



Corrib Onshore Pipeline
**Environmental
Impact Statement**

Volume 1 - Environmental Impact Statement



RPS

FEBRUARY 2009

PREFACE

The Environmental Impact Statement (EIS) for the Corrib Onshore Pipeline consists of three volumes as follows:

Volume 1:

This volume addresses the likely significant impacts of the proposed Corrib Onshore Pipeline, provides information on the design and construction methods as well as the alternatives considered. A Preamble outlining the background and history to the Corrib Gas Field Development is also provided along with a Non-Technical EIS Summary.

Volume 2:

This volume includes drawings and supplementary specialist technical and environmental information to Volume 1 (see List of Technical Appendices below).

Volume 3:

This volume addresses the likely significant impacts of the deposition of approximately 75,000m³ of surplus peat at the Srahmore Peat Deposition Site. This surplus peat will be removed during the construction of the Corrib Onshore Pipeline. This volume also includes a Non-Technical EIS Summary, technical appendices and drawings.

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PREAMBLE

INTRODUCTION

Shell E&P Ireland Ltd. (SEPIL) is developing the Corrib Gas Field off the coast of County Mayo. The development of the Corrib Gas Field represents the largest natural gas development in Ireland for over 30 years.

The Corrib Gas Field Development is divided into five distinct but inter-related and inter-dependent elements as follows:

1. Offshore seabed installation (subsea wellheads and manifold at the Gas Field);
2. Offshore gas pipeline (between wellheads and landfall);
3. Onshore gas pipeline (between landfall and gas terminal at Béal an Átha Buí (Bellanaboy));
4. Bellanaboy Bridge Gas Terminal; and
5. Onshore 150km Mayo to Galway pipeline.

All elements of the proposed development have received regulatory approval.

Following local concerns raised about the proximity of the approved pipeline to houses between the landfall and the Gas Terminal, and the subsequent reviews undertaken on behalf of the Minister for Communications, Energy and Natural Resources, SEPIL undertook to modify the route of the onshore pipeline in the vicinity of Ros Dumhach (Rosport).

The modification of the onshore section of the Corrib Gas Pipeline affects a number of the regulatory consents already acquired, and has necessitated the preparation of new applications to the relevant Statutory Authorities, including a new Environmental Impact Statement (EIS) for the onshore pipeline and other documentation as outlined below:

- This Preamble, which is common to the Corrib Onshore Pipeline EIS and the Supplementary Update Report to the 2001 Corrib Field Development Offshore Field to Terminal EIS (the 'Offshore EIS'), outlines the background to the Corrib project and presents a profile of the developer, SEPIL. In addition, it summarises the regulatory approvals required for the proposed pipeline development and outlines the consents processes associated with these. A brief overview of the consultation process that has been carried out, as well as a summary of SEPIL's environmental, health and safety policies have also been provided.
- The 2001 Offshore EIS (prepared by RSK Environment Ltd) described the pipeline system from the field to the Terminal, with Section 19 covering the onshore pipeline. The new Corrib Onshore Pipeline EIS (prepared by RPS) for the development of the onshore pipeline between the landfall and the Terminal replaces Section 19 of the 2001 Offshore EIS.
- As the current consent for the pipeline (Section 40 under the Gas Act) applies to the pipeline in its entirety (both onshore and offshore), a supplementary update report in respect of the offshore section of the pipeline has also been prepared (by RSK Environment Ltd) for the 2001 Offshore EIS.

BACKGROUND

The Corrib Gas Field is a small to medium sized offshore gas field, estimated to contain approximately 1 trillion cubic feet (tcf) of gas. It is equivalent to approximately two thirds the amount of gas originally contained in the Kinsale Head Gas Field. It is currently predicted that the Corrib Gas Field will supply up to 60% of Ireland's gas needs during peak supply and it is estimated to have a field life of between

15 and 20 years. The gas in the Corrib Gas Field is a pure form of natural gas, consisting of approximately 97% methane/ethane and small amounts of water and hydrocarbon condensate.

The Corrib Gas Field will be developed using subsea technology tied back to an onshore gas terminal. This means that once the wells are drilled, there will be no need for a permanent offshore platform structure, as the wells will be remotely controlled from land. This is best practice for a gas field of this type and size and is similar in design to some of the most modern gas field developments such as the Ormen Lange Field, Norway, the Snøhvit Field (Liquefied Natural Gas (LNG)), Norway, the Casino Field, south east Australia and the Scarab Saffron Gas Fields, East Mediterranean, Egypt.

THE DEVELOPER

Shell is a global group of energy and petrochemical companies, operating in more than 140 countries and territories. The company explores for, produces and trades in a range of energy resources.

Shell is the largest international gas producer in Western Europe and one of the largest in the world. Currently, the company has interests in oil and gas exploration and production ventures in nearly 40 countries, in which it employs approximately 19,000 staff (not including contractors), and operates more than 100 gas plants.

Shell E&P Ireland Limited (SEPIL) is part of Shell's European Exploration & Production organisation, which has extensive experience in operating gas plants and gas pipelines as well as subsea developments and offshore oil and gas fields in Europe since the 1960's (see Appendix D).

The Corrib Gas Field is being developed by three co-venture partners. These are SEPIL (the Operator) (45%), Statoil Exploration (Ireland) Limited (36.5%) and Marathon International Petroleum Hibernia Limited (18.5%).

NEED FOR THE DEVELOPMENT

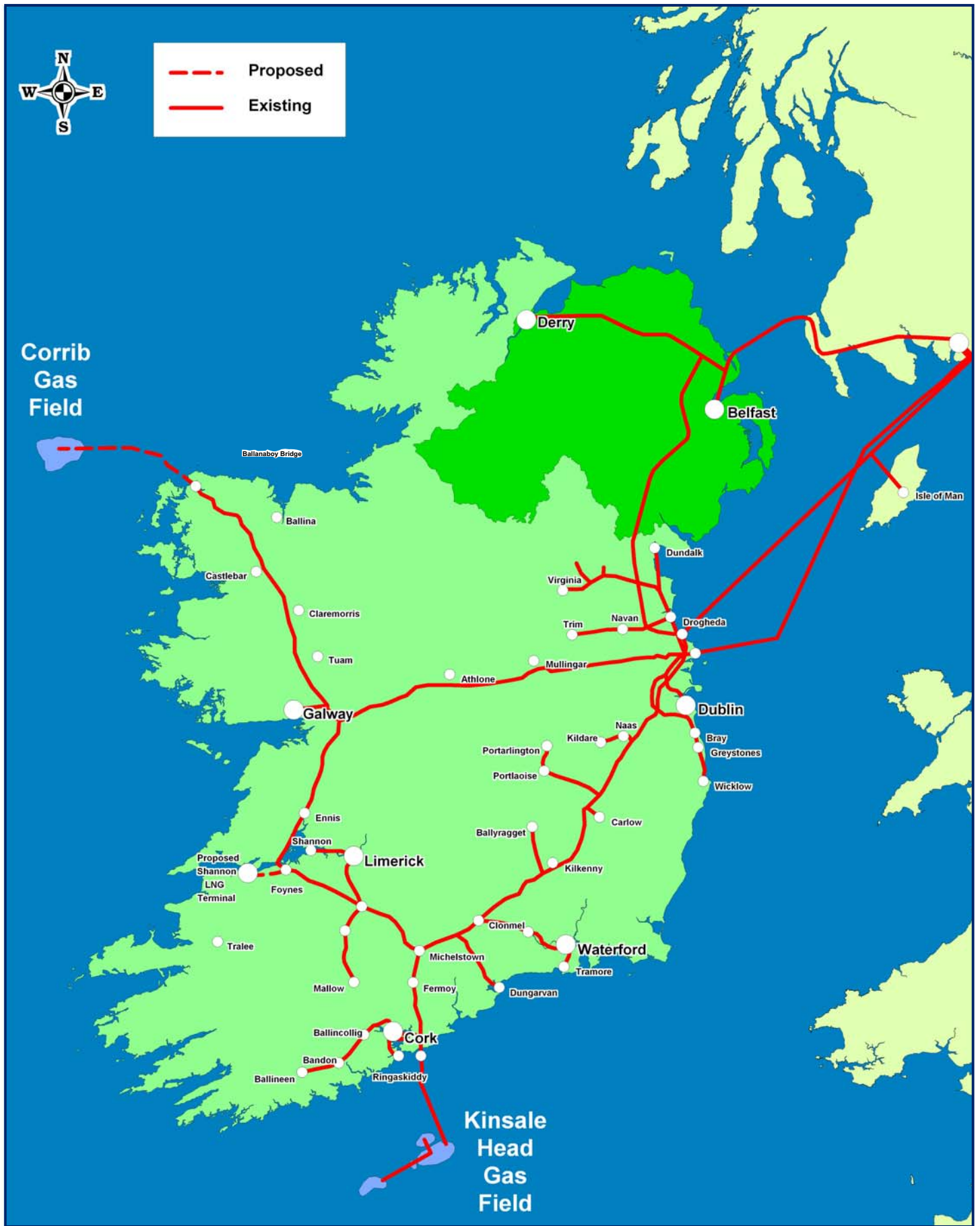
Since the application was submitted in 2001 to the then Department of the Marine & Natural Resources for approval of the Plan of Development for the Corrib Field, gas consumption in Ireland has continued to increase.

This rising demand for energy has outstripped Ireland's domestic production and infrastructure capacity. Consequently, Ireland has required additional imports of gas from abroad since the mid 1990's (a second gas inter-connector pipeline was constructed in 2002) and a new 'East-West electrical inter-connector' is also planned to facilitate greater exchange of electricity between Ireland and the UK (in addition to the existing Moyle (North-South) Inter-connector with Northern Ireland and electrical connections between Scotland and Northern Ireland).

This, combined with Ireland's peripheral location in Europe and its small market scale, leaves the country vulnerable to supply disruption and imported price volatility.

In 1999 Bord Gáis Éireann (BGE) commissioned consultants (Sofregaz, MCOS (now RPS) and JP Kenny) to evaluate the required strategic investment in gas transmission infrastructure throughout Ireland until the year 2025. The resulting expansion of the Irish Natural Gas Transmission Network has included:

- Gas Pipeline to the West (Dublin – Galway – Limerick), constructed 2002;
- Second Gas Interconnector (Ireland – Scotland), constructed 2002;
- South – North Pipeline (Dublin – Belfast), constructed 2006; and
- Mayo – Galway Pipeline, constructed 2005 – 2006 specifically for Corrib gas.



Gas Transmission Network in Ireland

Figure 1

CORRIB ONSHORE PIPELINE

File Ref: MDR0470GrEIS040 RevA02
 Date: February 2009



BGE also constructed the Belfast-Derry pipeline in Northern Ireland in 2005. The full extent of the Irish Natural Gas Network including each of these recent developments and the proposed Corrib Pipeline is shown on Figure 1 overleaf.

Declining gas reserves in the Kinsale Head and Ballycotton gas fields, and the lower-than-expected contributions from the Seven Heads field, means that indigenous gas forms a decreasing proportion of the gas used in the Irish market, supplying less than 10% of its demand from domestic sources. Furthermore, the UK, from where Ireland imports over 80% of its gas, has itself become a net importer of gas. The development of Corrib will facilitate greater indigenous security of gas supply that will be available throughout the entire network. It has already stimulated expansion of the onshore gas transmission system, which in turn will result in increased possibilities for economic growth in the Mayo / Galway Region.

Bord Gáis Éireann will spend €40 million over three years on the Gaswest Project, under which it is planned to expand the natural gas network from the Mayo-Galway Gas Pipeline. Eleven towns in Co. Mayo and Co. Galway have been identified for this investment. The towns in Co. Mayo that are included in the Gaswest Project are Ballina, Ballinrobe, Ballyhaunis, Castlebar, Claremorris, Crossmolina, Knock and Westport. Progress for this expansion is already well underway with spur lines to Castlebar and Westport completed and the remaining towns scheduled for completion in 2009. Ireland is predicted to experience population and economic growth over the lifetime of the Corrib Gas project, accompanied by expectations for a higher standard of living. Electricity generation and transport are the key sectors influencing energy demand in Ireland. In 2008 annual growth to 2020 was forecasted to be approximately 2-3%.

Gas is also predicted to become a greater provider of energy in Ireland due to its positive environmental profile compared with traditional sources and the Government's Kyoto Protocol commitments, which include targets for reduction of greenhouse gas emissions to no more than 13% above 1990 levels in 2008-2012.

EXISTING CONSENTS

The Corrib Gas Field Development has been subject to a long and complex regulatory approval process. The statutory approvals / licences / consents that are associated with the development and that have been granted are listed in Table 1 below.

Table 1: Existing Consents and Approvals for the Corrib Gas Field Development.

Licence/Consent	Status
Petroleum Lease by the Minister for the Marine and Natural Resources.	Granted 2001
Plan of Development for the Corrib Field by the Minister for the Marine and Natural Resources.	Approved 2002
Consent under Continental Shelf Act 1968 from the Minister for the Marine and Natural Resources.	Granted 2002
Foreshore Licence for pipeline, umbilical and outfall from the Minister for the Marine and Natural Resources.	Granted 2002
Consent to Construct a Pipeline (Section 40 of the Gas Act) from the Minister for the Marine and Natural Resources.	Granted 2002
Planning Permission – Bellanaboy Bridge Gas Terminal and associated peat deposition site from An Bord Pleanála.	Granted 2004
Waste licence from EPA for peat deposition at An Srath Mór (Srahmore) (Bord na Móna).	Granted 2004
Integrated Pollution Prevention and Control Licence from the Environmental Protection Agency for Bellanaboy Bridge Gas Terminal.	Granted 2007

PROJECT HISTORY

Table 2 provides an overview of the planning and development history of the Corrib Gas Field Development and rationale for the proposed modification of the route of the onshore section of the pipeline.

Table 2: Corrib Gas Field Development - Project History.

Year	Event
1996	The Corrib Gas Field was discovered by Enterprise Oil in 1996.
2000	Enterprise Energy Ireland Limited starts public and statutory consultation on the development of the Corrib Gas Field with associated onshore facilities.
2001	Application for planning permission for Bellanaboy Bridge Gas Terminal with associated Environmental Impact Statement (EIS) lodged with Mayo County Council in April. Planning permission received August 2001 – appealed to An Bord Pleanála.
	An application for approval of the Corrib Field Plan of Development submitted to Department of Marine and Natural Resources in November.
	Applications for Consent to Construct a Pipeline (Section 40 of the Gas Act) and a Foreshore Licence accompanied by the Offshore EIS and the Bellanaboy Bridge Gas Terminal EIS are also submitted.
2002	An Bord Pleanála conducts Oral Hearing in relation to Bellanaboy Bridge Gas Terminal planning application in February.
	The Plan of Development for the Corrib Gas Field is approved and the pipeline and associated works receive Ministerial Consent under the Gas Act in April.
	Foreshore Licence for the pipeline is granted in May.
	Work commences under Pipeline Consent and Foreshore Licence on pipeline landfall and excavation of inshore trench. Activities stopped and landfall reinstated when it becomes obvious that decision on planning application for Bellanaboy Bridge Gas Terminal will be significantly delayed.
	Enterprise Energy Ireland Ltd acquired by Shell in May.
	Second Oral Hearing into Bellanaboy Bridge Gas Terminal planning application held by An Bord Pleanála (November/December).
2003	An Bord Pleanála refuses planning permissions for Bellanaboy Bridge Gas Terminal for reasons related to environmental and safety risks associated with the proposed on-site storage of peat proposed to be excavated from the terminal footprint, April.
	New planning application and EIS for Bellanaboy Bridge Gas Terminal and associated peat deposition site at An Srath Mór (Srahmore) lodged with Mayo County Council, December
2004	Planning Permission granted by An Bord Pleanála October 2004. Construction of terminal at Béal an Átha Buí (Bellanaboy) site commences, December.
	Integrated Pollution Prevention and Control (IPPC) Licence application and EIS lodged with Environmental Protection Agency (EPA), December.
2005	Work continues on Bellanaboy Bridge Gas Terminal site and peat deposition site. Haulage of peat from Béal an Átha Buí (Bellanaboy) to An Srath Mór (Srahmore) commences under EPA Waste Licence, April.
	Construction commences on Mayo-Galway pipeline.
	Work commences on preparation of onshore pipeline. Site re-established at landfall, and excavation of inshore trench completed in preparation for offshore pipelay.
	Concerns raised by local community in relation to safety of onshore pipeline and proximity to housing.
	After opposition to onshore pipeline results in the imprisonment of five men for contempt of court, all onshore construction work associated with the Corrib development is halted in July. Offshore installation work ongoing.

	<p>Technical Advisory Group (TAG) is established by Minister for Communications, Marine and Natural Resources in August to deal with two distinct elements of the Corrib project; the first to administer a thorough and independent Safety Review of the onshore section of the Corrib Gas Pipeline, the second to put in place and administer an upgraded monitoring and inspection regime for the pipeline. A specialist consultant Advantica is appointed to carry out the safety review.</p> <p>Minister appoints Peter Cassells in November as independent mediator (on the Corrib Gas Pipeline) between SEPIL, the 'Rossport 5' (the five men jailed) and other members of the public. Remit includes arrangements for the mediation to assist the parties to resolve the differences between them or, in the absence of agreement, to identify a way forward.</p>
2006	<p>Advantica's final report "Independent Safety Review of the onshore, upstream section of the Corrib Gas Pipeline" is published in May (dated 27th January). SEPIL commits to implementation of recommendations (see further details below).</p> <p>Peter Cassells' report on mediation process is published 28th July. SEPIL welcomes report, and commits to implement recommendation to modify route in vicinity of Ros Dumhach (Rossport).</p> <p>Offshore subsea installation work at the Corrib Field continues, and construction continues on Mayo Galway pipeline.</p> <p>Bellanaboy Bridge Gas Terminal construction recommences, October 2006.</p> <p>Construction of the 150km Mayo-Galway Gas pipeline completed.</p>
2007	<p>RPS appointed to assist in selection of a modified route of onshore section of Corrib Pipeline, as per Advantica and Cassells recommendations.</p> <p>Peat haulage from Béal an Átha Buí (Bellanaboy) to An Srath Mór (Srahmore) re-commences under EPA Waste Licence in April and is completed in June. Earthworks activity is completed and full construction commences late summer.</p> <p>EPA issues Proposed Determination of IPPC Licence Bellanaboy Bridge Gas Terminal on 25th January. Decision is appealed, Oral Hearing conducted April/May and Final Determination issued 12th November, granting IPPC licence.</p> <p>Offshore installation work continues at Corrib Field April - December.</p>
2008	<p>In May 2008, applications for Approval of the proposed modification of the onshore gas pipeline, and associated infrastructure, were submitted to An Bord Pleanála under the Planning and Development Act 2000 (as inserted by the Planning and Development (Strategic Infrastructure) Act 2006), and to the Department of Communications, Energy and Natural Resources under Section 40 of the Gas Act (as amended).</p> <p>The Offshore Pipelay Programme commenced in July 2008, but due to unsuitable weather conditions and damage to the pipelay vessel Solitare, installation of the offshore pipeline was suspended in October 2008.</p> <p>In August 2008, the Erris Inshore Fishermens Association (EIFA) and the Corrib Gas Partners reached an agreement on a compensation framework for disturbance that would be caused to its members normal fishing activities during the 2008 Offshore Pipelay Programme. SEPIL also offered to use an alternative method of discharge for treated produced water from the Terminal.</p> <p>Establishment of a Community Forum for Development in north-west Mayo (in November), which will focus on economic development in the region but will also address specific issues about the Corrib project, including compliance with permits and licences, safety, technology and environmental management.</p> <p>By the end of 2008, the Bellanaboy Bridge Gas Terminal was approximately 70% complete.</p> <p>Five of the Corrib Gas wells were completed at the end of 2008.</p> <p>The application made under the Strategic Infrastructure Act and the associated CAO application under the Gas Act made to An Bord Pleanála were withdrawn in December 2008, prior to submission of new applications to which this Environmental Impact Statement relates.</p>
2009	<p>The application under the Gas Act made to the Department of Communications, Energy and Natural Resources in May 2008 was withdrawn in January 2009.</p>

In 2005, the then Minister for Communications, Marine and Natural Resources appointed independent consultants, Advantica, to undertake a safety review of the Corrib Onshore Gas Pipeline. Advantica concluded that, provided it could be demonstrated that the pressure in the onshore pipeline would be limited effectively, and the recommendations of the report were followed, there would be a substantial safety margin in the pipeline design, and the pipeline design and proposed route (originally proposed

route) should be accepted as meeting or exceeding international standards in terms of the acceptability of risk and international best practice for high pressure pipelines.

SEPIL accepted all the recommendations of the Advantica Report, and has put in place measures to limit the pressure in the onshore pipeline to 144 bar or below. This is described further in Chapter 4, Corrib Onshore Pipeline EIS. SEPIL and their engineering consultants have carried out engineering and safety studies to ensure that all the recommendations made by Advantica in their Safety Review have been addressed and implemented in the design for the modified route. Advantica's main findings and recommendations, and a reference to where they have been addressed in the EIS are summarised in Table 3.

In 2006, a Government appointed mediator (Peter Cassells) met with local residents from the Ros Dumhach (Rosspport) area including those who were opposed to the development and with SEPIL to attempt to resolve difficulties that arose there during 2005. In his report, Mr. Cassells recommended that the route of the onshore pipeline be modified in the vicinity of Ros Dumhach (Rosspport). SEPIL accepted this recommendation and appointed consultants (RPS) to identify and develop this modified route in consultation with the local community and other relevant stakeholders.

Table 3: Advantica Recommendations.

Issue	Actions Recommended	Action Required	Onshore Pipeline EIS Reference
Decision-making process	There appears to be no formal framework in Ireland for decisions on the acceptability of different levels of risk, which should be in place to enable potential developers to gauge whether or not a proposed project is likely to be permitted and to ensure consistency of decisions made on safety issues. We recommend that consideration should be given by the Irish Government to establishing a risk-based framework for decisions on proposed and existing major hazard pipelines and related infrastructure, to ensure transparency and consistency of the decision-making process.	Matter for Government	Not addressed in EIS.
Pipeline pressure	The unusually high design pressure (345 bar) resulted from a cautious approach to the pipeline design, such that the pipeline is designed to withstand the highest pressure it could possibly experience, despite the higher cost of pipeline construction. This approach results in a pipeline with a very thick wall, which offers the main line of defence against threats to its integrity.	No action required	Pipeline safety and integrity aspects addressed in Chapter 4.
Further enhancements	In general, conservative assumptions were used in the detailed engineering design. However, we have identified a number of areas of concern in the documentation reviewed, where detailed technical recommendations should be taken into account in the engineering design.	SEPIL to implement detailed technical recommendations.	Implementation of recommendations listed and discussed in Chapter 4 and associated appendices.
Measures to manage hazards associated with unprocessed gas	The composition of the Corrib gas is similar to that normally transported through gas transmission pipelines, with a very high methane content. However, because the gas is unprocessed, small quantities of other fluids will be present, that introduce safety issues not normally of concern for onshore gas pipelines, notably internal corrosion, possible blockage of the pipeline due to hydrate formation, and the possibility (albeit very unlikely for the Corrib Gas Field) of H ₂ S being produced as the wells age. Pipeline technology for transporting unprocessed gas is well established, and appropriate measures have been identified to	No action required.	Aspects associated with pipeline integrity are discussed in Chapter 4 and associated appendices

Issue	Actions Recommended	Action Required	Onshore Pipeline EIS Reference
	manage these additional hazards.		
Managing pipeline integrity	Provided that the recommendations in this report are followed, we believe that the pipeline will be constructed to an appropriate standard and will be “fit for purpose”. However, there is insufficient evidence at present to conclude with confidence that integrity management plans will be sufficient to ensure that the integrity of the pipeline is maintained to a sufficiently high standard throughout its life. We recommend that a formal integrity management plan is established prior to construction, including the operational and maintenance philosophy, and that an independent audit and inspection regime for both the construction and operation of the pipeline is established.	SEPIL to prepare and submit for approval formal pipeline integrity management plan and to establish an independent audit and inspection regime for both the construction and operation of the pipeline.	Pipeline integrity management scheme prepared and described in Chapter 4 and associated appendices. Control of onshore pipeline pressure at 144 bar also described in Chapter 4.
Societal risk associated with higher pressures	The quantified risk assessment (QRA) carried out on behalf of Shell has been reviewed in detail and an independent check on the calculated risk levels has been carried out using Advantica’s pipeline risk assessment methodology including predictions of the consequences of pipeline failures. The levels of risk to an individual living in the vicinity of the pipeline were found to be within recognised international limits and “broadly acceptable”, with the risk levels calculated by Advantica lower than those in the Shell QRA. However, the risk assessment submitted by Shell fails to recognise the uncertainty in the risk modelling for such high design pressures as 345 bar, and takes no account of societal risk to the local population as a whole. An independent assessment of the levels of societal risk, calculated using Advantica’s methodology, is included in this report and shows a significant increase in risk with increasing pressure, due to a predicted increase in both the failure frequency and the consequences of a pipeline failure. The calculated societal risk levels are also in a region that would normally be regarded as broadly acceptable, but we note that there is a significant level of uncertainty in the risk calculations at pressures as high as 345 bar.	No particular action specified. Note that the onshore pipeline is now proposed to have a design pressure of 144 bar.	Quantified risk assessment carried out for modified pipeline route at maximum pressure is included in Appendix Q.
Reducing societal risk	Limiting the pressure in the onshore section to pressures no greater than 144 bar (equivalent to a design factor of 0.3, consistent with the design of pipelines passing through more densely populated suburban areas) is believed to be both practical and an effective measure to reduce risk (and will only be required in the early years of the life of the pipeline because the pressure in the gas wells will decline naturally as gas is extracted). In view of the societal concerns, the level of uncertainty in the risk analysis, the extent of extrapolation of onshore pipeline design codes beyond their normal range of application and mindful that the results of risk analysis are only one factor in the decision-making process, we believe that this measure should be taken and the pipeline design revised accordingly. We recommend that the pressure in the onshore pipeline should be limited to no greater than 144 bar, with a design factor not exceeding 0.3, and the pipeline design revised accordingly.	SEPIL to implement detailed technical recommendations, i.e. limit the pressure of the onshore pipeline to 144 bar, and pipeline design revised accordingly.	SEPIL to implement pressure limiting measures (Chapter 4).
Determining	Further work will be required to determine the most	SEPIL to	Alternative pipeline

Issue	Actions Recommended	Action Required	Onshore Pipeline EIS Reference
most effective way of limiting pressure in onshore pipeline to 144 bar	appropriate engineering solution to limiting the pressure in the onshore pipeline. The FMECA (Failure Mode, Effect and Criticality Analysis) carried out on the planned subsea systems for Shell could form the basis for the reliability analysis required. We recommend that a full and technically thorough reliability analysis should be carried out of the subsea pressure control and isolation systems specified in the field design to enable appropriate additional pressure control measures to be implemented and the effective limitation of the pressure in the onshore pipeline demonstrated.	demonstrate appropriate pressure control measures to effectively limit the pressure in the onshore pipeline to 144 bar.	pressure limiting systems analysed and high integrity system (Landfall Valve Installation) proposed. See Chapter 3 and 4 and associated appendices.
Stability of pipeline in peat	The potential for ground movement to damage the pipeline due to instability of the peat, and the possible unsuitability of peat for pipeline construction, were significant issues for the review. The results of calculations undertaken on behalf of SEPIL and confirmed by Advantica's own analysis, indicate that the pipeline would be expected to withstand the worst-case ground movement event (albeit we recommend the results are checked by consideration of additional parameters), and that instability of the peat does not present a significant threat to the integrity of the pipeline. However, peat is one of the most difficult materials in which to construct pipelines. Documents supplied by SEPIL include reports by AGEC Ltd describing investigations of the ground conditions along the pipeline route, which appear to deal adequately with the ground stability issues. The recommendations made by AGEC should be followed in full and the proposed construction methods revised accordingly, in order that the ground stability issues are managed appropriately.	SEPIL to implement appropriate measures to properly manage ground stability issues.	Dealt with in Chapter 3, Chapter 5, Chapter 15 (Soils & Geology) and associated Appendices.
Limitations of scope	The pipeline safety review addressed only the design and route of the onshore section of the Corrib upstream pipeline as proposed. It does not include detailed examination of the feasibility of alternative project design options, alternative pipeline designs or routes, and assumes that the gas transported through the pipeline is produced from the existing Corrib wells as identified. In the event that additional fields were proposed to be tied in to the pipeline at any future date, a full review would be required to consider issues such as extension of the life beyond the initial design life, changes in the fluids in the pipeline or changes in the operating pressures.	Any changes in scheme to be fully reviewed.	Application for future modification would be submitted to all relevant competent authorities for new determination.

STATUTORY APPROVALS ASSOCIATED WITH ONSHORE PIPELINE ROUTE MODIFICATION

The Planning and Development (Strategic Infrastructure) Act 2006 - the 'Strategic Infrastructure Act', was enacted on 6th July 2006 and became fully operational on 31st January 2007. This inserted a number of significant provisions into the Planning and Development Act, 2000 (the 'PDA'). In essence these provide a streamlined procedure for planning applications for prescribed classes of infrastructure development, and require that applications for such development be made directly to An Bord Pleanála. The onshore pipeline development is declared under the 2006 Act to comprise strategic infrastructure. As such, the pipeline, which had previously constituted exempted development under

the Planning Acts, will as a result of the route modification now be subject to an application for Approval for this development to An Bord Pleanála under the Strategic Infrastructure Act.

The entire pipeline between the Corrib Gas Field and the Terminal received Ministerial Consent under Section 40 of the Gas Act in April 2002. However, a new consent will be required under the Gas Act for the entire pipeline in order to implement the proposed modifications to the onshore pipeline route. This is because there is no mechanism under the Gas Act to amend an existing consent.

The Foreshore Licence dated 17th May, 2002 to construct/install, operate and maintain the pipeline in the foreshore (from the high water mark to 12 nautical miles offshore) under the Foreshore Act, is specific to the exact route of the pipeline in the foreshore; therefore modifications to the route alignment in the areas of Sruwaddacon Bay below High Water Mark require additional consent.

The route modification will therefore result in consents being sought as follows:

- Approval of the onshore pipeline and associated development within the functional area of the Planning Authority, by An Bord Pleanála under the provisions of the Planning and Development (Strategic Infrastructure) Act 2006;
- Consent for the overall pipeline development from the Minister of the Department of Communications, Energy and Natural Resources (DCENR) under Section 40 of the Gas Act 1976 to 2002 (as amended); and
- A Foreshore Licence in respect of the works in the foreshore from the Minister for Agriculture Fisheries and Food under the Foreshore Acts 1933-2003 (as amended).

The inter-relationship of these three pieces of legislation is illustrated in Figure 2.

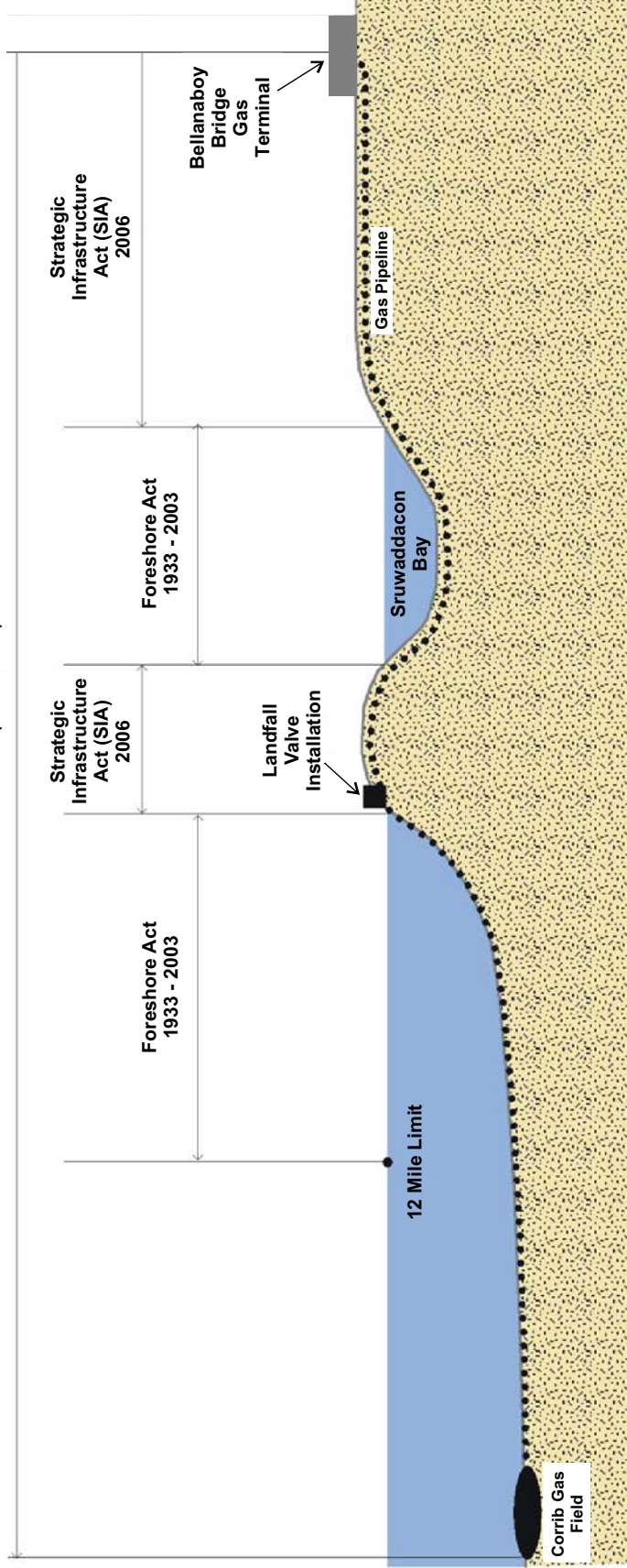
The preparation of application documents for the necessary consents in relation to the modification of the onshore pipeline route has resulted in the preparation of the following new EIS documentation:

- A Supplementary Update Report (by RSK) to the 2001 Offshore EIS, describing the potential impact of the proposed offshore pipeline in relation to new baseline information that has become available since 2001; and
- A new Environmental Impact Statement (EIS) for the proposed modified onshore pipeline route (by RPS).

OFFSHORE EIS

The details of the development of the offshore section of the pipeline have not materially altered since the publication of the 2001 Offshore EIS, nor indeed from that which has the benefit of previous regulatory consent. A Supplementary Update Report has been prepared for the 2001 Offshore EIS to reflect new baseline survey data that have been acquired and the findings of ongoing monitoring carried out since the compilation of the original EIS.

Gas Act 1976 (Section 40)



Corrib Gas Field -
Statutory Approvals

Figure 2

File Ref: MDR0470C/EIS/039 RevA02
Date: February 2009

CORRIB ONSHORE PIPELINE



CORRIB ONSHORE PIPELINE EIS

An EIS for the modified onshore section of the pipeline has been prepared to meet the requirements of European Communities (Environmental Impact Assessment) Regulations 1989-2001. The EIS includes:

- A detailed summary of the route selection process carried out to address concerns about proximity to housing, and leading to a preferred modified onshore pipeline route;
- A detailed assessment of a new Landfall Valve Installation (LVI), designed to ensure that the onshore pressure is limited to 144 bar at Gleann an Ghad (Glengad) in accordance with Advantica's recommendations;
- Technical reports addressing safety and technical integrity of the pipeline in response to recommendations made by Advantica;
- An assessment of the potential environmental impacts associated with the onshore section of the pipeline; and
- An assessment of the potential impacts resulting from the deposition of approximately 75,000m³ of peat at the Srahmore Peat Deposition Site arising from the construction of the onshore pipeline. This assessment is provided in Volume 3 of the EIS.

THE PLANNING AND DEVELOPMENT (STRATEGIC INFRASTRUCTURE) ACT 2006

The Strategic Infrastructure Act (SIA) is titled in part

"An Act to provide in the interests of the common good, for the making directly to An Bord Pleanála of applications for planning permission in respect of certain proposed developments of strategic importance to the State".

Section 4 of the SIA relates to Provision of Electricity Transmission and Gas Infrastructure. Specifically Section 4 of the SIA inserts a new Section 182C into the Planning and Development Act 2000, which now requires an application for approval of all strategic gas infrastructure projects to be made to An Bord Pleanála. Therefore the provisions of the SIA as inserted into the PDA apply to the proposed development. A "Strategic Gas Infrastructure Development" is defined in Section 2 of the PDA as amended by Section 6 of the SIA as:

"any proposed development comprising or for the purposes of a strategic downstream gas pipeline or a strategic upstream gas pipeline, and associated terminals, buildings and installations, whether above or below ground, including any associated discharge pipe".

The Act further defines a strategic upstream gas pipeline as:

"so much of any gas pipeline proposed to be operated or constructed – (a) as part of a gas production project, or (b) for the purposes of conveying unprocessed natural gas from one or more than one such project to a processing plant or terminal or final coastal landing terminal, as will be situate in the functional area or areas of a planning authority or planning authorities".

These definitions clearly incorporate all development within the functional area of Mayo County Council associated with the proposed upstream pipeline development, including the LVI and other associated infrastructure.

The SIA and PDA as amended, provide that where the "undertaker" intends to carry out a Strategic Gas Infrastructure Development, the undertaker shall prepare an application and an Environmental Impact Statement, and shall apply to An Bord Pleanála for approval of the development. The powers to grant compulsory acquisition orders for land under the Gas Act have been transferred under the SIA to An Bord Pleanála.

The SIA and PDA as amended, also require that an application for an upstream gas pipeline must be accompanied by a Certificate under the 1976 or 2002 Gas Acts from the Minister for Communications, Energy and Natural Resources.

Pre-Application Stage

The Act requires that a prospective applicant shall, prior to making an application for a strategic gas infrastructure development, enter into consultations with An Bord Pleanála. Consequently, SEPIL and their consultants, RPS, have undertaken pre-application consultation with An Bord Pleanála in preparation for submitting the application for the modified route for the onshore pipeline, and associated development.

As part of the consultation, An Bord Pleanála has provided a list of the prescribed bodies which must be notified of the application.

Application

An application for consent under the PDA as amended by the SIA and elsewhere for the Corrib Onshore Gas Pipeline will be made to An Bord Pleanála. Copies of the application document will be provided to the prescribed bodies. The application will comprise (see Figure 3):

- Cover letter, application form, copy of statutory notice and other relevant particulars;
- Drawings; and
- Environmental Impact Statement for the Corrib Onshore Pipeline.

Any person may make a submission to An Bord Pleanála in relation to the application within seven weeks from the date of the application documents becoming available for public inspection. The prescribed bodies are also required to provide submissions to An Bord Pleanála within this period.

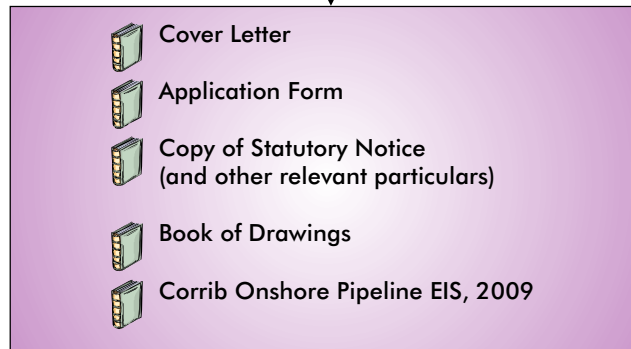
An Bord Pleanála has sole discretion whether or not to hold an oral hearing in respect of the application.

An Bord Pleanála can approve the application in whole or part; it can require modifications to the proposal; or it may refuse approval. It may attach conditions relating to the construction or financing of the project. In making its decision An Bord Pleanála must have regard to proper planning and sustainable development, environmental effects, national policies, the national interest, and relevant local development plans.

With the implementation of the SIA and the amendments of the PDA, no conventional Planning Permission is required under the Planning and Development Act 2000 i.e. from Mayo County Council, for any part of this proposed development.

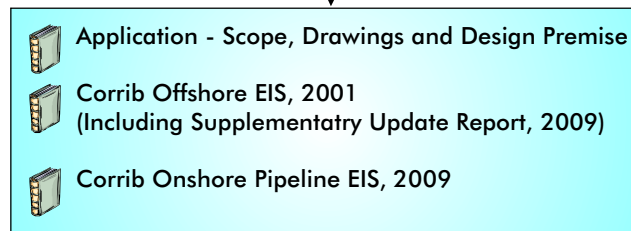
STRATEGIC INFRASTRUCTURE ACT

Application to ABP



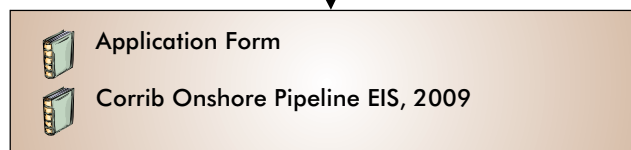
GAS ACT

Application to DCENR (PAD)



FORESHORE ACT

Application to DAFF (CZMD)



DCENR - Department of Communications, Energy & Natural Resources
PAD - Petroleum Affairs Division
ABP - An Bord Pleanála
DAFF - Department of Agriculture, Fisheries & Food
CZMD - Coastal Zone Management Division (of DAFF)

Structure of Applications

Figure 3

CORRIB ONSHORE PIPELINE

File Ref: MDR0470GrEIS032 RevA02
Date: February 2009



THE GAS ACTS 1976 TO 2000 (AS AMENDED)

The Gas Act sets out in detail the powers and duties of the gas undertaker. The original Act established Bord Gáis Éireann (BGÉ) as the statutory body responsible for the acquisition, transmission and distribution of natural gas in Ireland. The Gas (Amendment) Act, 2000, permitted private developers access to and acquisition of land for the purpose of pipeline construction, similar to the powers held by BGE.

Section 40 of the Gas Act applies to the proposed overall gas pipeline development. The Act requires that all reasonable measures be taken to protect the natural environment and to avoid damaging the amenities of the area. This requirement was further expanded upon by Article 20 of S.I. 349 of 1989 European Communities (Environmental Impact Assessment) Regulations, 1989, whereby a new section, Section 40A was added to the Gas Act.

Section 40A requires that where relevant, an Environmental Impact Statement be included as part of an application to the Minister under Section 40 of the Act. Applications for Section 40 Approval must therefore be accompanied by comprehensive appraisal of possible environmental and other impacts, which may be brought about by the construction of the upstream pipeline in addition to detailed routing and wayleave requirements.

Pre-Application Stage

The Gas Act as amended requires that when selecting a route for a pipeline that the developer have regard to any comments raised by any local authority within whose functional area the proposed pipeline route, or part of the route is situated, or any of the following on, in or over whose land such a route or part of the route would be situated, namely; a harbour authority, the Electricity Supply Board or any other electricity undertaker, and Córas Iompair Éireann or any other railway undertaker.

Consequently, SEPIL and their consultants, RPS, have consulted with the relevant prescribed bodies as well as with the Department of Communications, Energy and Natural Resources prior to finalising the application for the proposed development. This has included pre-application consultation meetings with the Department of Communications, Energy and Natural Resources, Mayo County Council, National Parks and Wildlife Service of Department of Environment, Heritage and Local Government and North Western Regional Fisheries Board. Particulars of the concerns raised, and how these have been addressed are included in Chapter 2 of the Onshore Pipeline EIS.

Application

An application for Consent to Construct a Pipeline under Section 40 of the Gas Act, 1976, as amended, will be made to the Minister of the Department for Communications, Energy and Natural Resources. It will comprise (see Figure 3):

- Application (Scope, Drawings and Design Premise)
- Offshore EIS comprising:
 - Corrib Field Development Offshore (Field to Terminal) Environmental Impact Statement, 2001 re-printed 2008.
 - Supplementary Update Report (Rev 02), 2009.
- Corrib Onshore Pipeline EIS.

THE FORESHORE ACTS 1933-2003

The Foreshore Acts 1933 to 2003 (as amended) provides for the protection and preservation of the Foreshore and the seashore. According to Section 1(1) of the Foreshore Act:

“The word ‘foreshore’ means the bed and shore, below the line of high water of ordinary or medium tides, of the sea and of every tidal river and tidal estuary and of every channel, creek and bay of the sea or of any such river or estuary”

The foreshore extends to the twelve-mile limit (approximately 22 km). Section 3(1) of the Act, as amended by the Foreshore (Amendment) Act 1992 provides that any works or placing structures or material on, or for the occupation of, or removal of material from the foreshore requires a lease or licence to be obtained from the Minister for Agriculture, Fisheries and Food.

This type of development on the foreshore is subject to the European Communities (Environmental Impact Assessment) Regulations, 1989 to 2001, requiring the preparation of an Environmental Impact Statement, which must be provided to the prescribed bodies specified in the Foreshore (Environmental Impact Assessment) Regulations, 1990 (S.I. No. 220).

Pre-Application Stage

Guidance notes (Foreshore Acts 1933 To 2003 - General Guidance Notes) published by the Coastal Zone Management Division (CZMD) of the Department of Agriculture, Fisheries and Food recommend that applicants for a lease or licence under the Act consult within the CZMD well in advance of finalising their proposals. SEPIL and their consultants, RPS, have consulted with the Department and the relevant prescribed bodies prior to finalising the application for the proposed development. The consultation has included meetings with the Foreshore Section of CZMD.

Application

An application for a Foreshore Licence for the Sruwaddacon Bay crossings along the route of the onshore pipeline will be submitted to CZMD of the Department of Agriculture, Fisheries and Food (DAFF) and the prescribed bodies. It will comprise (see Figure 3):

- Application Form
- Offshore EIS comprising:
 - Corrib Field Development Offshore (Field to Terminal) Environmental Impact Statement, 2001 (re-printed 2008).
 - Supplementary Update Report (Rev 02), 2009.
- Corrib Onshore Pipeline EIS.

SUBMISSIONS

Copies of this EIS will be available for inspection by the public and online (locations to be specified in public notices). Submissions can be made to An Bord Pleanála, the Department of Communications Energy and Natural Resources, and the Department of Agriculture, Fisheries and Food, having regard to each specific breakdown of the overall proposal detailed above, within the timeframe specified in newspaper adverts which will be published in local and national newspapers in accordance with the relevant regulations.

SEPIL HEALTH SAFETY AND ENVIRONMENTAL POLICIES

SEPIL's environmental standards are set by the Shell Group's Health, Safety and Environmental (HSE) Policy.

SEPIL's Managing Director has signed off on this policy, which commits each member of staff to the duty of living this policy and to halting activities believed to threaten safety, health or the environment.

The Policy commits SEPIL to:

- pursue the goal of no harm to people;
- protect the environment;
- use material and energy efficiently to provide its products and services;
- develop energy resources, products and services consistent with these aims;
- publicly report its performance;
- play a leading role in promoting best practice in Shell's industries;
- manage HSE matters as any other critical business activity; and
- promote a culture in which all Shell employees share this commitment.

To support these commitments, SEPIL will:

- have a systematic approach to HSE management designed to ensure compliance with the law and to achieve continuous performance improvement;
- set targets for improvement and measures, appraise and report performance;
- require contractors to manage HSE in line with this policy;
- require joint ventures under its operational control to apply this policy and to use its influence to promote it in other ventures; and
- include HSE performance in the appraisal of all staff and reward accordingly.

These commitments encompass the environmental philosophy that will be applied by SEPIL to all aspects of the proposed development.

