which they were excavated, i.e. the material from the deepest parts of the trench being back-filled first,

- method of reinstating the surface layer of peat, including ensuring that there is not a long term hollow along the pipeline trench as the back-fill materials settles
- method for removing excess material from the wayleave and disposal location
- method to prevent liquid or solid contaminants (diesel, hydraulic oil, cement, etc.) from coming in contact with the in situ or stockpiled peat, or with surface water or ground water
- construction management plan to minimise traffic on the working width
- traffic management plan and haul routes on the surrounding road network
- proposal for the supervision by peatland ecologists of all construction and restoration work in peat areas and monitoring following completion, including name and CV of staff to be employed.

6.3 Scope of Method Statement for River Crossings

6.3.1 Rivers Crossings General

For each river crossing the special locations report identifies the features which require protection because of the importance or sensitivity of the habitat. These features include the use of the river for fish spawning or fish feeding, the presence of fauna such as salmonid species, freshwater crayfish or lampreys, and the importance of the river for angling.

To minimise the impact of the pipeline construction it will be important to reinstate the river bed and banks as closely as possible to their original condition including restoring the bed and bank material, gradient and vegetation. It will also be very important to prevent contaminants entering the river.

Notwithstanding the above, careful consideration must also be given to the possibility of erosion of the river bed and banks at times of flood. Where an armour layer of stones is present on the river bed or vegetation serves to protect the banks from erosion, the same conditions (or an acceptable environmental equivalent in terms of erosion protection) must be included as part of the reinstatement.

6.3 2 Scope of method statement for river crossings

Items to be included in the method statement for each river crossing include:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with the relevant regional fisheries board and Dúchas on the work

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- identify the working area required on either side of the crossing
- method of forming a temporary bridge
- identification and method of protecting trees and hedgerows on the two river banks
- method of removing and storing the bank-side vegetation and topsoil, including the height of the stockpile.

- location and method of recording, removing and storing the river bottom material include the height of the stockpile.
- location and method of storing subsoil
- method and types of plant to be used for stringing the pipe, forming the trench and supporting the sides, and lowering in the pipe
- method to minimise silt entering the river
- precautions to protect existing fish and other species if blasting is to be used
- method for back-filling the trench, including ensuring that the river bottom material is replaced so as to replicate the original river bottom material and lateral and longitudinal profile
- method of reinstating the river banks to the original profile and so as to prevent erosion
- method for ensuring long term stability of the river bed and banks
- method for removing excess material from the site and the disposal location
- method to prevent oil or other materials spilling or leaking from plant and contaminating the river, soil or ground water
- maintenance of access for anglers to and along the river bank
- traffic management plan and haul routes on the surrounding road network

6.4 Scope of Method Statement for Hazel scrub

6.4.1 *Hazel Scrub General*

The route passes through areas of hazel scrub which represent a semi-natural habitat of importance. To minimise impact it will be important to reduce the working width to a minimum, to fell the minimum quantity of trees, protect the remaining trees from damage and to reinstate the scrub after construction.

6.4.2 *Scope of Method Statement*

Items to be included in the method statement for where the route crosses hazel scrub include:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with the Dúchas on the work

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- Method for identifying hazel scrub
- Protection of topsoil to the extent of the edge of the tree canopy
- Method for identifying and marking trees for removal
- Reducing working width where possible
- Protection to be provided for branches of trees in working width
- Method for protection of thin soil cover from erosion
- Name, CV and outline of relevant experience of staff or sub-contractors to be employed to fell trees
- Method to reinstate the scrub including species to be used

- Aftercare method for scrub reinstatement – including provision for replacement of any dead stock for a minimum period of two years after planting and protection from rabbits and grazing animals

6.5 Scope of Method Statement for Areas of Karst, Turloughs, Vulnerable Hydrology

6.5.1 *General*

The route crosses extensive areas underlain by Pure Limestone Formation bedrock, which tends to be particularly prone to solution weathering, known as karst. Karst is associated with the occurrence of springs, underground water channels, caverns and swallow holes. Of these, swallow holes are the most widespread and obvious manifestation of karst. Sink holes may become enlarged to form turloughs, which are either shallow karst lake features or areas prone to seasonal flooding by high groundwater. Turlough may or may not be associated with surface stream drainage.

Due to their unique characteristics some of the karst areas on the route have ecologically important flora. These are identified in the Special Locations report. In addition many karst areas along the route are Regionally Important Aquifers, and where the overburden in thin, these can be very vulnerable to pollution. These are identified in the Special Locations report.

In karst areas it is essential to avoid unnecessary disturbance of the underlying soils or rock which might alter or interrupt the groundwater movement. It is also important to avoid changes to the surface and near surface drainage.

It is also imperative that usage and storage of potential contaminants be avoided or strictly controlled in karst/Regionally Important Aquifer areas because of the rapidity with which contaminant materials can enter the ground and be transported by groundwater.

6.5.2 *Scope of Method Statement for Working in Karst Areas*

Items to be included in the method statement for working in each length of karst:

1. Construction schedule including start date, finish date, allowance for inclement weather

2. Provision for liaison with Dúchas throughout the works

3. Type of inclement weather which, if it occurs, will cause work to be halted

4. Construction method and sequence including:

- working area width required
- method and types of plant to be used for forming any trench in rock
- if blasting is to be employed, name, CV and outline of relevant experience of staff or sub-contractors to carry out the blasting
- method of monitoring vibrations creating during trench excavation
- method of monitoring the trench and surrounding area to detect instability or settlement
- method of de-watering the trench, including disposal of the water
- method to prevent the trench acting as a short term or long term drainage path

- method to ensure existing watercourses continue to function when temporary access roads are constructed and the trench is open, and in the long term, following completion of works
- method for back-filling the trench, including ensuring that the materials are replaced in the reverse sequence to which they were excavated
- method of reinstating the topsoil, including ensuring that there is not a long term hollow along the pipeline trench if the back-fill materials settles
- method for removing excess material from the site and disposal location
- method to prevent oil or other materials spilling or leaking and contaminating the soil or rock, surface water or ground water
- method for full containment storage of oil, diesel, and other liquid/solid contaminants
- construction management plan
- traffic management plan and haul routes on the surrounding road network

v

BORD GÁIS ÉIREANN

BORD GÁIS NETWORKS

P.O. Box 51
Gasworks Road
Cork
Ireland

T +353 21 453 4000
F +353 21 453 4387
W www.bordgais.ie

13th July, 2006

Ms. Keelin O'Brien.
Commission for Energy Regulation.
Plaza House,
Tallaght,
Dublin 24.

Dear Ms. O'Brien,

Re: Gas Act, 1976, Section 8(7)
Consent for the Natural Gas Pipeline from Mayo to Galway

We enclose the Consent to Construct, under Section 8(7) of the 1976 Gas Act, pertaining to the Mayo-Galway Pipeline.

In accordance with the last paragraph of the Consent, you will note that we do not have consent to operate this pipeline.

I would be grateful if you would advise of your requirements in relation to consent to operate at your earliest convenience.

Yours sincerely,

John Barry
Head of Networks Construction

cc: *Mr. Tom Considine, BGE*

CER

Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

Liam O'Riordan
Bord Gáis Éireann Head Office
P.O. Box 51
Gasworks Road
Cork

24th August 2007

Our Ref: 34493

Re: Application to the Commission for Energy Regulation pursuant to the provisions of Section 39A of the Gas Act 1976 (as amended) for Consent to Operate the Natural Gas Transmission Pipeline known as the Mayo-Galway Pipeline.

Dear Mr. O'Riordan,

Further to the submissions received from Bord Gáis Éireann on 23rd May 2007 and pursuant to the Consent to Construct the pipeline issued under Section 39A of the Gas Act, 1976, as amended, I hereby convey the consent of the Commission to bring into operation the Natural Gas Pipeline diversions known as the Mayo-Galway Pipeline subject to the following conditions:

a) That the pipeline be operated in accordance with Irish Standard 328: 2003 (Code of Practice for Gas Transmission Pipelines and Pipeline Installations)
b) That the pipeline also be operated in accordance with the conditions contained in the consent to construct the pipeline.

Yours sincerely,

Michael G Tutty
Commissioner

The Exchange,
Belgard Square North,
Tallaght,
Dublin 24, Ireland

Tel: +353 1 400 0800
Fax: +353 1 400 0850
Website: www.cer.ie

c.c. R.G. Walsh

An Roinn Fiontar Poiblí,
44 Sráid Chill Dara,
Baile Átha Cliath 2.

Department of Public Enterprise,
44 Kildare Street,
Dublin 2.

Attn: G. Breen
T. Considine

4th March, 2002

Mr. B.J. Barry,
Bord Gáis Éireann,
P.O. Box 51,
Gasworks Road,
Cork.

Re: Gas Act, 1976, Section 8(7) consent for the natural gas pipeline from Mayo to Galway

Dear Mr. Barry,

I am directed by Mr. Joe Jacob, T.D., Minister of State at the Department of Public Enterprise to refer to your letter of 20th March 2001 concerning the proposed construction of a natural gas transmission pipeline by Bord Gáis Éireann from Mayo to Galway.

In line with Section 8(7) of the Gas Act, 1976, as amended, I am to convey the consent of the Minister of State to the construction of the pipeline. The consent is given with the concurrence of the Minister for Finance. The Minister for Arts, Heritage, Gaeltacht and the Islands (Dúchas) has been consulted. Dúchas has no objections to the proposal subject to the conditions as outlined in their letter of 21st December, 2001 (copy attached).

The Minister for the Environment and Local Government was also consulted. That Department stipulates that Bord Gáis Éireann consult and agree with the relevant local authorities in relation to the depth at which the pipeline will cross proposed and existing roads, watermains or other services and the specifications or reinstatements.

Additional conditions of consent include:-

- Bord Gáis Éireann shall ensure that all of the mitigation measures identified in the document entitled "Mayo –Galway Gas Pipeline _ List of Mitigation Measures " (Copy Attached) submitted by BGÉ, on the instructions of the Inspectors, shall be complied with.

- That the pipeline be constructed in accordance with the plans, specifications and other documents furnished to the Minister as part of the application for this consent.

- The construction of the pipeline shall be in accordance with:

Telephone: (01) 670 7444 Lo-Call 1890 443311 Direct Dial: (01) 604_____ Fax: (01) 670 9633 http://www.dpe.ie

- Council Directive 85/337/EEC as implemented by the European Communities (Environmental Impact Assessment) Regulations (S.I. 349 of 1989)

- Council Directive 97/11/EC on the assessment of the effects of certain public and private projects on the environment (S.I. 51 of 1990)

- Council Directive 85/337/EEC as implemented by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1994 (S.I. 84 of 1994)

- Council Directive 85/337/EEC as implemented by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1996 (S.I. 101 of 1996)

- The European Communities (Environmental Assessment) (Amendment) Regulations, 1998 (S.I. 351 of 1998), and

- Council Directive 97/11/EC as implemented by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999 (S.I. No. 93 of 1999).

- That the necessary planning permissions shall be in place prior to construction.

This consent is to construct but not to operate the pipeline. On completion of the certification of fitness process separate conditions relating to the operation of the pipeline will be issued.

Yours sincerely,

Peter O'Neill
Principal
Gas (Regulatory) Division

Audrey Allen

From: Audrey Allen on behalf of Tom Considine
Sent: 24 May 2005 13:11
To: Garrett Fitzgerald (gfitzgerald@cer.ie)
Subject: South - North & Mayo - Galway Pipelines - Information requested

Attachments: CER SN & MG Info.240505.AA.doc; Route Map.pdf; Route Map.pdf

Garrett,

I refer to our telephone conversation last evening and attach for your attention details of the South – North pipeline and Mayo – Galway pipeline together with route maps in respect of both pipelines .

I will forward a hard copy via post.

If you have any queries in respect of same please do not hesitate to contact me.

Regards,
Tom.

CER SN & MG nfo.240505.AA.doc..

Route Map.pdf (568 KB)

Route Map.pdf (1 MB)

Audrey Allen
Pipelines/Wayleave Acquisitions
Bord Gais Eireann
P.O. Box 51
Gasworks road.
Cork.

Tele: 021 453 4275
E-mail: aallen@bge.ie

BORD GÁIS ÉIREANN

Head Office:
P.O. Box 51,
Gasworks Road,
Cork.
Telephone (021) 4534000
Fax (021) 4534001

By E-Mail & Post

BORD GÁIS

Mr. Garrett Fitzgerald,
Commission for Energy Regulation,
Plaza House,
Belgard Road,
Tallaght,
Dublin 24.

24th May, 2005

c.c. John Beary 24/5/05

Dear Garrett,

I refer to our telephone conversation last evening and set out hereunder details of the South – North pipeline and Mayo – Galway pipeline together with route maps in respect of both pipelines as requested.

South – North Pipeline

Pipeline length:	155 Km (R.O.I – 55 Km, N.I – 100 Km)
Pipeline Diameter:	450 mm
Mechanical Construction:	2006
Estimated Budget Cost:	Stg£86.5 million

The purpose of the pipeline is to reinforce security of supply of Natural Gas to the existing network in Northern Ireland and to supply industrial and commercial customers en route.

Mayo – Galway Pipeline

Pipeline length: 149 Km
Pipeline Diameter: 650 mm
Mechanical Construction:
- Section 1: Cappagh South AGI to BallymoneenAGI, 16.7 Km – 2004
- Section 2: Ballymoneen AGI to Srahyconigaun AGI, 96.3 Km - 2005
- Section 3: Srahyconigaun AGI to Bellanaboy Reception Terminal, 35.8 Km – 2006

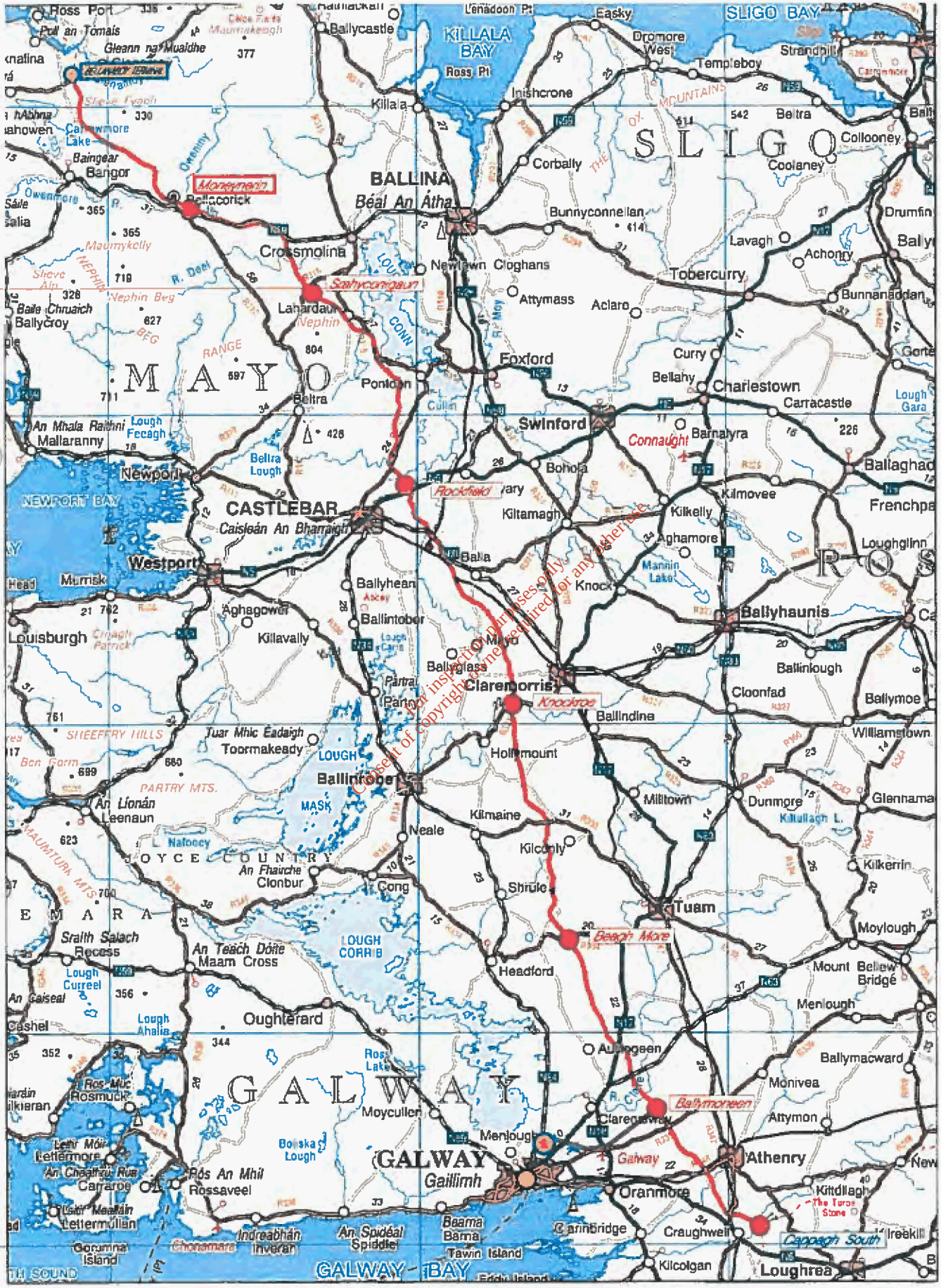
Estimated Budget - €209 million

If you require any further information please me.

Yours sincerely,

Tom Considine

Tom Considine
Manager Wayleaves/Facilities



Attn. T. Coughlan
C. Moore

CER

Commission for Energy Regulation
An Coimisiún um Rialáil Fuinnimh

Our ref: 0304/11984

25 April 2003

attn: BM

Secretary's Office
3 JUN 2003
BGE

Mr. B. J. Barry,
Secretary,
Bord Gáis Éireann,
P.O. Box 51,
Gasworks Road,
Cork.

Re: Consent to Construct for Mayo/Galway Pipeline under Section 8 of the Gas Act, 1976

Dear Mr. Barry,

I refer to your letter of 28th March last. The Commission notes that BGE is of the view that the consent granted by the Minister for Public Enterprise under Section 8 of the Gas Act, 1976 in relation to Mayo/Galway pipeline continues to have effect as if it had been issued under Section 39A of the Gas (Interim) (Regulation) Act, 2002.

I confirm that the Commission is in agreement with BGÉ's view assuming that the consent was operative immediately before the commencement of the 2002 Act.

If you have any comments or queries on this please let me know.

Yours sincerely,

Eugene Coughlan,
Head of Licensing, Consumer , Corporate & Environmental Affairs

Wayleaves & Facilities Management
- 6 JUN 2003
BGE

Plaza House,
Belgard Road, Tallaght,
Dublin 24, Ireland

Tel: +353 1 4000 800
Fax: +353 1 4000 850
www.cer.ie

An Roinn Fiontar Poiblí,
44 Sráid Chill Dara,
Baile Átha Cliath 2.

Department of Public Enterprise,
44 Kildare Street,
Dublin 2.

4th March, 2002

Mr. B.J. Barry,
Bord Gáis Éireann,
P.O. Box 51,
Gasworks Road,
Cork.

Re: Gas Act, 1976, Section 8(7) consent for the natural gas pipeline from Mayo to Galway

Dear Mr. Barry,

I am directed by Mr. Joe Jacob, T.D., Minister of State at the Department of Public Enterprise to refer to your letter of 20th March 2001 concerning the proposed construction of a natural gas transmission pipeline by Bord Gáis Éireann from Mayo to Galway.

In line with Section 8(7) of the Gas Act, 1976 as amended, I am to convey the consent of the Minister of State to the construction of the pipeline. The consent is given with the concurrence of the Minister for Finance. The Minister for Arts, Heritage, Gaeltacht and the Islands (Dúchas) has been consulted. Dúchas has no objections to the proposal subject to the conditions as outlined in their letter of 21st December, 2001 (copy attached).

The Minister for the Environment and Local Government was also consulted. That Department stipulates that Bord Gáis Éireann consult and agree with the relevant local authorities in relation to the depth at which the pipeline will cross proposed and existing roads, watermains or other services and the specifications or reinstatements.

Additional conditions of consent include:-

- Bord Gáis Éireann shall ensure that all of the mitigation measures identified in the document entitled "Mayo –Galway Gas Pipeline _ List of Mitigation Measures " (Copy Attached) submitted by BGÉ, on the instructions of the Inspectors, shall be complied with.

- That the pipeline be constructed in accordance with the plans, specifications and other documents furnished to the Minister as part of the application for this consent.

- The construction of the pipeline shall be in accordance with:

Telephone: (01) 670 7444 Lo Call 1890 442211 Direct Dial (01) 604

- Council Directive 85/337/EEC as implemented by the European Communities (Environmental Impact Assessment) Regulations (S.I. 349 of 1989)

- Council Directive 97/11/EC on the assessment of the effects of certain public and private projects on the environment (S.I. 51 of 1990)

- Council Directive 85/337/EEC as implemented by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1994 (S.I. 84 of 1994)

- Council Directive 85/337/EEC as implemented by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1996 (S.I. 101 of 1996)

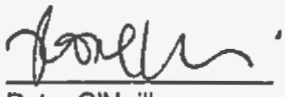
- The European Communities (Environmental Assessment) (Amendment) Regulations, 1998 (S.I. 351 of 1998), and

- Council Directive 97/11/EC as implemented by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999 (S.I. No. 93 of 1999).

- That the necessary planning permissions shall be in place prior to construction.

This consent is to construct but not to operate the pipeline. On completion of the certification of fitness process separate conditions relating to the operation of the pipeline will be issued.

Yours sincerely,



Peter O'Neill
Principal
Gas (Regulatory) Division

An Roinn Fiontar Poiblí,
44 Sráid Chill Dara,
Baile Átha Cliath 2.

Department of Public Enterprise,
44 Kildare Street,
Dublin 2.

21st September, 2001.

Mr. B.J. Barry,
Secretary,
Bord Gais Eireann,
P.O.Box 51,
Gas Works Road,Cork

Proposed Mayo - Galway Gas Pipeline

Dear Mr. Barry,

I am directed by Mr. Joe Jacob, T.D., Minister of State at the Department of Public Enterprise, to refer to the following correspondence received from you recently:

- Application dated 20th March, 2001 pursuant to Section 8(7) of the Gas Act, 1976 as amended for consent to the construction of a natural gas transmission pipeline from Mayo to Galway.

- Application dated 27th August, 2001 pursuant to Section 32 of the Gas Act, 1976 for Acquisition Orders to enable BGE to acquire compulsory the land and rights over land listed in a schedule attached to the application.

The Minister wishes to draw your attention to the following procedures which should be followed in relation to the above applications:

1) A newspaper notice (Consent Notice) should be published giving details of BGE's current application for consent to construct the pipeline and allowing for a period of at least one month for the making of objections and representations on the application. In that notice reference should be made to inspection by the public of the relevant application documentation for a stated period and at stated places. In that respect, it is necessary to make available all application documentation which has been submitted to the Minister of State. (Draft Notice attached).

2) A separate newspaper notice in similar terms to that set out at 1 foregoing should be published, side by side with the Consent Notice giving details of BGE's applications submitted to the Minister of State for acquisition orders to acquire compulsory certain lands and right over lands (Draft Notice attached).

3) All the newspaper notices should be published in The Tuam Herald, The Connaught Tribune, The Galway Advertiser, The Mayo News, The Western People, The Connaught Telegraph, The Irish Times and The Irish Independent.

4) The locations at which the documentation should be made available for inspection are the Garda Stations at Crossmolina,Co.Mayo; Bangor

Erris,Co.Mayo; Castlebar, Co. Mayo; Claremorris, Co.Mayo; Tuam, Co. Galway; Athenrye, Co. Galway and at 24A D'Olier Street, Dublin 2. The Documentation should be made available for a period of at least one month beginning from the date of publication of the newspaper notices, both dates inclusive.

5) If further relevant documentation is submitted to the Department subsequent to the publication of the notices, copies of such documentation must also be added to that already lodged at the 7 locations mentioned above.

6) Copies of each of the newspapers in which the notices appear should be forwarded to the Minister of State.

7) Your attention is drawn to the provision of Article 3 (1) of the Second Schedule to the Gas Act, 1976, under which the Board is obliged to send, within a specified time, copies of the draft orders and relevant documents to the Commissioners of Public Works, the Minister for Agriculture and Food, the Minister for the Environment and Local Government, An Bord Pleanala and to any local authority within those functional area the land to which the applications relate or any part of such land is situated. The Board should also at that time send copies of these documents to Coilte, Coras Iompair Eireann, ESB, the Minister for the Marine and Natural Resources and the Minister for Arts, Heritage, Gaeltacht and the Islands.

Note should also taken of Article 4 of S.I.51 of 1990 Gas Act 1976 (sections 4 & 40A) Regulations, 1990 which provides for consultation by the Company with in addition to some of the above mentioned, Bord Failte Eireann, The National Heritage Council, The National Monuments Advisory Council and An Taisce.

In the event that an objection is received by the Minister of State in relation to the application for consent under Section 8 (7) of the Gas Act, 1976 or in relation to the applications for acquisition orders under Section 32 of the Gas Act, 1976, an oral hearing shall be held unless in the opinion of the Minister the objection is frivolous, vexatious or otherwise of such a nature that the application can properly be considered without such a hearing.

It is the Minister of State's intention to charge Bord Gais a fee pursuant to Article 5 of the Second Schedule to the Gas Act, 1976 in respect of the applications acquisition orders and a further communication in this regard will be sent to you in due course.

Yours sincerely,

Orla Ryan,
Gas (Regulatory) Division

Tel: 01 6041118
Fax: 01 6041016
E-mail: OrlaRyan@dpe.ie

THE IRISH TIMES 27 SEP 2001

PUBLIC NOTICES

GAS ACT, 1976 (as Amended)

European Communities (Environmental Impact Assessment) Regulations, 1989 to 1999

Environmental Impact Statement

Submission to Minister of State at the Department of Public Enterprise:
Notice is hereby given that Bord Gais Éireann in compliance with the above Act and Regulations, has submitted an Environmental Impact Statement to the Minister of State at the Department of Public Enterprise in support of its application to construct a natural gas pipeline from Mayo to Galway.
The proposed gas pipeline is 149km in length, 660mm in diameter and will follow a route close to or through the following places:
Bellanaboy Bridge, Bellacorick, Crossmolina, Castlebar and Claremorris, all in the County of Mayo and Tuam, Athenry and Craughwell all in the County of Galway.
Objections and representations with regard to the said submission may be made in writing to the Minister of State at the Department of Public Enterprise at his office at 25 Clare St., Dublin 2 at any time from the 28th of September 2001 to the 29th of October 2001 both dates inclusive.
This document (including a map showing the route of the proposed pipeline) was supplied by the Board to the Minister of State at the Department of Public Enterprise. Copies of said document may be inspected free of charge by any person during the period above specified between the hours of 9.00 am-4.30 pm on any day (Saturdays, Sundays and Public Holidays excepted) at the following locations:
Bord Gais Éireann, Gas Works Road, Cork.
Bord Gais Éireann, 24A D'Olier Street, Dublin 2.
And at:
Garda Stations at:
Crossmolina Garda Station, Crossmolina, Co. Mayo (10 am to 1 pm).
And:
Bangor Erris Garda Station, Bangor Erris, Co. Mayo (when open).
And:
Castlebar Garda Station, Castlebar, Co. Mayo.
And:
Claremorris Garda Station, Claremorris, Co. Mayo.
And:
Tuam Garda Station, Tuam, Co. Galway.
And:
Athenry Garda Station, Athenry, Co. Galway (10 am to 1 pm).
Copies of the said document may be purchased at a cost of £50.00 per copy during the period of one month commencing on the date of the publication of this notice in this newspaper from the offices of Bord Gais Éireann, Gas Works Road, Cork between the hours of 9.00 am and 4.30 pm or by written request during the said period addressed to the Secretary, Bord Gais Éireann, Gas Works Road, Cork.
In accordance with Article 4 of S.I. 51 of 1990, Gas Act, 1976 (Sections 4 and 40A) Regulations, 1990, copies of the Environmental Impact Statement have been circulated to all Local Authorities within whose functional area the land to which the Application relates or any part of such land is situated, the Commissioners for Public Works in Ireland, Bord Fáilte Éireann, the National Heritage Council, the National Monuments Advisory Council, and An Taisce.
Dated this 25th day of September 2001.
Signed: Bartholomew J. Barry, Secretary,
Bord Gais Éireann, Gas Works Road, Cork.

NOTICE

GAS ACT, 1976 AS AMENDED

APPLICATION TO MINISTER OF STATE AT THE DEPARTMENT OF PUBLIC ENTERPRISE FOR CONSENT UNDER SECTION 8(7) OF THE GAS ACT, 1976

NOTICE is hereby given that Bord Gais Éireann ('the Board") has made an Application under Section 8(7) of the Above Act, to the Minister of State at the Department of Public Enterprise for consent to construct a pipeline for the transmission of natural gas which pipeline is to be known as the Mayo-Galway Gas Pipeline. The proposed Gas Pipeline is 149 km in length, 660 mm in diameter and runs close to, or through following:

Bellanaboy Bridge, Bellacorick, Crossmolina, Castlebar & Claremorris, all in the County of Mayo and Tuam, Athenry and Craughwell all in the County of Galway.

Objections and representations with regard to the said proposed Application may be made in writing to the Minister of State at the Department of Public Enterprise at his office at 25 Clare Street, Dublin 2, at any time from the 28th of September, 2001 until the 29th of October, 2001, both dates inclusive.

The documents (including a map showing the route of the proposed pipeline) which accompanied the Application were supplied by the Board to the Minister of State at the Department of Public Enterprise. Copies of the said documents may be inspected free of charge by any person during the period above specified between the hours of 9.00 a.m. and 4.30 p.m. on any day (Saturdays, Sundays and Public Holidays excepted) at:

BORD GAIS ÉIREANN,
Gasworks Road,
Cork.

BORD GAIS ÉIREANN,
24A D'Olier Street, Dublin 2.

And at:

GARDA STATIONS AT:

Crossmolina Garda Station,
Crossmolina, Co. Mayo (10 am to 1 pm).

Bangor Erris Garda Station,
Bangor Erris, Co. Mayo (when open).

Castlebar Garda Station,
Castlebar, Co. Mayo.

Claremorris Garda Station,
Claremorris, Co. Mayo.

Tuam Garda Station,
Tuam, Co. Galway.

Athenry Garda Station,
Athenry, Co. Galway (10 am to 1 pm).

Dated this 25th day of September, 2001.

Signed: Bartholomew J. Barry,
Secretary,
BORD GAIS ÉIREANN,
Gasworks Road,
Cork.

Irish Independent

27 SEP 2001

NOTICE

GAS ACT, 1976, as amended

Applications for Acquisition Orders under Section 32 of the Gas Act, 1976

NOTICE of the making under Section 32 of the Gas Act, 1976, to the Minister of State at the Department of Public Enterprise of Applications for Acquisition Orders, under and within the meaning of the above Act, provision for compensation being made in Section 33 of the said Act.

MAYO - GALWAY PIPELINE

1. Pursuant to Article 3 (1) of the Second Schedule to the said Act, notice is hereby given that Bord Gais Eireann ("the Board") has applied to the Minister of State at the Department of Public Enterprise for Acquisition Orders (within the meaning of the said Act) to enable the Board under Section 32 of the said Act to acquire compulsorily the right over land specified in Schedule A to this paragraph, over the strips of land situate in the Townlands and Counties specified hereunder

No.	Townland	County	Reputed Owner(s)
MG.04.	Muingingaun	Mayo	John Ruddy
MG.05.	Muingingaun	Mayo	Commonage – Reputed Occupiers / Owners: Fabian Healy, Mary Flannery, Reps. of John Flannery (Deceased), John James Flannery, Bartley Thomas Flannery, James Stephen Flannery and Unknown.
MG.10.	Glenturk More	Mayo	Martin McManaman
MG.10A.	Glenturk More	Mayo	Bridget McManaman
MG.11.	Glencullin Upper	Mayo	Thomas Ruddy
MG.21.	Glencullin Upper	Mayo	Mary Cafferty and Reps of Hugh Cafferty (Deceased)
MG.22.	Glencullin Upper	Mayo	Michael Joseph Granaghan, Mary Cafferty and Reps of Hugh Cafferty (Deceased).
MG.23.	Sheskin and Glencullin Upper	Mayo	John Joseph Mullarkey and Margaret Mullarkey
MG.26A.	Tawnaghmore	Mayo	Commonage – Reputed Occupiers / Owners: Patrick Michael Cuffe, Michael McHugh, Paddy Gallagher, Brendan Gallagher, Tommy McHugh, Tommy McHugh – Thomas and Patrick Hynes.
MG.29.	Dooleeg More	Mayo	Marie Fergus
MG.29A.	Dooleeg More	Mayo	Michael Deegan
MG.33.	Dooleeg More	Mayo	Christina Harding
MG.38.	Dooleeg More	Mayo	Commonage – Reputed Occupiers / Owners: Patrick Hopkins Junior, Gerard Loftus, Michael Christopher Gallagher, Noel Hegarty, Michael Barrett and Thomas Walsh.
MG.125.	Eskeragh	Mayo	Martin Fergus Rowland and Julie Rowland
MG.138A.	Knockbrack	Mayo	Reps. of Ellen McDonagh (Deceased)
MG.139.	Killacorraun	Mayo	Michael O'Boyle
MG.142.	Killacorraun	Mayo	John Noone
MG.144.	Killacorraun	Mayo	Thomas Mulhern and Michael Mulhern
MG.146.	Killacorraun	Mayo	John James Cafferty
MG.147	Sramyconigaun	Mayo	Noel Murphy and Patricia Murphy
MG.156.	Carrowkeeheen	Mayo	John Bourke (Junior)
MG.179.	Lahardaun	Mayo	John Francis Devaney and Emily Devaney
MG.179B.	Lahardaun	Mayo	John Francis Devaney
MG.181A.	Lahardaun	Mayo	Tom Rowland
MG.184.	Knockfarnaght	Mayo	Patrick Flannery, Michael Flannery and Rory Gibbons.
MG.198.	Tawnagh	Mayo	Martin Maloney, Reps of Patrick Moran (Deceased), Reps of Mary McHale (Deceased), and Reps of Katherine Sheridan (Deceased)
MG.206.	Massbrook Lower	Mayo	Mary Quinn
MG.213.	Massbrook South	Mayo	Thomas Brogan and Reps of Patrick Grehan (Deceased)
MG.214.	Massbrook South	Mayo	Martin Francis Cawley
MG.217	Terryduff and Largan	Mayo	Commonage – Reputed Occupiers / Owners: Michael Browne, Willy Cusack, Bridget Pauline Garrett, Tommy Holmes, John Kenny, Kathleen Mulhern, Richard O'Donnell and Andy Roche.
MG.227	Largan	Mayo	Commonage – Reputed Occupiers / Owners: John Joseph Kenny
MG.227B.	Largan	Mayo	John Joseph Kenny
MG.228.	Largan	Mayo	John Joseph Kenny
MG.233.	Gort	Mayo	Commonage – Reputed Occupiers / Owners: Patrick McHale, John Jennings, Michael McTigue, Patrick Joseph Jennings and Thomas Rowland
MG.234A.	Gort	Mayo	Thomas Rowland and Michael McTigue
MG.235.	Gort	Mayo	Patrick Joseph Ruane
MG.235A.	Gort	Mayo	Patrick McHale
MG.242B.	Greenans	Mayo	Commonage – Reputed Occupiers / Owners: Thomas Loftus and Peter Loftus
MG.243	Tawnykinaff	Mayo	Commonage – Reputed Occupiers / Owners: Michael Duffy, Michael Sheridan, John O'Donnell, Padraig Neary and Paul Dunne
MG.244.	Crumlin	Mayo	Commonage – Reputed Occupiers / Owners: Colm Rapple, Tommy Holmes and Frank Hopkins
MG.272.	Ross West	Mayo	Reps. of Sarah Moran (Deceased) and John Moran
MG.275.	Ross West	Mayo	Marie Devaney
MG.280.	Sranalee and Ross West	Mayo	Commonage – Reputed Occupiers / Owners: Mary Vahey, Paul Mayock and Frank Hopkins
MG.281A.	Sranalee	Mayo	Unknown
MG.281B.	Sranalee	Mayo	Reps. of Martin Mulhern (Deceased) and Adrian Coady
MG.281C.	Sranalee and Derrynamuck	Mayo	Anthony Corcoran
MG.284.	Meelick and Cloonkesh	Mayo	Commonage – Reputed Occupiers / Owners: James McHale, Nora Carney, Martin Neary, Bridget Duggan and Noel Flynn
MG.284A.	Meelick	Mayo	James McHale
MG.286.	Rockfield	Mayo	James Doherty
MG.294.	Derrynacrast	Mayo	Reps. of Patrick Kelly (Deceased)
MG.298.	Ballinvoash	Mayo	Peter Moran
MG.304.	Drumdoogh	Mayo	Michael Jordan
MG.305.	Drumdoogh	Mayo	Patrick Naughton
MG.310.	Lakeland Lower	Mayo	Thomas J. Gilligan, Noel McDonagh, Shane Reilly and Aidan Fanning
MG.313.	Skiddernagh	Mayo	Mary Loftus
MG.314.	Skiddernagh	Mayo	Thomas Lally
MG.321	Knockmore Eighter	Mayo	Margaret Loftus
MG.337A.	Brownhall Demesne	Mayo	Patrick Griffith (Junior) and Mathew Griffith
MG.339.	Brownhall Demesne	Mayo	Mary Josephine Dempsey and James Browne
MG.343.	Ballymackeogh	Mayo	Margaret Ruane and James Ward
MG.343A.	Ballymackeogh	Mayo	Margaret Ruane, Martin Ruane and James Ward
MG.343B.	Ballymackeogh	Mayo	Marie Hynes
MG.347	Portagh	Mayo	Michael Cawe, James Shaughnessy, Patrick Joseph Kearney, Stephen McLoughlin and Unknown
MG.350A.	Portagh	Mayo	Delia Murphy Novack and Patrick Novack
MG.363	Knockroe	Mayo	Thomas McNamara
MG.388A	Carrowkeel	Mayo	Reps. of Margaret Henegan (Deceased) & Thomas Hegarty

BORD GÁIS ÉIREANN

Head Office:
P.O. Box 51,
Gasworks Road,
Cork.
Telephone (021) 4534000
Fax (021) 4534001

Our Ref:85-CPO 280901SF

BORD GÁIS

Ms. Orla Ryan,
Gas (Regulatory) Division,
Department of Public Enterprise,
44, Kildare Street,
Dublin 2.

28th September 2001

Re: Mayo to Galway Pipeline
Section 8 (7) Section 32 and E.I.S. Public Notices

Dear Orla,

I enclose for your attention a copy of the following Newspapers in respect of the above Project as instructed in item 6 of your letter dated 21st September 2001.

- The Irish Times
- Irish Independent
- Western People
- The Mayo News
- The Connacht Tribune
- The Tuam Herald
- Galway Advertiser
- The Connaught Telegraph

Should you have any queries please do not hesitate to contact me.

Yours sincerely.

B.J. Barry,
Secretary

BORD GÁIS ÉIREANN

Head Office:
P.O. Box 51,
Gasworks Road,
Cork.
Telephone (021) 4534000
Fax (021) 4534001

Our Ref:85-CPO 280901SF

BORD GÁIS

Ms. Orla Ryan,
Gas (Regulatory) Division,
Department of Public Enterprise,
44, Kildare Street,
Dublin 2.

28th September 2001

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Section 8 (7) Section 32 and E.I.S. Public Notices

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- Western People
- The Mayo News
- The Connacht Tribune
- The Tuam Herald
- Galway Advertiser
- The Connaught Telegraph

Should you have any queries please do not hesitate to contact me.

Yours sincerely.

B.J. Barry,
Secretary

An Roinn Ealaíon, Oidhreachta, Gaeltachta agus Oileán
Department of Arts, Heritage, Gaeltacht and the Islands

Dúchas
The Heritage Service

Rannóg na nIarratas Forbartha
Development Applications Section

7 Plás Ely, Baile Átha Cliath 2, Éire
7 Ely Place , Dublin 2, Ireland

Teileafón +353 1 647 3000
Facsuimhir +353 1 678 8116
Glao Áitiúil 1890 474 847
E-mail devapps@ealga.ie
Web www.heritageireland.ie

Our Ref: DAS-G2001/ 329

21st December 2001.

Secretary General,
Department of Public Enterprise.
44 Kildare Street,
Dublin 2.

FAO: Ms. Orla Ryan.

Re: Mayo to Galway Pipeline

I refer to the above project and previous correspondence, in particular this Department's letter of 6th November, Brendan Mangan's (Bord Gáis) letter of 7th December to the Department of Public Enterprise, and Rose M. Cleary's (Project Archaeologist employed by Bord Gáis) letter of 5th December to this Department, in respect of the protection and conservation of the natural and archaeological heritage along the proposed pipeline. The proposed development has been evaluated from an archaeological and ecological perspective and outlined below are our comments:

1. Archaeological Heritage.

This Department outlined our position in relation to the archaeological heritage (including terrestrial and underwater archaeology and the ongoing monitoring of the project) in our letter of 6th November. We are satisfied that, on the basis of the measures outlined in the letter issued by Rose M. Cleary (Project Archaeologist employed by Bord Gáis) on 5th December (copy attached) being fulfilled, our concerns in this regard will be addressed.

2. Natural Heritage.

In our letter of 6th November we outlined our position in relation to the natural heritage (including a number of specific concerns). We are satisfied that on the basis of the measures outlined in the letter issued by Brendan Mangan (Project Co-Ordinator, Bord Gáis) on 7th December (copy attached) being fulfilled, our concerns in this regard will be addressed.

On the basis of the above, with particular regard to the ongoing liaison with and the future agreement of this Department where appropriate, we have no further objections to the proposed development proceeding.

Is mise le meas,

Patrick Gilheaney,
Development Applications Section.

December 5th, 2001

FAO: Edward Bourke

Dúchas

Department Arts, Culture, Gaeltacht and the Islands,

Dun Scéine,

Harcourt Lane,

Off Harcourt St.,

Dublin 2

Re: Mayo-Galway Gas Pipeline

Dear Ed,

Further to a letter issued by your department on November 6th, inst. I wish to respond on behalf of Bord Gais Eireann to a number of issues the issues raised in the correspondence (Dúchas letter of 6/10/01 to Department of Public Enterprise).

Built Heritage – Archaeological - Terrestrial

1. The pipeline route has been examined in the field by a number of highly qualified archaeologists and the assessment included consultation with Dúchas archaeological staff, a review of all available cartographic and documentary sources including topographic in the National Museum and Dúchas archives. The pipeline route was chosen so that all known archaeological sites were avoided by a minimum of 30m. Bord Gais Eireann has also agreed to finance a programme of paleoenvironmental analyses and archaeological probing in bog land areas.
2. Archaeological monitoring will be undertaken in all areas where ground disturbance is scheduled to take place, including topsoil stripping, trenching and wayleaves.

3. Wetland archaeology: The archaeological consultant and contractor on this project, Margaret Gowen and Co. Ltd. has available specialists in the wetland archaeology field and has previous experience on large scale developments on wetland archaeological sites.
4. Underwater archaeology: Bord Gais Eireann has commissioned a baseline study on the potential underwater archaeological component of the project (M. Gowen and Co. Ltd., November 2001). Twenty three major river crossings have been identified as requiring further underwater investigation by means of a metal detector and diver survey. Nine river crossings will require a wading and metal detector survey. These surveys have been commissioned on our behalf by M. Gowen and Co. Ltd. and based on the results and in consultation with Dúchas archaeological staff, any mitigation strategies required for the protection of the archaeological heritage will be put in place.
5. Test trenching and excavation of sites identified during the construction monitoring phase: Bord Gais Eireann has agreed to finance the resolution of any archaeological sites discovered during the construction stage of the pipeline.
6. Temporary construction facilities: These areas have been inspected in the field by Margaret Gowen and Co. Ltd. No above ground archaeological remains were discovered. All ground works necessary for the construction of storage areas will be monitored by an archaeologist from M. Gowen and Co. Ltd.
7. Hard standing areas: These sites will be treated in a similar fashion to the temporary storage facilities and ground disturbance will be archaeologically monitored by Margaret Gowen and Co. Ltd.
8. Boundaries / Townland boundaries: Archaeological staff from Margaret Gowen and Co. Ltd. will record these during the construction phase of the pipeline.
9. Drainage channels: These will also be archaeologically monitored during the construction phase of the pipeline.
10. Archaeological sites discovered during pipeline construction: The treatment of all archaeological sites discovered during the construction phase will be subject to recommendations from Dúchas archaeological staff. Any necessary mitigation strategies to resolve the sites including archaeological excavation and preservation *in situ* will be put in place.

11. Provision for the discovery of archaeological sites during the construction stage: Bord Gais Eireann will allow for adequate time for the resolution of newly discovered sites. M. Gowen and Co. Ltd. are currently preparing a cost proposal and contingency funding for major discoveries will be part of these estimates.
12. Reroutes: All reroutes will be archaeologically assessed in advance of development and the results will be forwarded to your department.

Underwater Archaeology

In order to address the underwater archaeology component of the project, M. Gowen and Co. Ltd. have prepared a baseline assessment study of all river and stream crossings. The following schedule is in response to individual issues raised in your department's letter of November 6th, 2001.

1. Desktop study of all archaeological sites and finds associated with the river and streams: This has been carried out and the results submitted to your department. The drainage works records on various streams and rivers are included in the report.
2. Archaeological surveys: Bord Gais Eireann agrees to finance all necessary surveys of river and stream crossings. The surveys are to include wading and metal detector surveys of smaller watercourses and diver surveys and metal surveys of larger rivers. All surveys with metal detectors will be licensed by Dúchas.
3. Assessment of temporary construction works: The surveys on water courses will include assessments of construction works and the potential impact on underwater archaeological and riverbank/terrestrial sites. In consultation with Dúchas and required mitigation strategies will be put in place to protect the archaeological heritage.
4. Changes in hydrology of rivers and streams: If archaeological material is detected in the underwater archaeological surveys, this will be addressed prior to the construction phase and any recommendations by Dúchas archaeological staff will be integrated in the works schedule.

5. Resolution of impact of pipeline on underwater archaeology: The results of any studies/assessments of the underwater component of the project will include mitigation strategies for the resolution of archaeological sites. These mitigation strategies will be discussed with Dúchas archaeological staff and any further recommendations will be incorporated into the works schedule.
6. Methods statement on underwater archaeology:
   (a) A list of stream and river crossings on the development corridor has been submitted to your department by M. Gowen and Co. Ltd.
   (b) The above report includes a desktop assessment of the archaeological potential of the stream and river crossings.
   (c) The underwater and metal detector surveys have been commissioned on behalf of Bord Gais Eireann by M. Gowen and Co. Ltd.
   (d) Appropriate licences will be applied for in order that the above surveys are carried out.
7. Strategy for underwater archaeology: The strategy for underwater archaeology is dependent on the appropriate surveys and the results of same. Any necessary mitigation measures to preserve/protect/preserve by record of newly discovered archaeological sites will be discussed with Dúchas archaeological staff and by agreement all necessary strategies will be put in place.

Finally, Bord Gáis Ēireann now request that Dúchas indicate to the DPE that they are satisfied with BG E's proposals in relation to the archaeological matters referred to in Dúchas' letter of the 6/10/01.

Yours Sincerely

Rose M. Cleary

Project archaeologist BGE

Telefax

To: HENRY SMYTH BGE
Fax: 4534076
From: DAN GARVEY
Date: 24 09 01 Pages: 1
AS REQUESTED

DG/SH/L0111
6 September 2001

Ms Orla Ryan
Department of Public Enterprise
44 Kildare Street
Dublin 2

C689/16 Mayo to Galway Gas Pipeline – EIS

Dear Ms Ryan

Please find enclosed 6 No. copies of the addendum report for the above EIS, as requested from Bord Gáis Éireann.

Yours sincerely
for
Arup Consulting Engineers

Daniel Garvey

Copy to (Letter Only) Mr Brendan Mangan – Bord Gáis Éireann

Encl.

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters, PO Box 3000
Johnstown Castle Estate
County Wexford, Ireland

Ceanncheathrú, Bosca Poist 3000
Eastát Chaisleán Bhaile Sheáin
Contae Loch Garman, Éire

T: +353 53 9160600
F: +353 53 9160699
E: info@epa.ie
W: www.epa.ie

LoCall: 1890 33 55 99

Ms Orla Ryan
Assistant Principal Officer
Dept of Communications, Energy & Natural Resources
29-31 Adelaide Road
Dublin 2
By email: orla.ryan@dcenr.gov.ie

05 February 2015 Reg No: P0738-03

Dear Ms Ryan

The Agency is carrying out an environmental impact assessment (EIA) under Section 83(2A) of the EPA Act 1992, as amended, of the proposed gas processing activity to be carried out at a terminal at Bellanaboy, Co. Mayo, connected to the Mayo-Galway gas pipeline, authorised by the Minister.

Having regard to the decision of the High Court in the case of *O'Grianna v. An Bord Pleanála* (unreported, High Court, Peart J., 12 December 2014) the Agency requires further information in relation to the P0738-03 Shell E & P Ireland Limited licence review application, specifically in relation to the Bord Gais Eireann downstream pipeline (*Mayo to Galway gas pipeline*) connecting the gas refinery at Bellanaboy to the Dublin to Galway gas pipeline:

- Please furnish a hardcopy of all documents relating to any environmental impact assessment carried out by your Department in respect of the *Mayo to Galway gas pipeline* including:
  - Environmental Impact Statement (EIS) and addendums, where available,
  - Report in relation to the decision to grant consent for the construction/operation of *Mayo to Galway gas pipeline*, where available.
- A copy of the *Mayo to Galway gas pipeline* authorisation(s) including:
  - Consent to construct the gas pipeline,
  - Consent to operate the gas pipeline.

Please respond to the Agency within **four weeks** of the date of this notice.

Please also forward any comments the Minister may have in relation to the interaction, if any, between the pipeline and the activity, and the cumulative impacts, if any, of the pipeline with the activity.

Note: Any ***telephone enquiries*** in relation to the above should be directed to **Jennifer Cope** at the number above.
All ***written communications and replies*** should be directed to Noeleen Keavey, Office of Climate, Licensing, & Resource Use, EPA, PO Box 3000, Johnstown Castle Estate, County Wexford.

It would be much appreciated if you could provide electronic copies of all documents in searchable PDF format on CD-ROM (no file larger than 10 MB) so that the Agency can make them available on its website. Your response to this request should be directed to Noeleen Keavey, Administration Officer, Office of Climate, Licensing & Resource use.

You will be notified of the proposed determination in due course.

Yours sincerely

p.p. Noeleen Keavey

Jennifer Cope
Environmental Licensing Programme
Office of Climate, Licensing & Resource Use

Note: Any ***telephone enquiries*** in relation to the above should be directed to **Jennifer Cope** at the number above.
All ***written communications and replies*** should be directed to Noeleen Keavey, Office of Climate, Licensing, & Resource Use, EPA, PO Box 3000, Johnstown Castle Estate, County Wexford.

An Roinn Fiontar Poiblí,
44 Sráid Chill Dara,
Baile Átha Cliath 2.

Department of Public Enterprise,
44 Kildare Street,
Dublin 2.

15 June, 2001

Mr. Brendan Mangan,
P.O. Box 51,
Gasworks Road,
Cork.

Dear Brendan,

Please find enclosed a preliminary evaluation report of the Environmental Impact Statement for the Mayo-Galway pipeline. I would appreciate it if you could arrange to have these issues addressed and respond to this Department in the matter as soon as possible.

Yours sincerely,

Paula Cummins

Paula Cummins
Gas (Regulatory) Division

TES
CONSULTING ENGINEERS
Unit 4B/5, Blanchardstown Corporate Park, Blanchardstown, Dublin 15, Republic of Ireland
Telephone: +353-1-8030402 / 6606471 Fax: +353-1-8030410 / 6601702 E-mail: tes@iol.ie

FACSIMILE COVER SHEET

TO:	Department of Public Enterprise – Gas (Regulatory) Division
ATTENTION:	Ms. O. Ryan and Mr. M. Crosby
TEL NO:	
FAX NO:	01-6041016
FROM:	Arjen Brinkmann
RE:	Draft evaluation report Mayo – Galway gas pipeline
DATE:	14-06-2001
PAGES:	7

Dear Orla and Mark,

Please find attached our draft evaluation report of the EIS for the Mayo – Galway pipeline.

If you have any queries regarding the evaluation report, please do not hesitate to contact me.

Regards,

Arjen

1 INTRODUCTION

1.1 General

TES Consulting Engineers were commissioned by the Department of Public Enterprise, Gas (Regulatory) Division, to assist in its statutory functions in relation to, applications seeking authorisations under Section 8(7) and 40(1) of the Gas Act, 1976, as amended, to construct and operate natural gas pipelines within or into Ireland.

The consultancy services include the following elements:

- Determine whether an Environmental Impact Statement (EIS) is required under current Irish legislation;
- Assess whether the submitted EIS meets the relevant European and Irish legislation and guidelines, report deficiencies, and detail the outcome and resolution with the authors of the EIS; and,
- Establish that land pipelines and submarine pipelines are being designed in accordance with relevant standards and practices, as set out in I.S. 328 and in the 'Technical Guidelines for the Construction of Gas Pipelines in Ireland', or to equivalent or superior standards. Only the preliminary technical information, which is included in the EIS needs to be evaluated.

The pipeline applications in question are proposals by Bord Gais Eireann (BGE) to construct a Second Interconnector between Ireland and Scotland, a proposed Galway Ringmain (Dublin – Galway – Limerick – Dublin) and a BGE/Enterprise Energy Ireland Ltd. proposal to construct a Mayo – Galway pipeline.

The underlaying report comprises the evaluation results of the EIS for the Mayo – Galway Gas Pipeline.

1.2 Evaluation methodology

The evaluation of the EIS has been carried out by the engineers and scientists of TES Consulting Engineers during May 2001. Gasunie Engineering BV from the Netherlands was contracted to evaluate preliminary design aspects.
Chapter 2 contains the evaluation of the EIS. In chapter 3, the preliminary design aspects are evaluated.

2 EVALUATION OF EIS

2.1 Requirement of EIS

2.1.1 Requirement of EIS

Under section 40A of the 1976 Gas Act, the submission of an EIS in relation to an application to construct a pipeline is required for (Technical Guidelines for the Construction of Gas Pipelines in Ireland, Edition 19th March 2001):

- Pipelines for the transport of gas with a diameter of more than 800 mm and a length of more than 40 km;
- Installations for the surface storage of natural gas, where the storage capacity would exceed 200 tonnes;
- Gas pipelines and associated installations where the design pressure would exceed 16 bar and the length of the new pipeline would exceed 40 km.

The Mayo-Galway Pipeline has a diameter of 660 mm and thus does not fall into the scope of the above. However, SI No. 93 of 1999 European Communities (Environmental Impact Assessment)(Amendment) Regulations, 1999, which implements the European Council Directive on environmental impact assessment statements in Ireland, states that an EIS is also necessary for '*gas pipelines and associated installations not included in Part 1 of this schedule, where the design pressure would exceed 16 bar an the length of the new pipeline would exceed 40 km*' (SI 93, Article 24, First Schedule, Part 2).

Since the Mayo – Galway pipeline has an operating pressure of 85barg and a total length of 150 km, an EIS is required.

2.1.2 Scope of EIS

An EIS must contain the information for the time being specified under article 25 of the European Communities (Environmental Impact Assessment) Regulations, 1989, or under any provision amending or replacing the said article 25. At present, the information to be contained in an EIS is set out in the Second Schedule to the European Communities (Environmental Impact Statement) Regulations, 1999, S.I. No. 93 of 1999.

The main categories of information which, must be contained in an EIS under these regulations are:

- Description of the project;
- Description of the existing environment (baseline study);
- Impact of the project on the existing environment;
- Mitigation measures; and,
- A non-technical summary.

The Submitted EIS contains these categories of information. The level of detail provided in data and descriptions require further elaboration on some aspects. Below, the individual comments have been summarised.

Safety and risk management
Aspects of safety and risk require further elaboration in the Main Report or the Appendices, particularly in light of the relevance of this issue in the perspective of nearby residents.

- The specific paragraph on Risk assessment/pipeline safety (para 7.5) is considered very brief and general. It makes reference to IS 328. For readers not familiar with this guideline it would be useful to elaborate on what type of activities are undertaken and what emissions are expected;
- No risk assessment of pipeline failure is specified. No reference is made to (the risk of) potentially catastrophic events or worst-case scenarios;
- The reference to liaison and emergency procedures is very general and does not provide any clear indications for residents;
- Para 18.7.4 on air emissions is considered very brief and general: no specific reference is made to (nature and quantity of) emissions during maintenance or unforeseen events;
- Para 5.3.1 states that 'the outlet valve may be closed for emergency reasons': no specification is given of the type of emergency reasons and the likely frequency.

In general, it is felt that experiences and practices in other (existing) pipeline projects, could have been used in the EIS as a useful reference.

The Non-Technical Summary provides very little information on safety and risk. Since this subject will probably be one of the major areas of interest for the average non-technical reader, it is strongly recommended to amend the summary in this regard.

Difficulties encountered in the Study (para 2.7)
Due to Food and Mouth Precautions assessment of some of the re-routed areas and AGI sites was postponed and detailed studies of mammal habitats were deferred. The submitted EIS is incomplete on this point. It is recommended to submit additional information in an EIS Addendum Report.

Climate
No reference is made to the existing climate, potential impacts and mitigation measures. Information should be contained in the EIS.

Human Beings
The analysis of the existing environment, the impact of the proposed development and the mitigation measures with respect to Human Beings is fragmented throughout the EIS. This does not facilitate an easy understanding of the overall effects. It is recommended to elaborate the Non-Technical Summary with a specific paragraph on Human Beings.

Waste
No specific section/paragraph is included on management of waste that is generated during construction, commissioning or operation of the pipeline. Information on expected type and quantities of waste should be contained in the EIS.

Consultation (page 3 of 15 in Non-Technical Summary and para 2.4 in Main Report)

- No reference is made to consultations with An Taisce, The Irish Wildlife Trust and the Irish Farmers Association. These organisations are considered crucial in the consultation process.
- No reference is made to the (main) points raised by the public during the Public Exhibitions.

Alternatives considered and routing of the pipeline (para 4.2 – 4.4)
The description of the route selection and the alternatives considered is generally concise and clear. However, the hierarchy of constraints (para 4.4) requires some clarification:

- No reference is made to existing planning licenses and potential conflicts arising;
- Not clear is which position nearby residents to the pipeline take in the hierarchy.

Other remarks

6.1
It is stated that the construction methods and measures to prevent environmental impacts/risks are to be specified by the contractors at the construction stage. For the description in the EIS, this is unsatisfactory. The EIS should specify what likely environmental impacts/risks are expected during the construction phase and specify, to some detail, what mitigation measures are taken.

6.2.6
No specification is provided on the impacts of pipe storage/construction facilities, e.g. areas required and run-off management.

6.2.8.1
In general, it is felt that little information is provided on the impacts of construction in peat areas. The info on water management is insufficient.

6.2.11
Little information is provided on the impact on water quality (e.g. suspended solids).

6.5.1 and 6.5.3
The information provided on water management (discharges, influence on salmon rivers) is considered insufficient.

6.5.4 and Section 17

- No reference has been made to noise from compressors.

- 'The noise from testing operations shall not exceed a limit of 70 dB(A) at a distance of 1 m from source'. It is recommended to mention expected levels for other distances.

9.5.6.1 and 9.5.6.2

- The specification of mitigation measures is left to the contractors. However, to allow a proper evaluation of the environmental impacts/risk of the project, more specific information is required in the EIS (e.g. which techniques, which damage will be minimised).
- The meaning of 'inert plugs' is not clear.

Table 9.22
Rahasane Turlough: no elaboration is given on which 'indirect impacts' may result from the crossing of the River Dooyertha.

9.5.8
Elaboration is required on what type of mitigation measures will be taken to minimise sedimentation and pollution of watercourses.

9.5.10
Elaboration is required on the type and extent of residual impacts.

Table 10.2
The tab nble states that the recommended crossing window is usually between May-September. We wonder how realistic/practical it is that all mentioned actvities will be executed in this period.

14.6
Elaboration is required on how will be dealt with unknown sites.

17.4.3.4
Noise production from a helicopter flying at 100 feet is considerable, and may have impacts on e.g. cattle. We wonder whether a noise insurance is required.

17.5
Not clear from the text is if and to what extent noise monitoring will be carried out.

18.2.2
It is proposed to extend the title to: 'Fuels, oils and other storage'. The text should also include information on the storage of other materials (construction material, chemicals etc.).

18.6.3
Although it is understood that details have to be determined in the detail design phase, more information should be provided on criteria that will be used to specify the water management options in this phase.

3 PRELIMINARY DESIGN ASPECTS

The preliminary engineering aspects contained in the EIS have been compared with the requirements as outlined in the Department's 'Technical Guidelines for the Construction of Gas Pipelines in Ireland' (Revised Draft – Edition 19th March 2001), in particular the elements mentioned in para's 2.2 and 2.3

It can be concluded that most elements are covered satisfactory in the EIS. A few (minor) omissions do occur:

- No reference is made to the composition of the natural gas that will be transported in the pipeline;
- No indication is found in the EIS on the design life of the pipeline and associated infrastructure.

BORD GÁIS ÉIREANN

Head Office:
P.O. Box 51,
Gasworks Road,
Cork.
Telephone (021) 4534000
Fax (021) 4534001

BORD GÁIS

14th May 2001

Secretary General
Department of Public Enterprise
44, Kildare Street
Dublin 2

ATT: Ms. Orla Ryan
Gas (Regulatory) Division

Dear Sir

Re: Proposed Mayo/Galway Gas Pipeline

Further to our Section 8 application, dated 20th March 2001 in respect of the above pipeline, we are pleased to submit herewith the Environmental Impact Statement for the project.

Bord Gais Eireann and our Consultants, who prepared the EIS, are available to assist with any queries, which you may have.

Yours sincerely

B.J. Barry
Secretary

Seen by the Minister of State
28.2.02

Submission to Minister of State

Proposed Mayo/Galway
Natural Gas Transmission pipeline

Minister of State

Approved by the Minister of State in accordance with recommendation in para. 11
K. Saeb
28.2.02

1. Decision Sought

That the Minister of State grant consent to BGÉ's application under Section 8(7) of the Gas Act, 1976, as amended to construct a natural gas transmission pipeline between Bellanaboy, Co. Mayo and Craughwell, Co.Galway.

2. BGE Applications

On 20th March, 2001 BGE applied under Section 8 (7) of the Gas Act, 1976, as amended, for consent to construct a natural gas transmission pipeline from Mayo to Galway to include associated Above Ground Installations (AGIs).

BGE subsequently applied under Section 32 of the Act for acquisition orders in connection with the proposed pipeline. While the company has successfully agreed terms with some of the initially non-consenting landowners 96 applications remain outstanding.

3. Background

The purpose of the proposed pipeline is to facilitate the delivery of Corrib gas to the marketplace via the proposed Gas Pipeline to the West and the existing Bord Gáis transmission network. The existence of the pipeline will facilitate the provision of gas supplies to towns adjacent to the pipeline and will assist in encouraging further offshore exploration off the West coast.

4. The Pipeline

The circa 150 km pipeline which will be 660 mm in diameter will run from the proposed Enterprise Energy Ireland Gas Reception Terminal at Bellanaboy, Co. Mayo to link up with the Gas Pipeline to the West at Craughwell, Co. Galway. The pipeline will also involve the construction of 6 AGIs. Planning permission has been obtained for all these sites.

5. Funding

The Board of BGÉ has approved an expenditure of €174m in respect of the project. The Minister of State has given consent to BGÉ for this expenditure with the approval of the Minister of Finance.

6. Statutory Position

Section 8(7) of the Gas Act, 1976, as amended, provides for the construction of a pipeline by BGÉ with the consent of the Minister of State and with the concurrence of the Minister for Finance. The Minister of State is empowered by the Act to attach conditions to the consent.

7. Environmental Impact Statement

An Environmental Impact Statement was commissioned by BGÉ in connection with the route of the proposed pipeline. The Department engaged Tobin Environmental Services (TES) as independent consultants to evaluate whether all environmental aspects have been adequately addressed in accordance with National and EU environmental legislation. The views of the Department's Chief Technical Advisor, Dr. Tom McManus, were also sought. It was concluded that the project is not likely to have significant long term effects on the environment.

8. Consultation

The approval of the Minister for Finance has been obtained as outlined in 6 above.

Consultation has taken place with all prescribed Statutory bodies including the local authorities through whose area the pipeline will pass, the Minister for Arts, Heritage and the Islands (Dúchas) and the Office of Public Works. The Department has received comments from Dúchas. Subject to certain conditions, Dúchas have no objection to the pipeline. The Department is satisfied that there is nothing in these conditions that would place excessive burden on BGÉ or in any way delay the completion of the pipeline.

9. Persons Affected

Under Section 32 of the Gas Act, 1976, as amended, BGÉ has applied for acquisition orders to allow for the construction of the pipeline. While the company has successfully agreed terms with some of the non-consenting landowners since its application, 96 landowners along the pipeline route have not consented. This includes 5 for the acquisition of land in connection with above ground installations (AGIs) and 2 for cathodic protection equipment.

The required notices under Article 3(1)(b) of the Second Schedule of the Gas Act, 1976, as amended, were published in national and local newspapers in September of last year. 17 objections were received.

The Minister of State convened an Oral Hearing on 11th December, 2001 in Castlebar, Co. Mayo to enquire into the application to construct the pipeline and the associated applications for Section 32 Acquisition Orders, including those relating to the 17 objections.

The inspectors who conducted the Oral Hearing have advised that all relevant issues were fully addressed during the course of the hearing. The inspectors recommend that the Minister consents to the construction of the pipeline as applied for by BGÉ on 20th March, 2001, subject to their recommendation on the mitigation measures, adherence to relevant standards, receipt of necessary planning permissions and compliance with Dúchas' requirements.

The inspectors further recommend that the Minister confirms all consents for acquisitions sought.

10. Pipeline Engineering Design

Wilcock Consulting was appointed by this Department to carry out an audit of the pipeline design. Wilcock's report considers the overall design to be acceptable for approval.

11. Recommendation

It is recommended that the consent of the Minister of State be given pursuant to Section 8(7) of the Gas Act, 1976, as amended, for the construction of the Mayo/Galway natural gas transmission pipeline.

In the event of the Minister of State approving the issuing of the above consent, the following draft Acquisition Orders are submitted for signature and confirmation of the deviation limits:

Acquisition Orders for Rights over land for pipeline laying

MG.04,MG.05,MG.10,MG.10A,MG.13,MG.21,MG.22,MG.23,MG.26A, MG.29A,MG.33,MG.38,MG.138A,MG.139,MG.142,MG.144, MG.146,MG.147,MG.166,MG.179,MG.179B,MG.181A,MG.184,MG.198, MG.213,MG.214,MG.217,MG.227,MG.227B,MG.228,MG.233,MG.234A, MG.235,MG.235A,MG.242B,MG.243,MG.244,MG272,MG.275,MG.280, MG.281A,MG.281B,MG.281C,MG.284,MG.298,MG.304,MG.305,MG.310 ,MG.313,MG.314,MG.321,MG.339,MG.343,MG.343A,MG.343B,MG.347, MG.350A,MG.363,MG.388A,MG.412,MG.476,MG.477,MG.479,MG.489, MG.494,MG.522A,MG.542,MG.544,MG.545,MG.547B,MG.548,MG.551, MG.552,MG.555,MG.557,MG.573A,MG.579,MG.582,MG.587A,MG.593, MG.599,MG.602,MG.615,MG.616,MG.617,MG.624,MG.626,MG.627,MG. 634.

Acquisition Orders for Above Ground Installations

MG.AGI.02,MG.AGI.03,MG.AGI.04,MG.AGI.05,MG.AGI.06.

Acquistion Orders for Cathodic Protection Equipment

MG.148A,G.288A.

Total No. of CAOs. 96

Gas (Regulatory) Division
22 February, 2002

Mr. Crosbie

Mr. O' Neill 22/2/02

Private Secretary, K.S. 28/2/02

Please see across submission to the Minister of State concerning Bord Gais Eireann's application to construct a Natural Gas Transmission Pipeline from Mayo to Galway.

In the event of Ministerial consent the relevant Compulsory Acquisition Orders are attached for Minister of State's signature and confirmation of deviation limits.

Orla Ryan,
Gas (Regulatory) Division

22 February, 2002

An Roinn Fiontar Poiblí,
44 Sráid Chill Dara,
Baile Átha Cliath 2..

Department of Public Enterprise,
44 Kildare Street,
Dublin 2.

29 August 2001.

Mr. Brendan Mangan,
Bord Gais Eireann,
P.O. Box 51,
Gas Works Road,
Cork.

Dear Brendan,

Mayo – Galway Pipeline.

I refer to the additional information of 7 August 2001 submitted by Arup Consulting Engineers in connection with the EIS Evaluation.

I now enclose a copy of the response from TES Consulting Engineers in this regard.

The relevant details as outlined by TES should be included in the Addendum Report for the Mayo-Galway EIS.

You will note that TES suggest dealing with the waste issue in a similar format to that employed by M.C. O'Sullivan in the Addendum Report for the Second Interconnector pipeline; the relevant extract is attached.

This Division has consulted Duchas with regard to Arup's response on additional field studies as highlighted by TES and we are awaiting a response. In the meantime you might ensure that any necessary liaison between Arup and Duchas is progressing as sign off of this EIS cannot be achieved until this matter is resolved.

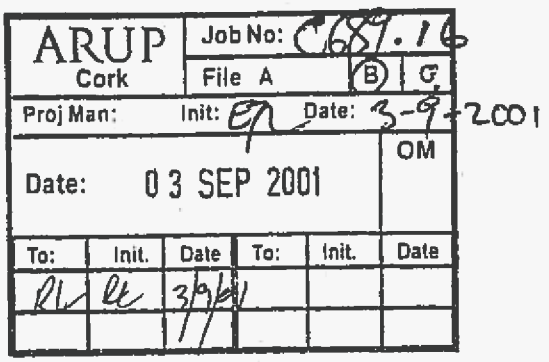
I would appreciate if you would arrange to forward the revised addendum report to this division as soon as possible.

Yours sincerely,

M Teahan.

Michael Teahan,
Gas (Regulatory) Division.

Tel: 01 6041622
Fax: 01 6041016
Email: MichaelTeahan@dpe.ie



TES
CONSULTING ENGINEERS
Unit 4B/5, Blanchardstown Corporate Park, Blanchardstown, Dublin 15, Republic of Ireland
Telephone: +353-1-8030402 / 6606471 Fax: +353-1-8030410 / 6601702 E-mail: tes@iol.ie

FACSIMILE COVER SHEET

TO:	Department of Public Enterprise- Gas (Regulatory) Division
ATTENTION:	Mr. Michael Teahan
TEL NO:	
FAX NO:	01-6041016
FROM:	Arjen Brinkmann
RE:	Letter from Arup Consulting Engineers on Mayo Galway Gas Pipeline
DATE:	27-08-2001
PAGES:	6

Dear Mr. Teahan,

We refer to your letter dated 17 August 2001, and the attached letter from Arup Consulting Engineers to Bord Gáis Éireann, dated 7 August 2001, both concerning the EIS for the May Galway Gas Pipeline.

In their letter, Arup Consulting Engineers respond to TES's comments on the Additional Information Report for the Mayo Galway Gas Pipeline EIS. TES have the following comments/suggestions on Arup's responses:

Safety and risk management
The explanation of the word 'asphyxiant' is considered satisfactory, and should be included (e.g. in paragraph 2.2) in the Additional Information Report.

Difficulties encountered during the study
The additional information provided on consultation with Dúchas is considered satisfactory. This section should be included in the Additional Information Report.

Waste
In the Addendum Report for the Second Interconnector Gas Pipeline (Irish Landfall Section and Gormanston to Ballough Pipeline), information has been provided on types and quantities waste generated during construction of the pipeline. The relevant paragraphs have been attached. This information, together with the additional information provided in the letter, may be used to specify the section on waste in the Additional Information Report.

Consultation
The information provided is considered satisfactory and should be included in the Additional Information Report.

If you have any queries regarding the above or require any further clarification, please do not hesitate to contact me at the above number.

Yours sincerely,

Arjed Brinkmann
Project Manager

4.3 DESCRIPTION OF PRELIMINARY DESIGN ASPECTS AND PROCEDURES

The gas composition is given in appendix A and the length of pipeline covered by the addendum report of Irish Landfall is given in appendix C.

It is confirmed that the standard OS-F101 applies to the whole of the section 3 of the EIS.

4.4 WASTE MANAGEMENT

Irish Landfall EIS

Section 9 of the EIS includes waste management.

Typical waste would include:

- Sheet piling offcuts (2 tons)
- Canteen and office waste (4 tons)
- Unsuitable ground materials (100 tons – very rough estimate)
- Temporary concrete foundations (50 tons)
- Sewage waste ($20m^3$)
- Welding waste, rods, disks, etc. (500kg)
- Pipe end caps (1 ton)
- Road stones and geotextiles (1600 tons)

4.5 MISCELLANEOUS

4.5.1 Foreshores Act

An application is being made to the Department of the Marine and Natural Resources for a foreshore license under the Foreshores Act.

4.5.2 Terminology

Gormanston AGI and Gormanston PRS are simplified designations that refer to the same infrastructure: Gormanston Reception Terminal.

4.5.3 Restrictions due to the vicinity of Gormanston military camp

See Para 6.1. The AGI was moved for safety issues relating to the proximity to the Department of Defence (DOD) military airfield. There were also concerns that the height of a possible AGI building, construction crane would exceed the 10.67m height restriction imposed by the DOD as a possible hazard to aircraft using the aerodrome. The height restrictions have also been advised

6.5 DESCRIPTION OF PRELIMINARY DESIGN ASPECTS AND PROCEDURES

Table 2 indicates the pipeline parameters that have been established Type S area for the ɔrmanston to Ballough Pipeline.

Table 2: Pipeline Specifications[3]

Nominal Diameter (mm)	Design Factor[1]	Grade[2]	Wall Thickness (mm)
914	0.5	X65	19.1

Note: -
Design Factor as per IS328:2000
Steel grade as per API 5L
The table updates information shown on EIS Volume 2 Table 6.1

The pipeline will have an epoxy coated internal lining to prevent corrosion and improve the flow characteristics of the natural gas. Externally, the pipe will be coated with a 3-layer polyethylene coating. This will provide corrosion protection in conjunction with cathodic protection. A higher density polyethylene coating will be used at crossings. Field joints and repairs will be made using a compatible system.

Coating inspection will include visual examination, adhesion tests, thickness measurements and holiday detection, (external coating fault detection by means of an electrical device that produces an observable electrical discharge at faults).

Gormanston to Ballough EIS.

6.6 WASTE MANAGEMENT

The management of waste generated during the Construction Phase of the project will be the responsibility of the Construction Contractor. The Contractor will be bound by the requirements of the Waste Management Act, 1996. In addition, and in accordance with the Project Specification, a Waste Management Plan for the project will be prepared. Such a plan will seek to adhere to the hierarchy of waste options giving waste prevention and minimisation priority issue followed by waste reuse and recycling. Furthermore, disposal of waste will require a collection permit from each local authority and BGE/Contractor(s) will be responsible for making all appropriate applications. Waste expected following the construction and commissioning of the pipeline is in the following categories:

Pipe cut-offs (unused pieces of pipe)
Water used for hydrostatic testing.
Debris cleaned from within the pipeline prior to commissioning.
Surplus soil that has been removed and is unsuitable for reuse in reinstatement.
Hedging and trees removed during site clearance.
Waste fuels and oils associated with the construction machinery.
Consumables e.g. welding rods, bentonite, cutting discs etc.
General site office waste.

No significant waste will be generated during the operation of the pipeline.

Pipe cut-offs
Waste ends of pipe will be stored on site and returned to BGE for reuse or appropriate disposal. To allow for this expected waste, additional pipe is ordered from the steel mill at the outset. Typically this can be in the order of 2% over and above the total length of the pipeline.

Water used for hydrostatic testing
The hydrostatic testing of the pipeline will require up to 8,300m^3 of water. On completion of the testing the water will be discharged to a suitable watercourse under licence from the appropriate local authority. In advance of discharge the chemical and physical properties of the water will be sampled and analysed to ensure that disposal does not contaminate the receiving environment. Discharge rates will be controlled such that erosion will not occur in the area where discharge takes place. Selection of discharge sites will ensure that diseases are not spread and that the genetic integrity/biodiversity of the receiving environment is not adversely impacted.

Debris from pipe cleaning
This will be appropriately stored and disposed of in a licensed landfill site. The anticipated quantities of this waste will be very small.

Surplus Excavated Soil
The Waste Management Act 1996 (No. 10 of 1996), Second Schedule Part I, defines hazardous waste. This Schedule classes "Soil, sand or clay (including dredging spoils)" as Category II Wastes only if they have the properties outlined in Part II of the Second Schedule. None of the materials to be excavated on the project exhibit hazardous properties. However, the developer should adhere to the requirements of the Specification with regard to the disposal/reuse of excavated soils. These requirements include the development of a Waste Management Plan. It should be stated that the pipeline route does not pass through any hazardous/contaminated areas. Therefore, the disposal of soil is not expected to have a significant impact on the environment.

In general the quantity of surplus excavated material is equal to the volume of soil displaced by the pipe and bedding material, with the exception of unusable excavated material such as rock. Therefore, typically there will be approximately 0.5m^3 of surplus excavated material per metre run of pipe. This material will be spread thinly over the entire working width prior to topsoil spreading, thus creating no residue for disposal.

Hedgerows
Disposal of hedgerows that have been removed during site clearance will be managed by way of mulching or cutting up for use as a fuel as appropriate to the quantity and type of wood or other

vegetation at any particular location. Trees shall be removed from the working strip after consultation between BGE and the landowner. All saleable timber shall remain the property of the timber owner and shall be cut and disposed of in accordance with the reasonable requirements of the timber owner. It should be noted that under Section 27 of the Gas Act, 1976, Bord Gáis may *'alter, repair, remove or demolish any fence, hedge, tree or wall'*, thereby eliminating the necessity for a tree felling licence.

Waste Fuels
Waste fuels and lubricants etc. will be temporarily stored on site in a watertight bung and residues will be returned to suppliers for special treatment.

Consumables
These will be stored on site in appropriate containers and disposed of to a licensed landfill.

General Site Office Waste
Such waste will be source segregated into packaging and organics and recycled or composted respectively and all residues disposed to licensed landfills.

6.7 MISCELLANEOUS

6.7.1 Volume 2 Section 2.4 (Wildlife Amendment Act)

The Wildlife (Amendment) Act, 2000 was passed into Irish law on the 18th December 2000, however, the first section of the Act only came into effect in March 2001. Although regard was had to both the Wildlife Amendment Bill, 1999 and the Wildlife (Amendment) Act, 2000 throughout the EIA, reference was only made to the Bill in the EIS as it was completed prior to February 2001.

6.7.2 Volume 2 Section 3.1.2 (Scoping Report)

The Scoping Report described the background to the project and outlined why an EIS was required for such a development. It summarised the main issues and impacts to be addressed within the EIS and identified alternatives to the development. One of the main objectives of the Scoping Report was to provide local authorities and other organisations with an opportunity to identify any issues pertaining to the proposed scheme that they felt should be included in the EIS. Consultation is considered a crucial component of the scoping process as this facilitates valuable feedback on the project's likely impacts. All comments received were taken into consideration in the EIS.

A single scoping report was produced for both the Gormanston AGI and Gormanston to Ballough Pipeline elements of the 2nd Interconnector project. However, both developments were discussed individually within the report.

E. Lynch (ARUPS).
cc. B. Mangan

An Roinn Fiontar Poiblí,
44 Sráid Chill Dara,
Baile Átha Cliath 2.

Department of Public Enterprise,
44 Kildare Street,
Dublin 2.

Please process
31/07/01

20 July, 2001

Mr. Michael Snee
Bord Gais Eireann
PO Box 51
Gasworks Road
Cork.

Dear Michael,

I refer to the additional information issued by Mr. Brendan Mangan on 14 June, 2001, concerning the EIS for the Mayo to Galway gas pipeline. TES consulting engineers have examined the document and they have made a number of additional comments.

I enclose a copy of their comments for your consideration. In particular, please note the recommendations made by TES concerning the deferral of habitat studies in connection with re-routed areas of the pipeline.

I would be grateful if you could address the issues raised by TES and revert to me at the earliest possible juncture. In the meantime, if you have any queries please do not hesitate to contact me at the number listed below.

Yours sincerely

Sylvia Shannon

Sylvia Shannon
Gas (Regulatory) Division

Telephone: (01) 670 7444 Lo-Call 1890 443311 Direct Dial: (01) 604_____ Fax: (01) 677 3169 http://www.dpe.ie

TES
CONSULTING ENGINEERS

Unit 4B
Blanchardstown Corporate Park
Dublin 15
Telephone 01-660 6471
Fax 01-660 1702
E-mail administration@tesltd.ie
www.tesltd.ie

Ms Orla Ryan
Department of Public Enterprise
Gas (Regulatory) Division
44 Kildare Street
Dublin 2

17 July, 2001

RE: Evaluation of Additional Information Report for the EIS of the Mayo to Galway Gas Pipeline

Dear Ms Ryan,

Please find below our evaluation of the Additional Information Report for the EIS of the Mayo to Galway Gas Pipeline (Draft 1 – July 2001), as received by TES on 7 July 2001.

In the EIS Evaluation Report for the Mayo to Galway Gas Pipeline, TES Consulting Engineers concluded that further elaboration was required on some aspects. The main aspects were:

- Safety and risk management;
- Difficulties encountered during the Study;
- Climate;
- Human Beings;
- Waste;
- Consultation;
- Alternatives considered and routing of the pipeline.

All these aspects have been addressed in the Additional Information Report. The evaluation of the Additional Information Report per aspect is detailed below.

Safety and risk management
The additional information contained in the Report is considered satisfactory. Explanation of the technical term 'asphyxiant' (para 2.2) is required.

Difficulties encountered during the Study
Due to Food and Mouth Precautions assessment of some of the re-routed areas and AGI sites was postponed and detailed studies of mammal habitats were deferred. The EIS is therefore incomplete on this point. In the EIS Evaluation Report, TES suggested to include additional information in the Additional Information Report.

The Additional Information Report states that it is 'not intended to delay the EIS process until the surveys have been completed and additional visits have been taken place. The reports of the surveys will be submitted to Dúchas and copies will be made available to interested parties on request.' No further additional information is provided.

This statement is considered insufficient. Additional information is required to allow a complete and integrated evaluation of the environmental impacts of the project. However, it is recognised that if this information becomes available at a much later stage (months later) and is then formally set out in public as an Addendum Report, the project will be seriously delayed.

It is proposed that before submitting the EIS, Bord Gais Eireann seek formal agreement with Dúchas on a procedure to allow a full evaluation of the above mentioned issues when the required information has become available. A written confirmation by Dúchas of this agreed procedure may be included in the Additional Information Report.

Besides, elaboration is required on what procedures will be followed if the additional surveys provide results which have (serious) consequences on the (potential) environmental impact and eventual mitigation measures (e.g. re-routing) of the pipeline. The proposed procedures should be included in the Additional Information Report.

Climate
The additional information contained in the Report is considered satisfactory.

Human Beings
The additional information contained in the Report is considered satisfactory.

Waste
The Report contains no additional information on expected quantities of waste. It is felt that some consideration should be given to expected quantities or, alternatively, to difficulties in estimating waste quantities in this stage of the project.

Consultation
No relevant additional information is contained in the Report. Not clear is whether An Taisce, The Irish Wildlife Trust and the Irish Farmers Association have been consulted.

Alternatives considered and routing of the pipeline
The additional information contained in the Report is considered satisfactory.

ES
CONSULTING ENGINEERS

If you have any queries or require any further information, please do not hesitate to contact me at the above address.

Yours sincerely,

Arjen Brinkmann
Project Manager