

## Section 1

# Introduction and background

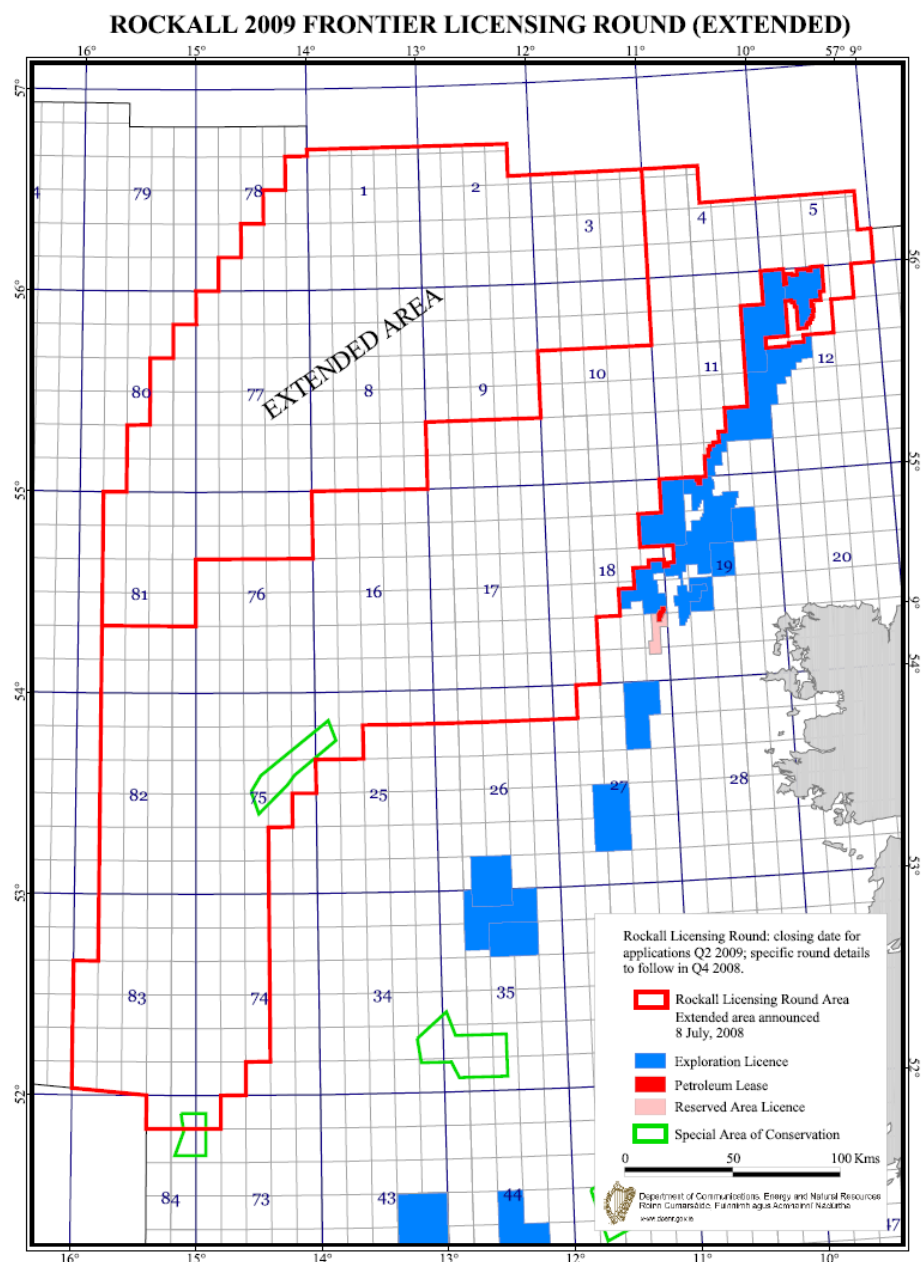


# 1 Introduction and background

## 1.1 Introduction

Over the past decade, exploration activity levels offshore Ireland have been relatively low. The Department of Communications, Marine and Natural Resources (DCMNR), now the Department of Communications, Energy and Natural Resources (DCENR), initiated a review of the hydrocarbon-bearing potential of the Atlantic Ireland Basins, commencing with the acreage covering the Slyne, Erris and Donegal Basins to the west and northwest of Ireland in 2005 and the Porcupine Basin to the west and southwest in 2007. This review is now examining the potential of the Rockall Basin, located further offshore to the west and northwest of Ireland (Figure 1.1).

**Figure 1.1 Location of Rockall Basin Frontier Exploration Licensing Round**





The Rockall Basin acreage is included in a Licensing Round that was announced in April 2008 and extended in July 2008 to include the north-western margin of the Rockall Basin. The Licensing Round will close for bids in the second quarter of 2009. In accordance with the European Union (EU) Strategic Environmental Assessment (SEA) Directive (2001/42/EC) and the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 Statutory Instrument number 435, the DCENR is carrying out an SEA on its proposed plan to issue Frontier Exploration Licences for blocks listed in the schedule to the 2009 Licensing Round covering the Rockall Basin. This is referred to hereafter as the Draft Plan. A map of the area under offer in the licensing round is shown in Figure 1.1, and the text of its formal announcement of is shown in Appendix 1.

This is the third offshore SEA of a series to be carried out on plans to issue exploration licences for the entire offshore area under Irish jurisdiction. As part of the SEA for the current proposed programme or Draft Plan, the DCENR has commissioned this environmental report in order to highlight the potentially significant effects on the environment and to identify any mitigating measures. This report includes information that may reasonably be required taking into account:

- 1) current knowledge and methods of assessment;
- 2) the content and level of detail in the Draft Plan;
- 3) the stage reached by the Draft Plan in the decision-making process; and
- 4) the extent to which certain matters are more appropriately assessed at different levels in the decision-making process in order to avoid duplication of environmental assessment.

The scenario being considered in the Draft Plan is detailed in Section 4 of this report, but in summary comprises the undertaking of 2D and 3D seismic data gathering from 2010 to 2016, followed by the drilling of up to one exploration well in 2011, two in 2012 and three per year in the period 2013 to 2016. Up to one appraisal well per year is scheduled from 2013 to 2016. These activities will take place alongside existing exploration programmes, taking place as a result of previous licensing rounds. As an acknowledgement that a proportion of the exploration drilling is likely to be successful, and hydrocarbons in commercial quantities may be found, it is also estimated that up to 2 development wells per year may be drilled also over the period 2014 to 2016.

This third Irish Offshore Strategic Environmental Assessment (IOSEA3) has the following objectives:

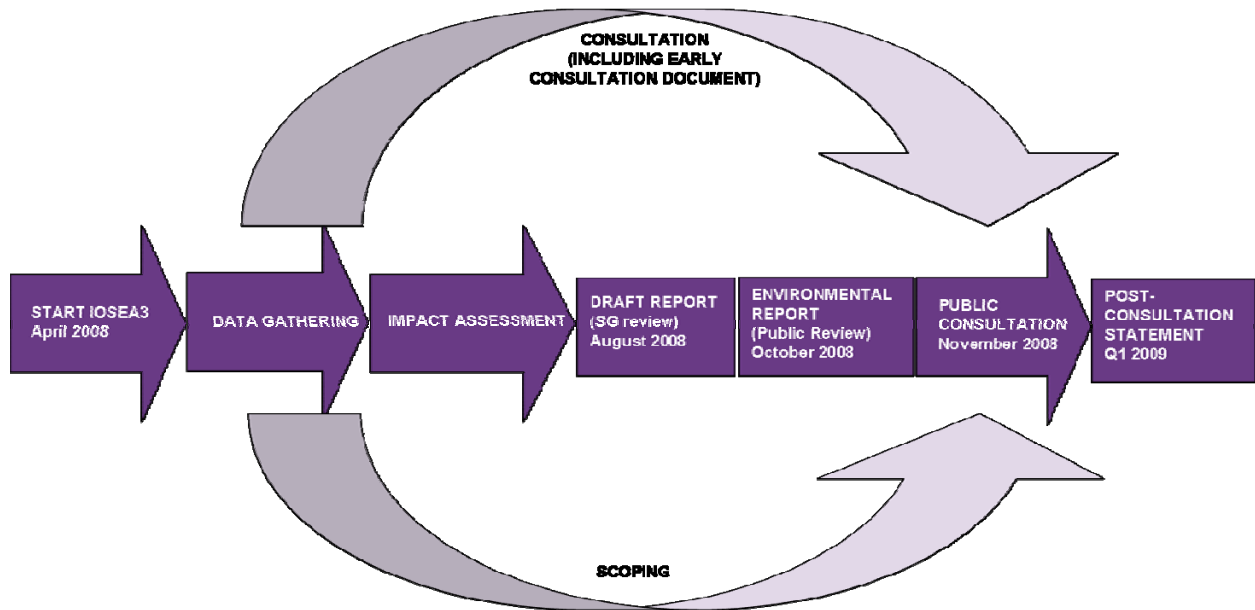
- 1) first, it will reflect on and learn from the conduct of IOSEA1 and IOSEA2, and point the way for future IOSEA work;
- 2) second, it will inform the public and provide a mechanism for consultation;
- 3) third, it will inform the Irish government, oil companies and the general public of specific environmental considerations in its forthcoming licensing process;
- 4) finally, it will be a more efficient means to provide oil companies working offshore with an operational baseline against which they can conduct their work and ensure responsibility to environmental protection.

### 1.1.1 Schedule

The DCENR initiated IOSEA3 for oil and gas exploration in spring 2008. Following a tender process, ERT (Scotland) Ltd, a marine environmental consultancy, and Aqua-Fact International Services Ltd, an environmental and hydrographic consultancy based in Galway, were commissioned to undertake preparation of the environmental report.

The schedule for the IOSEA3 is aligned with that of the current licensing round, to ensure that the process leading up to production of the environmental report, and the subsequent consultation, can provide a meaningful input into the decision-making process prior to licence award. The schedule is outlined in Figure 1.2. This environmental report will be circulated during the consultation phase in November 2008, during which expert bodies and the public will be able to provide feedback to the DCENR through various channels including specially arranged meetings. The consultation feedback and submissions received will be reported in a Post-Consultation Statement that will incorporate any recommendations as to how the Draft Plan for the licensing round may be amended.

Figure 1.2 The IOSEA3 schedule



## 1.2 Scope and purpose of IOSEA3 and environmental report

### 1.2.1 The SEA Directive

Under Article 3.1 of the SEA Directive, an environmental assessment must be carried out for all plans and programmes that may have significant environmental effects at a regional or national level. The text of the Directive is presented in Appendix 2.

SEA is the formal, systematic evaluation of the likely significant environmental effects of implementing a national or regional plan before a decision is made to adopt the plan. Environmental assessment is defined under the Directive as

*“the preparation of an environmental report, the carrying out of consultations, the taking into account of the environmental report and the results of the consultations in decision-making together with the provision of information.”*

Environmental assessment is an important tool for integrating mitigative considerations into plans and programmes that may otherwise have caused significant effects on the environment. It should be noted that under national legislation, assessments are required at different levels during the implementation of a plan/programme and its derivative projects. At the strategic level, regional or national plans covering a wide geographical extent may be required for sectoral or cross-sectoral interests. Then, at the project-specific level, large projects at specific locations may require individual environmental impact assessment involving public consultation. Finally, at the smaller project or sub-project levels, a smaller scale of environmental assessment may be required for plans that are subject to established consenting procedures without a public consultation process. See Section 3 for an outline of how the DCENR manages the oil and gas sector in this respect.

Under the SEA Directive, an environmental report shall be prepared in which the likely effects on the environment of implementing the plan or programme are assessed, after identification and evaluation of reasonable **alternative** strategies, taking into account the objectives and the geographical scope of the plan or programme.

### 1.2.2 The purpose of the environmental report

The purpose of the IOSEA3 is to assess the significance of impacts arising from the likely seismic and exploration drilling activity levels (the ‘scenario’) as proposed by the DCENR after consultation with the industry, and to present the outcome of this assessment in an environmental report.



This environmental report describes the scope and impact of this Draft Plan and the relationship to other relevant plans and programmes. It does this by:

- 1) describing the environmental characteristics of the Rockall Basin Licensing Round area likely to be significantly affected;
- 2) identifying any existing environmental problems which are relevant to the plan specifically those relating to any areas of particular environmental importance, such as areas designated pursuant to the Birds Directive 79/409/EEC and the Habitats Directive 92/43/EEC;
- 3) considering the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation;
- 4) determining the likely significant effects on the environment of implementing the plan (such as: secondary; cumulative; synergistic; short, medium and long-term permanent and temporary; positive and negative effects), including issues such as biodiversity, population, human health, fauna, flora, soil, air, water, climatic factors, material assets, cultural heritage including architectural heritage, landscape and the interrelationship between the above factors;
- 5) describing the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan;
- 6) presenting an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;
- 7) proposing monitoring measures.

The organisation of the environmental report is described in Section 1.5. The Draft Plan and the environmental report shall be made available to the authorities delegated by the Irish government and to the public. The Environmental Authorities, other expert bodies and the public shall be given early and effective opportunity to express their opinion before adoption of the Final Plan.

## 1.3 SEA legislative context

### 1.3.1 SEA Directive 2001/42/EC

Environmental impact assessment (EIA) of individual projects in the EU began in 1985 with the EIA Directive 85/337/EEC. Since this was transcribed into domestic legislation, it has been established that, in conjunction with individual project assessment, there was a need for evaluation of the plans that guide these projects. In particular, it has been recognised that individual project assessment is not the best place to address cumulative effects and that there are many benefits for sustainable development in influencing decision making at earlier stages of plan development.

The SEA Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment came into force in 2001. The Directive's objective is to:

*"provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment."*

The full text of the Directive is shown in Appendix 2. Member states were required to transpose the Directive into laws, regulations and administrative provisions to apply to all plans and programmes on or after 21 July 2004. The following Regulations have been established under Irish Law:

- 1) European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Statutory Instrument (SI) 435 of 2004); and
- 2) Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI 436 of 2004).

SI 436 covers SEA for planning and development purposes, whilst SI 435 covers SEA for other specified plans and programmes.

SI 435 includes the requirement to carry out SEA for all plans and programmes prepared for (amongst others) the energy and industry sectors, and which sets the framework for future development consent of projects relevant to the extraction, storage and pipeline transfer of hydrocarbon resources.

SI 435 also states that a plan or programme will only require SEA when it is likely to have significant effects on the environment. In determining whether a particular plan or programme may have significant effects on the environment, the Competent Authority, in this case the DCENR, will take account of:

The characteristics of the plan or programme, or the degree to which it:

- 1) sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources;
- 2) influences other plans including those in a hierarchy;
- 3) integrates environmental considerations in particular with a view to promoting sustainable development;
- 4) incorporates environmental problems;
- 5) is relevant to the implementation of EU legislation on the environment (eg plans and programmes linked to waste-management or water protection); and

The nature of the effects and of the area likely to be affected by the plan or programme, with regard to:

- 1) the probability, duration, frequency and reversibility of the effects;
- 2) the cumulative nature of the effects;
- 3) the transboundary nature of the effects;
- 4) the risks to human health or the environment;
- 5) the magnitude and spatial extent of the effects;
- 6) the value and vulnerability of the area likely to be affected due to:
  - special natural characteristics or cultural heritage,
  - exceeded environmental quality standards or limit values,
  - intensive land-use,
  - the effects on areas or landscapes which have a recognised national, EU or international protection status.

The DCENR has recognised that the activities outlined in the Draft Plan may have significant effects on the environment and has embarked on an SEA process to inform the Irish government, oil companies and the general public of specific environmental considerations in its licensing process.

### 1.3.2 Energy policy context

In the 2005 Statement of Strategy (DCMNR, 2005a), high level goals were set up to promote the sustainable development, management and regulation of the communications, energy, marine and natural resources sector in support of national economic and policy objectives. Within this strategy, which is set against the economic backdrop, there are sectoral policy goals and strategy. Ireland's energy policy closely mirrors that of the EU and the Organisation for Economic Co-operation and Development (OECD) and is based on three main policy pillars:

- safeguarding security of supply;
- developing a sustainable energy future; and
- the development of competitive, efficient and properly regulated energy markets.

The International Energy Agency (IEA) published a review of Ireland's energy policy as part of its series 'Energy Policies of IEA Countries' (IEA, 2007). The Executive Summary contains the following (at page 7): 'Energy security and energy prices are becoming major concerns for Ireland owing to the increasing reliance on gas in the economy and the absence of sufficient domestic reserves.' Page 12 of the Report (also the Executive Summary) has the following: 'While the current fiscal regime is creating a favourable environment for developers, great care should be taken not to increase the risk for developers at this point in the development of the industry by developing the rules.' The high and increasing level of Irish import dependence is referred to at pages 12 and 15. The chapter on General Energy Policy includes the following (at page 18): 'The UK has become a net importer of natural gas and an issue of concern is that Ireland will become increasingly dependent on natural gas sourced from more distant markets.'

Chapter 7 of the Report deals with Fossil Fuels and includes a section on Exploration and Production which is worth quoting at length. It reads: 'Many players in the petroleum industry see Ireland as a relatively under-explored petroleum region with limited potential and commercially exploitable finds. This is reflected in the comparatively low interest in licensing rounds, but it is possible that this



perception is now changing. The government has made a commendable effort to increase the information about the potential of the Irish petroleum province, and to encourage the exploration activities. Coupled with recent high oil prices, this activity may lead to a renewed interest in offshore oil and gas exploration.' It continues: 'Nevertheless, it is clear that more needs to be done to encourage exploration in the Irish petroleum province to reduce the risk to operators. Particular barriers include the absence of a petroleum services industry in Ireland, the challenging geological and climatic conditions, the relative lack of knowledge about the potential owing to a lack of seismic research and the fiscal regime. The government should consider learning from best practice in other countries, such as Norway, on how to attract petroleum companies to become active in Ireland. Most importantly the government may have to consider the development of a fiscal regime that encourages exploration. Any change to the current regime should favour increasing exploration activity.'

The recommendations for Exploration and Production are (at page 121):

- Develop a framework that encourages exploration and the introduction of new companies into the Irish petroleum industry by implementing best practice from abroad. In particular, ensure that the fiscal regime for exploration and production adequately reflects the industry's risks and perceptions of the Irish petroleum province.
- Promote public acceptance in the local areas affected by fossil-fuel developments and streamline the legal procedures by identifying benefits for the local participants.
- Undertake a thorough analysis of the potential of the Irish petroleum province, including resource mapping, making this information available to the potential investors.
- Speed up the opening of the Corrib gas field to obtain an indigenous source of natural gas, taking into account environmental considerations.

The Irish Government published an Energy Policy Paper in 2007 which sets as a strategic objective (at section 3.6) the creation of a 'stable attractive environment for hydrocarbon exploration and development' and identifies nine strategies in support of that objective. These include the amendment of the regulatory framework to give effect to the proposed new licensing terms for exploration and production, the holding of annual licensing rounds in the Atlantic Basins, and the publication of updated rules and procedures manuals for both exploration and production.

The introduction to the Licensing Terms for Offshore Oil and Gas Exploration and Development 1992 includes the following:

*"Commercial production of oil and gas can make a major contribution to Ireland's economic development. This has been demonstrated by the impact of natural gas from the Kinsale Head and Ballycotton Fields. The Government of Ireland are therefore committed to realising the full potential of oil and gas resources offshore Ireland. Since the Government do not consider that direct State involvement in this area of activity is appropriate, the pursuit of their policy objectives requires that competent private sector companies be encouraged to invest in the search for and production of oil and gas in Irish waters. The private sector is recognised as having the resources, expertise and practical experience essential for such a task. In the early 1990s the Government took a number of major initiatives in order to enhance the comparative attractions of Ireland as a location for investment. Principal among such initiatives is the introduction of a complete statutory regime of petroleum taxation and the introduction of new Licensing Terms."*

That policy has been pursued by every Government in office since then, and those initiatives remain in place today. The Agreed Programme for Government following the general election in 2007 includes an undertaking to "create a stable environment for hydrocarbon exploration while increasing the return to the State." The Programme also sets as an overarching objective 'of securing our national energy supply' and states 'We will:

- Encourage investment in oil and gas exploration off the Irish coast and optimise the value of any oil and gas finds for Ireland.
- Work to maximise the level of exploration activity, while ensuring a fair return to the State from these activities.
- Manage exploration licences in a manner that encourages timely exploration.

In the EU context, the following passage is taken from Sustainable Energy Ireland (2006):

*“The EU Green Paper ‘Towards a European strategy for the security of energy supply’ discusses the risk of low levels of indigenous fuel supplies and increased reliance on imports. It states “If no measures are taken, in the next 20-30 years 70% of the Union’s energy requirements as opposed to the current 50% will be covered by imported projects”. The EU Green Paper notes the spirit of Articles 2 and 6 of the Treaty of Europe and states that, “The European Union’s long-term strategy for energy supply security must be geared to ensuring, for the well-being of its citizens and the proper functioning of the economy, the uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers (private and industrial), while respecting environmental concerns and looking towards sustainable development, as enshrined in Articles 2 and 6 of the Treaty on European Union.”*

In Ireland’s case there is now some urgency about the need to make further discoveries of indigenous gas. Ireland imports more than 80% of its gas requirement and to date the UK has been its primary source. In 2005 the UK became a net importer of gas as its own indigenous production does not meet its requirements. Until there is production from the Corrib Field the likely source for future Irish gas imports is Eastern Europe. This brings with it issues of security of supply, price stability/volatility and cost. On top of the purchase cost of the gas there is the transport cost over a significant distance. Government policy is to maintain the present licensing and fiscal terms and to continue to promote exploration in the Irish offshore.

## 1.4 Oil and gas licensing context

The DCENR administers Ireland’s regime of licensing for oil and gas exploration and production. The principal relevant statute is the Petroleum and Other Minerals Development Act 1960 applied to the Irish offshore, comprising the territorial waters of the State and offshore areas designated by Order from time to time under the Continental Shelf Act.

The acquisition of seismic data in Irish offshore waters started in 1965 and the first licensing authorisations were granted in 1970. According to DCENR data, 177 wells of all types have been drilled at separate locations in offshore Irish waters between 1970 and 2006 (PAD, 2008).

The acreage on offer in the current Frontier Licensing Round will cover unlicensed blocks in an area of approximately 117,100 square kilometres. The area has been classified as Frontier acreage because of the challenging environment off Ireland’s west and northwest coasts. Successful applicants will be offered Frontier Exploration Licences in 2009 that will last 15 years, as detailed in the Draft Plan and summarised below. The licence period will be divided into four phases, each with work obligations as follows.

First phase	1 September 2009 to 31 August 2012 - seismic data acquisition
Second phase	1 September 2012 to 31 August 2016 - at least one exploration well
Third phase	1 September 2016 to 31 August 2020 - at least one exploration well
Fourth phase	1 September 2020 to 31 August 2024 - to be agreed with the Minister

In the first phase, the licensee must undertake a work programme that shall generally include at a minimum 2D or 3D seismic data acquisition. Where exploration drilling is not included in the first phase, planning for drilling in the second phase should take place and be proposed prior to the start of the second phase. The third phase should include a proposal to drill a further exploration well. Licensees will be required to undertake reasonable site-specific environmental studies as may be appropriate to the work programmes. The Licensing Terms for Offshore Oil and Gas Exploration and Development, 2007 will apply to licences granted under the Round (see Section 3). The IOSEA3 covers the first and second phases only, ie the period 2009 to 2016. It is proposed that subsequent phases and licensing rounds for exploration in this area will be the subject of further SEA at a future date.



## 1.5 Organisation of the environmental report

The SEA Directive states outlines what needs to be covered in the environmental report (summarised in Section 1.2.2) and the contents are presented as follows:

**Non-technical summary** – a summary of the environmental report using non-technical language.

- Section 1 Introduction and background** – an introduction to the proposed plan within the context of the SEA Directive and current policies.
- Section 2 SEA process** – introduces the reader to the SEA process, summarises studies and surveys that have been undertaken and describes the consultation process.
- Section 3 Regulatory context** – this section places the IOSEA3 in context with other environmental regulation **and** the relationship with other plans and programmes.
- Section 4 Draft Plan and alternatives** – describes the proposed plan after consideration of alternatives.
- Section 5 Summary of environment baseline** – a description of the environment in the Rockall Basin area, summarised from a more detailed account presented in the Environment Baseline Annex to this report. Comprises the physical and chemical environment, the ecology, conservation interests and others sea users, followed by a summary of sensitivities and identification of data gaps.
- Section 6 Identification of potential impacts and concerns** – describes the methods used to identify potential environmental impacts and concerns associated with the proposed plan.
- Section 7 Impact assessment for seismic activities** – a detailed assessment of each activity considered in Section 6 to have the potential for a significant environmental impact.
- Section 8 Impact assessment for exploratory and appraisal drilling activities** - a detailed assessment of each activity considered in Section 6 to have the potential for a significant environmental impact.
- Section 9 Cumulative impacts from implementing the Draft Plan**– an assessment of the potential for cumulative effects.
- Section 10 Mitigation and monitoring** – brings together mitigative measures and describes the overall management and monitoring procedures including any licensing conditions that may be applied.
- Section 11 Conclusions and recommendations**– provides an overall conclusion regarding the likely environmental implications of the proposed plan and makes recommendations.
- Section 12 References** – a list of all the references cited in the report.
- Section 13 Abbreviations** – definitions of acronyms mentioned in the report.
- Section 14 Glossary** – definitions or explanations of technical and jargon terms used in the report.
- Section 15 Acknowledgements**
- Appendix 1 Rockall Licensing Round Announcement** - Press release of April 2008 announcing the current licensing round.
- Appendix 2 The SEA Directive, and Statutory Instrument 435 of 2004** – The full text of Directive 2001/42/EC of the European Parliament, and relevant enacting statute.
- Appendix 3 The Harmonised Offshore Chemical Notifications Format (HOCNF) Schemes** - Details of how chemicals are tested and classified under the HOCNF scheme.
- Appendix 4 Offshore SACs notice** – Government notice to marine users off the proposed designation of offshore special areas of conservation (SACs).
- Annex Third Strategic Environmental Assessment for Oil and Gas Activity in Ireland's Offshore Atlantic Waters: IOSEA3 Rockall Basin - Environment baseline** – a detailed description of the environment in the Rockall Basin (which is summarised in Section 5 of the main Report).