Economic Assessment of the Corrib Gas Project

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Table of Contents

Executive Summary

Introduction

The Corrib Gas project will contribute over €3bn to Ireland's GDP over its lifespan, supplying approximately 60 per cent of the country's natural gas needs at peak production. The gas field is estimated to yield approximately one trillion cubic feet of natural over an operating life of fifteen to twenty years.

The Corrib Gas project will make a significant contribution to national energy policy by moderating Ireland's dependence on imported energy. It will also provide stable and economic energy supplies, enhancing the sustainability of existing industry in the Border Midlands Western Region.

The Corrib project has already led to a decision to extend the natural gas network to the North West. Already twelve towns are to receive natural gas. This expansion has been enabled by the construction of a Bord Gais pipeline connecting the Corrib gas-processing terminal to the main Bord Gais network, a pipeline that will recover funds predominantly from the Corrib project.

As well as providing natural gas for homes in the region, this will make the North West a more attractive investment destination. Potential investors will be attracted by the availability of natural gas as a cheap, reliable source of energy. In addition the availability of natural gas may lead to electricity generation in the area, which could improve the reliability of electricity supplies. As well as being a benefit for the residents of the area, this is in line with the national need to promote balanced regional development.

During the construction phase of the project, the local Mayo economy will directly benefit by approximately €181m, with the national economy benefiting by a contribution of €521m to Irish GDP. The project will create over 800 jobs during the construction phase and an estimated 130 long-term jobs thereafter.

In addition, the region will benefit from the Corrib Gas Partners' existing and planned social investment activities – an indirect benefit from their presence in the community.

Successful completion of the Corrib project will encourage further energy exploration activity off the Irish coast.

Spending Effects

Completing the construction of the Corrib project, and operating the gas field for its life, will have significant benefits for the local and national economy:

- During construction an average of 815 jobs will be created in the Irish economy. This construction will have a similar impact on employment to a major industrial employer like Allergan, which employs some 600 people.
- While the field is operating it will support some 130 jobs. Approximately 55 people will be employed directly. A further 75 jobs will be created to supply the needs of the field and its employees.
- Construction of the Corrib project will add €521 million to Irish GDP.
- Significant purchases from local suppliers and contractors will ensure that €181 million of this extra GDP will arise in the local communities of Mayo and Donegal.
- The operation of the gas field will have a huge impact on GDP, by replacing imports of gas with Irish production. Over the life of the field, the Corrib project will add some €3bn to GDP.

Dynamic Effects

The presence of the Corrib operation and the effects it will have on suppliers will have a profound effect on decision making by other businesses. The climate for investment and expansion of businesses will improve significantly, boosting employment and economic activity.

Examples of the dynamic effects include:

- The project will contribute significantly to national energy policy. Ireland is excessively dependant on imported energy, in particular on imported natural gas. This problem is set to worsen unless domestic sources of energy such as the Corrib field are used. At its peak output, the field will meet approximately 60 per cent of Ireland's gas needs, reducing its dependence on imported energy. Corrib will be a reliable and secure source of clean energy for the Irish economy.

- Successful completion of the Corrib project will encourage further energy exploration activity off the Irish coast. If this project were not completed, it would be extremely difficult to attract other energy investors to Ireland. In addition, Ireland's attractiveness as a destination for foreign investment in general would be harmed.

- The Corrib project has already led to a decision to extend the natural gas network to the North West. Already twelve towns are to receive natural gas. This expansion has been enabled by the construction of a Bord Gáis pipeline connecting the Corrib gas-processing terminal to the main Bord Gáis network, a pipeline that will recover funds predominantly from the Corrib project. This brings significant benefits to homes and businesses in the area. In particular, natural gas is an economical and reliable energy source for industry in the region. Large industrial investors could also invest in gas fired CHP (Combined Heat and Power) plants making the area more attractive to these large potential investors.

- The Corrib Gas Partners have worked with local contractors and service providers to involve them in the construction of the facilities. The increased skills and capacities of these businesses will be of long term benefit to them and their employees, and will also make the region more attractive to other investors.

- Successful completion of the Corrib project could lead to further large investments in gas distribution and electricity generation in the North West. Feasibility studies are already taking place for such investments.

- The new Corrib infrastructure potentially has the capability to support the provision of additional local services. It may be possible, for example, to utilise some of the Corrib infrastructure to make broadband facilities available in the region, enabling this important investment to take place earlier than may occur otherwise.

- The Corrib project, as well as being a benefit for the residents of the region, will make the West of Ireland a more attractive investment location. This is all the more vital given the structural problems in the regional economy and the challenges it now faces in an era of lower economic growth.

1. Introduction

Earlier this year, the Corrib Gas Partners (Shell, Statoil and Marathon) asked Goodbody Economic Consultants to investigate the economic benefits of the Corrib project

1.1 Overview of the Corrib Project

A medium-sized gas field has been discovered off the North West coast of Ireland. The Corrib Gas Partners are investing in this valuable resource, so that the gas can be brought ashore in Ireland. This is a commercial venture for Shell and its partners. However, it will have significant benefits for the Irish economy and for the area of the country where investments are being made.

Construction of the necessary infrastructure has already started. Industry commentators estimate that up to one trillion cubic feet of natural gas will be extracted from the field and sold over the next twenty years.

The Corrib natural gas field was discovered in 1996 by Enterprise Oil. The field lies 83 kilometres off the Mayo coast, approximately 3,000 metres under the seabed in waters that are 350 metres deep. Between 1998 and 2001, additional exploration wells were drilled to gain a better idea of the size and scope of the reservoir. Enterprise Oil was subsequently acquired by Shell in 2002.

Shell E&P Ireland Ltd is the operator of the Corrib project, holding a 45 per cent stake. The other partners are Statoil Exploration (Ireland) Ltd, which holds a 36.5 per cent stake and Marathon International Petroleum Hibernia Ltd, which holds the remaining 18.5 per cent stake.

1.2 Development of the Corrib Project

The Corrib project will operate as a sub sea production facility with onshore processing. There are essentially four parts to the Corrib project:

- The offshore operations including the wells and sub sea facilities;
- The offshore section of the pipeline;
- The onshore section of the pipeline; and,
- The terminal for treating gas at Bellanaboy Bridge, Co. Mayo.

All of the equipment at the Corrib field location is placed on the seabed. The water at the gas field is too deep for manned diving. If necessary a form of under water robot known as a “remotely operated vehicle” or ROVs can be deployed to assist drilling operations on the seabed.

Five wells were drilled in the Corrib field prior to 2001 to exploit the reservoir. One was found to be unsuitable for production and a replacement well was drilled in 2007. A sixth potential well is planned. Two wells were re-entered and completed in 2006/7 to make them ready for production. Further production wells will be completed during the 2008 operating season.

The offshore section of the gas pipeline will be laid from a pipe-laying barge on which pipe sections will be welded together, inspected and lowered to the seabed from the vessel. The onshore section of the gas pipeline will be trenched and buried along its entire route.

After arrival onshore the gas will be conditioned in a terminal at Bellanaboy to remove water and condensate and convert it into "sales gas". Following conditioning at the terminal it will be distributed via the Bord Gáis national network.

1.3 Layout of the Report

The remainder of this Report gives more detail on the above findings.

Section 2 describes the type of economic impact that a major infrastructure investment such as the Corrib project can have. It describes the ways in which such a project can have direct, indirect and induced spending impacts on GDP, employment and tax revenue. It goes on to explain the potentially far more significant dynamic effects such an investment can have on the local and national economy.

Section 3 identifies and quantifies the direct, indirect and induced spending effects of the construction phase of the Corrib project.

Section 4 identifies and quantifies the same types of spending effect that will arise from the operation of the Corrib project over the life of the gas field.

Section 5 identifies the dynamic effects of the Corrib project.

Section 6 draws together the results of this work into a set of conclusions on the economic impact of the Corrib project.

A set of Appendices provide further detail on:

- The study methodology and acknowledgements;
- Ireland's energy needs and energy policy; and,
- The economic background to Mayo and surrounding counties.

2. Potential Impact of an Infrastructure Project

2.1 Introduction

Major investment projects such as the Corrib project impact on the economy in two ways. Firstly, the spending arising from the construction and operation of the project boosts economic activity. Secondly, the presence of the new economic activity will have so called dynamic effects, as it encourages investments by other firms and changes the structure of the local and national economies.

These two types of effects, spending effects and dynamic effects, are described more fully below. The methods used to identify and quantify these effects for this Report are then described.

2.2 Spending Effects

The spending effects of an investment project such as the Corrib project arise both in the investment phase when the facility in question is being constructed, and during the operation of the facility. These spending effects can be measured in terms of jobs created and value added generated.

Employment
The construction and operation of the facility will give rise to additional employment. Although the Irish economy as a whole has been operating at or close to full employment for a number of years, there are still regions of the country where additional employment or an increase in the skill and income level of the employment opportunities available would be of benefit.

Value Added
The construction of a facility such as the Corrib project, and its subsequent operation will also give rise to measurable value added. This represents the contribution of the project to regional and national output (Gross Domestic Product).

This spending effect arises in three ways. These are referred to as the direct, indirect and induced spending effects.

2.2.1 Direct Spending Effect

The direct spending effect of a project is the most obvious and the easiest to measure. The entity carrying out the investment project will spend its own resources and this will give rise to direct employment, value added and tax revenue. In a large project such as the Corrib project these direct effects can be substantial as a significant number of highly skilled Shell employees are directly involved in planning and managing the investment phase of the

project. These employees represent a direct employment effect of the project, and give rise to direct value added.

During the operating phase of the project gas will be sent ashore, treated and transmitted into the Bord Gáis gas transmission system. This will require a significant number of direct employees. The earnings of these employees and the profit before interest and tax contributed by the Corrib operation will form part of regional value added and national GDP.

Values for these effects can be calculated from information gathered for accounting purposes by Shell.

2.2.2 Indirect Spending Effect

The next type of spending effect is the indirect effect. During the construction and operating phase of an investment project goods and services will be purchased from third party suppliers. For example, in the Corrib project, the vast majority of the cost of the investment phase is made up of payments to specialised contractors. This gives rise to employment and value added by these suppliers. These first round suppliers will, in turn purchase goods and services from their own suppliers giving rise to a further round of employment and value added. The extra spending from a major investment such as the Corrib project ripples through the rest of this economy in this way, giving rise to indirect spending effects on employment and value added.

A similar indirect effect on employment and value added will arise from the operation of the Corrib project during the life of the gas field.

The Central Statistics Office ("CSO") compiles an overall picture of the way in which the output of the economy is built up in this way. This is referred to as an Input-Output model of the economy. This model shows how the output of each sector of the economy is used as inputs for the other sectors of the economy, and how an increase in the output of one sector of the economy will lead to an increase in the demand for the outputs of the other sectors of the economy. This information is presented in a variety of formats by the CSO in its periodic publication of Input-Output tables for the Irish economy. The Central Statistics Office published the most current set of these Input-Output tables in February 2006[1]. One version of these tables captures the full ripple effect described above. This allows calculation of the full impact of the extra demand for goods and services from an investment project such as the Corrib project. It also allows calculation of the full indirect effect on value added of the operation of a major production facility such as the Corrib project during its operational life.

[1] "2000 Supply and Use and Input-Output Tables" Central Statistics Office, February 2006.

The estimates of indirect effects set out in Sections 3 and 4 of this Report have been calculated using the Input-Output tables published by the CSO and financial information from the Corrib Gas Partners.

2.2.3 Induced Spending Effect

Finally, a major investment such as the Corrib project will have what are referred to as induced effects. As described above, the investment and the operating phases of such a project will have both direct and indirect effects on employment, and so on wages and salaries paid to employees. These extra wages and salaries will be spent and will give rise to a further, induced, effect on the economy. This will represent a further round of spending effects on employment, value added and tax revenue.

This effect was estimated as follows:

- The consultants calculated a value for the relevant "marginal propensity to consume", i.e. the proportion of any extra income earned by Irish employees that would be spent, rather than taxed or saved;
- The estimates of the direct and indirect extra wages and salaries arising from the Corrib project already calculated were multiplied by this marginal propensity to consume to give an estimate of extra consumer spending;
- This estimate of additional consumer spending was split between the various sectors of the economy in line with current spending patterns; and,
- The effect of this extra spending on employment, value added and tax revenue was calculated in the same way as the direct effects discussed above.

2.3 Dynamic Effects

The spending impacts described above are all "static" i.e. the only effects identified and quantified are the increases in the employment and output by existing firms in the Irish economy.

These spending effects, therefore, represent the minimum extent of the economic effects of the Corrib project. In reality a project as significant as the Corrib project will have an effect on the investment decisions of other firms and on the productive capacity and technological capacity of the rest of the regional and national economy. These dynamic effects have the potential to be far more significant and valuable than the spending effects described above.

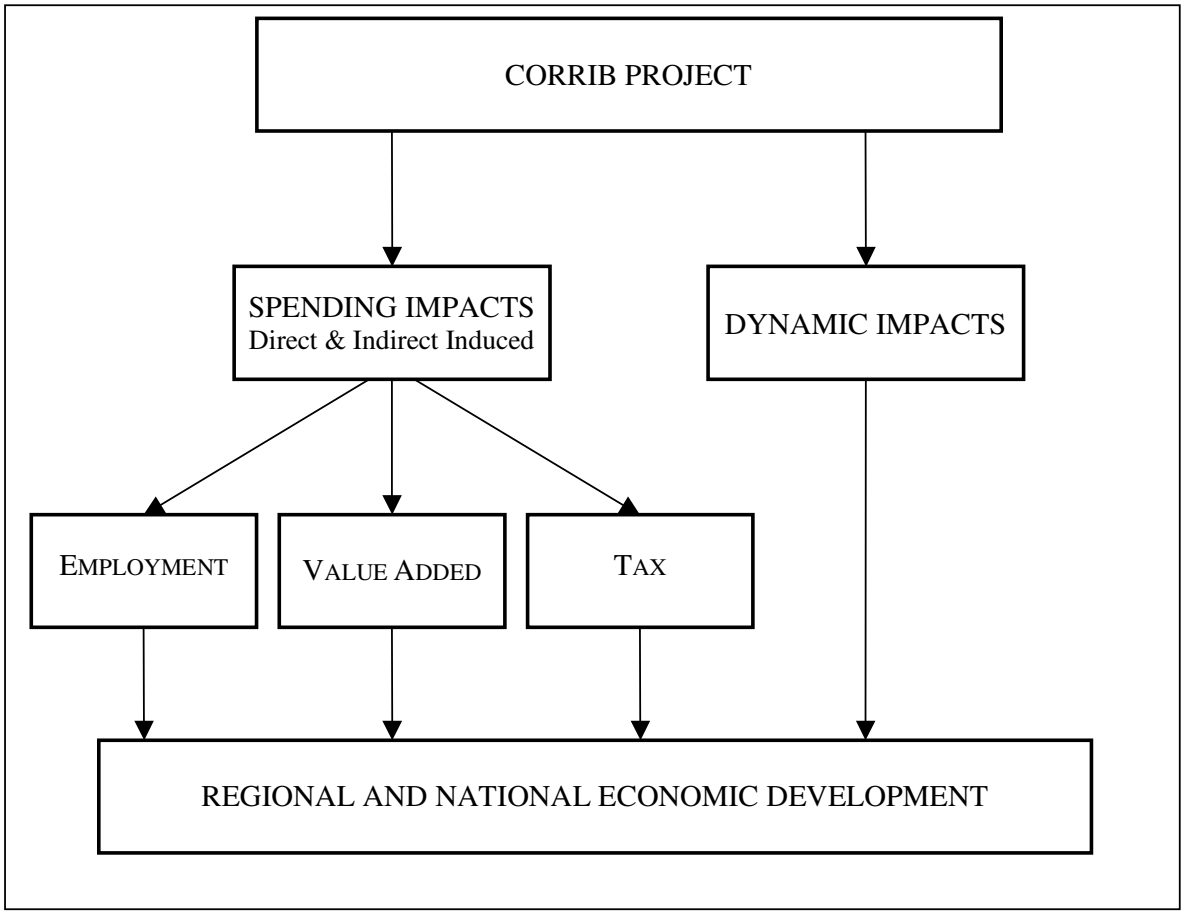
By their nature these effects are harder to identify and quantify, since they arise from changes in the decision making of firms other than the Corrib Gas Partners.

For the purposes of this Report the consultants carried out wide ranging consultations with a range of business and policy leaders to identify the potential dynamic effects of the successful completion of the Corrib project.

The consultants sought, and critically assessed, the views of the staff of Shell, Statoil and Marathon, business and community leaders in the area around the Corrib project, and key subcontractors of Shell in the project.

The relationship between the different types of economic effect is summarised in Figure 2.1 below.

Figure 2.1: Overview of Economic Effects of the Corrib Project



2.4 Social Investment by the Corrib Gas Partners

The main contribution of the Corrib Gas project to neighboring communities will be the provision of employment and contributions to the local and regional economies. However, an additional indirect benefit will be provided through social investment. Whilst not replacing the role of Government, social investment will help to achieve local social and economic development objectives (in collaboration with local communities).

The Corrib Gas Partners' social investment programme, already under way, consists of three tiers:

- Tier 1: a Local Grants Programme (2007 - 2009) awarding grants of up to €10,000 to local community groups;

- Tier 2: one-off investments (in 2007) in education, sport, and environmental projects (including a scholarships programme, granting 10 scholarships worth €4,000 per year to students in each year of study); and,

- Tier 3: a long-term Independent Fund (2008 onwards) supporting larger, sustainable social investment initiatives, and advised by a panel of representatives from local development agencies.

The programme will focus on financial assistance, but in-kind donations, such as equipment, or volunteers' time and expertise, will also play a part.

3. Spending Effects of Building the Corrib Project

3.1 Introduction

The Corrib project divides into two clear phases that will have different effects on the regional and national economy. In the first phase, a major piece of infrastructure will be constructed. In the second phase, this infrastructure will be operated to extract and distribute natural gas from the Corrib field. Both of these phases will have significant spending effects on the regional and national economy of the types described in Section 2. This Section of the Report presents the consultants calculations of the spending effect of the construction phase. Section 4 of the Report presents the calculated values of the spending effects of the operation of the Corrib project.

3.2 Employment Effects

Construction of the Bellananboy terminal and onshore pipeline started in December 2004 and continued until July 2005. Following a temporary suspension of activity, construction restarted in October 2006, and is scheduled to continue until mid 2009.

Throughout the period from the start of construction Shell has directly employed approximately 55 people in Ireland in the management and supervision of the project.

Contractors carry out the vast bulk of the construction work. The number of persons employed by these contractors will vary over the period of construction. The number of persons working for the contractors at the site will reach approximately 530 by the end of 2007 and continue to increase thereafter. Construction activity will reach a peak in early 2008 when over 600 contractor staff will be working at the site. These jobs have been included under the heading of "indirect employment" as defined in Section 2 above. As is described in Section 2 these employees of contractors only represent a "first round" of indirect employment arising from the project. An estimate of the additional employment generated in firms that supply these contractors, and other suppliers has been calculated using the Input–Output model of the economy described above. As the level of activity and employment has fluctuated greatly to date, and as this will continue, the estimates of the employment effects of the construction phase of the Corrib project have been calculated in "person years". The indirect employment arising from the project is estimated as being 3,517 person years. This is equivalent to an average of approximately 590 persons employed for the full six years of the construction phase.

A value for the amount of "induced employment" arising from the construction phase of the Corrib project has also been calculated. As is described in Section 3 above, the amount of consumption that would arise from the wages and salaries paid to direct and indirect employees was

calculated and split by industry sector. The effect of this extra spending on the output produced, and wages and salaries paid by these sectors in the Irish economy was then calculated based on an Input-Output model of the Irish economy. This value for induced wages and salaries was expressed as an equivalent number of full time jobs by applying an average cost of labour in the Irish economy. As before this estimate has been calculated in terms of person years. The calculated value for induced employment of 1,021 is equivalent to approximately 170 persons employed for the full six years of the construction phase.

These values for the employment effect of the spending on the construction phase of the Corrib project are summarised in Table 3.1 below:

Table 3.1: Employment Effect of the Construction of the Corrib Project

Employment Type	Full Time Job Equivalents
Direct	55
Indirect	590
Induced	170
Total	815

Source: Goodbody Economic Consultants Calculation

3.3 Contribution to Gross Value Added

During the construction phase the direct effect of the Corrib project on national and regional value added is the gross labour cost incurred by Shell on the project.

The indirect value added effect arises in the firms that supply Shell. Jobs and output in these firms will be supported by the spending by Shell, which will give rise to an indirect effect on value added.

The people employed by Shell, and the indirect employees in Shell's suppliers will all spend their wages and salaries. This will give rise to a further, "induced" effect on value added and employment.

Total spending on the investment phase of the Corrib project was analysed between spending in Ireland and sending in counties Mayo and Donegal. This allowed the calculation of values for the effect on value added of this spending on a national and regional basis. The national effect on value added is equivalent to the amount of national GDP that will arise from the construction of the Corrib project.

These values are set out in table 3.2 below.

Table 3.2: Value Added Effect of the Construction of the Corrib Project

Value Added Type	Ireland €m	Mayo & Donegal €m
Direct	37	5
Indirect	392	146
Induced	92	31
Total	521	181

Source: Goodbody Economic Consultants Calculation

4. Spending Effects of Operating the Corrib Project

4.1 Introduction

Once the construction of the Corrib project is complete it will operated for a number of years, bringing natural gas ashore from the Corrib field, preparing it for use and transmitting it to the Bord Gáis gas grid. This operating phase will have significant spending effects on the national and regional economy. The extent of these effects will depend on the volume of natural gas that is eventually extracted, treated and distributed through the Corrib facility.

For the purpose of this Report the consultants used an estimate of one trillion cubic feet for the total volume of natural gas that will be produced from the Corrib field and pressed through the Corrib facility. It is further estimated that this natural gas will be extracted, treated and sold over a period of approximately fifteen to twenty years.

On this basis, the consultants calculated the spending impact of the operation of the Corrib project over its useful life. These estimates are set out below.

4.2 Employment Effect

Shell estimates that some 55 people will be directly employed by the Corrib Gas Partners during the life of the field. This life is estimated to be twenty years. Shell has also provided details of their likely purchases of goods and services from Irish suppliers over the life of the field.

Using a similar methodology to that applied to the construction phase, the consultants calculated the additional employment that this would give rise to in suppliers. Assuming that this extra employment is spread over a twenty year life for the field this would be the equivalent of a further 54 full time jobs for twenty years. This is the indirect effect on employment of spending during the operation of the Corrib project.

Finally, the impact of these direct and indirect jobs and on consumption and so on further economic activity and employment was calculated. This induced effect on employment of the spending during the operation of the Corrib project is calculated to be 430 person years, the equivalent of a further 22 jobs over a twenty year life for the field.

The results of this work are summarised in Table 4.1 below.

Table 4.1: Employment Effect of the Operation of the Corrib Project

Employment Type	Full Time Job Equivalents
Direct	55
Indirect	54
Induced	22
Total	131

Source: Goodbody Economic Consultants Calculation

4.3 Contribution to Gross Value Added

Over the life of the field, the operation of the Corrib project will contribute to national and regional value added in two ways. The wages and salaries paid in Ireland and the profit earned on the sale of natural gas will both form part of regional gross value added and Gross Domestic product as measured on a national basis. The profit on the extraction and sale of natural gas will represent an increase in GDP as it represents the net effect of producing natural gas in the Irish economy rather than importing it from abroad. The value of this contribution to national income will depend on the volume of gas eventually recovered, the price secured for that gas as it is extracted and the future costs of operating the Corrib facility. All three of these variables are subject to a great deal of uncertainty. The consultants prepared an estimate of this spending impact on the following basis:

- It was assumed that one trillion cubic feet of natural gas would be recovered and sold through the Corrib facility.
- A current market price for this gas and a current Dollar/Euro exchange rate was applied to this volume of gas.
- Estimates of the total operating costs of the Corrib facility over the life of the field were prepared by Shell at current prices.

The proportion of the operating costs that are spent with Irish suppliers will give rise to an indirect effect on value added as the output of Irish firms increases to respond to this demand.

In addition the employees of Shell, and the extra employees engaged in response to the indirect increase in gross value added will give rise to an "induced" effect on gross value added as they spend their salaries and wages, at least partly, in the Irish economy. In total the operation of the Corrib project will contribute some €3bn to Irish GDP over the life of the natural gas field. This figure represents the effect on GDP of completing and operating the Corrib project.

The results of this work are summarised in Table 4.2 below.

Table 4.2: Value Added Effect of the Operation of the Corrib Project

Value Added Type	Ireland €m
Direct	2,841
Indirect	78
Induced	39
Total	2,958

Source: Goodbody Economic Consultants Calculation

5. Dynamic Effects of the Corrib Project

5.1 Introduction

The effects described and quantified in Sections 3 and 4 of this report are all "static" i.e. they are the effects that would arise assuming that no other firm changed its investment decisions in response to the Corrib project. In reality the Corrib project will change the environment in which other firms make investment decisions and will have an effect on these decisions. These dynamic effects are likely to be at least as significant as the static effects already identified. Some of these dynamic effects are already being felt at this early stage of the construction of the project.

The Corrib project will have significant impacts at both national and regional levels. The regional level is particularly important at the present time. While the West Region has advanced substantially in economic terms in recent years, the structure of the economy of the West Region leaves it vulnerable. It has the second lowest level of earnings per worker of any region (see Appendix A3). Moreover, the Region is reliant on agriculture, construction and tourism to a greater extent than other regions. It is particularly poor in terms of the business service sector, which is emerging as a key engine of growth. The sectors that the Region relies on are facing difficulties: agriculture is in long term decline, the construction sector and house building are returning to lower more sustainable levels of output, and tourism is challenged by the deterioration in price competitiveness of the Irish economy. The positive boost to the West Region from the Corrib project is all the more important in the changed economic circumstances that Ireland now faces.

5.2 Contribution to National Energy Supply

5.2.1 Introduction

Ireland is extremely dependant on imported energy. We are particularly dependant on imported natural gas. This dependence is set to increase in the future as:

- Our energy needs continue to increase;
- The share of natural gas in energy use continues to increase; and
- Existing domestic sources of natural gas run out.

The Corrib field has an important role to play in meeting the demand for natural gas while minimising dependence on energy imports.

5.2.2 Current Dependence on Imports

Ireland depends on imports for practically all of its energy needs. The 2005 "Energy Balance" published by Sustainable Energy Ireland shows that only 10.7 per cent of Ireland's basic energy needs came from domestic sources, principally peat and natural gas, from the Kinsale field, which is near the end of its life. The bulk of our energy needs are met using imported oil, gas and coal.

Table 5.1: Energy Balance 2005 ('000 Tons of Oil Equivalent)

Energy Source	Domestic Production	Net Imports/stock changes	Primary Energy Use	Used for Electricity Generation	Final Consumption
Coal	-	1,832	1,832	(1,397)	435
Peat	810	(34)	776	(502)	274
Oil	-	8,960	8,960	(816)	8,144
Gas	462	3,015	3,477	(2,137)	1,340
Renewables	392	-	391	(180)	211
Electricity	-	176	176	1,918	2,094
Total	1,664	13,949	15,612	(3,114)	12,498
%	*10.7*	*89.3*	*100.0*		*80.1*

Source: Sustainable Energy Ireland

Ireland currently imports the bulk of its gas from the UK. However the UK is itself a net importer of gas. In strategic terms Ireland's supply of gas might only be as secure as the supply to the UK from the UK's least secure trading partner.

5.2.3 Future Trends

Overall energy use is forecast to continue to grow significantly over the coming years. This will increase our dependence on imported energy. The share of natural gas in total energy use is also set to increase.

Gas from the Kinsale fields currently accounts for almost 12 per cent of our natural gas needs. This is will decrease sharply in the near future as these fields come to the end of their life

The seriousness of this has been recognised in Government policy. The government has set out its strategic goals for energy policy in the recently published White Paper "Energy Policy Framework 2007-2020". One of these goals is; "Ensuring the physical security and reliability of gas supplies to

Ireland". Completing the Corrib project would be a major contribution to this goal. The White Paper acknowledges this.

Demand for energy is derived from other activity in the economy and so has been increasing constantly as the economy grows. In their review of trends in energy consumption for the "Medium-Term Review 2005-2012", the ESRI notes that growth in energy demand was almost exactly correlated with GNP from 1970 to 1990. Since 1990, energy demand has "decoupled" somewhat from GNP and has grown at a slower rate than GNP. The ESRI attributes this to the following:

- Economic growth now takes place in less energy intensive sectors;
- Consumers are switching from solid fuels to more efficient fuels such as natural gas;
- The household sector is reaching saturation in terms of energy use per household and future growth in demand will be slower; and,
- There has been a long-term trend towards more energy efficiency since the oil price shocks of the 1970s.

Using their models of the energy sector, the ESRI make the following forecasts of final energy consumption by fuel over the period to 2015.

Table 5.2: Forecast Primary Energy Demand 2005 – 2015 ('000 TOE)

Energy Source	2005	2010	2015	2005-2010 % growth per annum	2010-2015 % growth per annum
Coal	1,995	2,168	1,488	1.7	(7.2)
Peat	925	834	687	(2.1)	(3.8)
Oil	8,784	9,471	10,341	1.5	1.8
Gas	3,918	5,320	6,123	6.3	2.9
Renewables	294	411	489	7.0	3.5
Electricity[2]	71	153	209	16.8	6.4
Total	15,987	18,358	19,338	2.8	1.0

Source: ESRI Medium Term Review 2005-2012 "High growth forecast"

The total consumption of energy is forecast to increase by 21 per cent between 2005 and 2015. The share of gas in total energy use is also forecast to increase, reflecting the increased use of gas in electricity generation and for domestic use. The share of gas in total energy use is forecast to increase from 25 per cent to 32 percent. The combined effect of these two trends will lead to the

[2] Primary energy demand includes electricity "imported via an interconnector". The energy sources used to generate electricity in Ireland are included in primary energy demand.

total requirement for gas increasing from approximately 4 million TOE[3] to 6.1m TOE over the ten years to 2015.

5.2.4 Potential Role of Gas from Corrib

Without the natural gas from the Corrib field, Ireland will be importing 94 per cent of its total energy needs by 2015. The gas from Corrib could replace a significant amount of these imports. When Corrib is at peak production it could account for up to 17 per cent of total energy needs and imports of energy could drop to 76 per cent of total needs.

Natural gas from the Corrib field will significantly reduce Ireland's dependence on imported energy and in particular its dependence on imported natural gas.

The one trillion cubic feet of gas estimated to be available, is equivalent to 24m tonnes of oil equivalent. This will be a significant proportion of Ireland's gas needs. For example, this would represent seven years' gas needs at current rates of use. The gas will be extracted gradually over the life of the field. Current projections of the rate of gas production indicate that at peak production the field could account for approximately 60 per cent of Ireland's gas needs. Without Corrib, we will be importing 99 per cent of our natural gas needs by 2015.

To illustrate the potential impact of the Corrib field, the Consultants prepared a scenario for future energy use between 2010 and 2015 based on the ESRI forecasts and a forecast of production from the Corrib and Kinsale fields. This is set out in Table 5.3 and Figure 5.1 below. The main assumptions underlying this scenario are:

- The output from Kinsale declines in line with the forecast peak use of the gas grid by Kinsale in the CER's latest "Gas Capacity Statement".
- The estimated reserves at Corrib are extracted following a typical profile for such a field.
- Energy use follows the forecast devised by the ESRI in their "Medium Term Outlook".

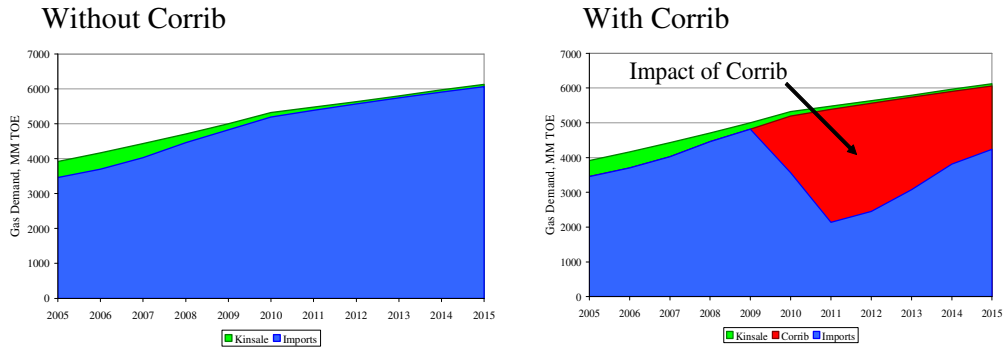
By 2010, the Kinsale gas fields will no longer be producing significant amounts of natural gas. Corrib is the only alternative domestic supply currently identified.

[3] Tons of Oil Equivalent ("TOE")

Table 5.3: Scenario for Future Energy Use 2010 - 2015

Energy Source	2010		2011		2012		2013		2014		2015	
	TOE	%	TOE	%	TOE	%	TOE	%	TOE	%	TOE	%
Corrib Gas	1,624	8.8%	3,248	17.5%	3,116	16.7%	2,657	14.1%	2,095	11.0%	1,822	9.4%
Kinsale Gas	129	0.7%	89	0.5%	69	0.3%	60	0.3%	60	0.3%	60	0.3%
Total Domestic Gas	1,753	9.5%	3,337	18.0%	3,185	17.0%	2,717	14.4%	2,155	11.3%	1,882	9.7%
Imported Gas	3,567	19.5%	2,138	11.6%	2,448	13.1%	3,080	16.3%	3,810	19.9%	4,241	21.9%
Total Gas	5,320	29.0%	5,474	29.6%	5,633	30.1%	5,796	30.7%	5,964	31.2%	6,123	31.7%
Coal	2,168	11.8%	2,012	10.9%	1,867	10.0%	1,733	9.2%	1,608	8.4%	1,488	7.7%
Peat	834	4.5%	802	4.3%	772	4.1%	742	3.9%	714	3.7%	687	3.6%
Oil	9,471	51.6%	9,641	52.1%	9,815	52.5%	9,992	52.9%	10,172	53.2%	10,341	53.5%
Renewables	411	2.2%	425	2.3%	440	2.4%	456	2.4%	472	2.5%	489	2.5%
Electricity	153	0.8%	163	0.9%	173	0.9%	184	1.0%	196	1.0%	209	1.1%
Total	18,357		18,518		18,700		18,903		19,126		19,337	

Figure 5.1: Scenario for Future Natural Gas Use 2010 - 2015



5.3 Additional Exploration Activity

The Corrib Gas Partners have made a commercial decision to proceed with the Corrib project. This decision is based on the expected size of the field, the expected costs of extracting and distributing the natural gas and the licensing and tax regime in place. Once the Corrib project is in place, the environment in which future decisions to explore for natural gas will have changed and there will be a higher level of exploration for natural gas off the North West coast of Ireland and a greater likelihood of any gas finds being commercial. This will arise for a number of reasons:

- Successful completion of the Corrib project will establish that the infrastructure and political and legal environment in Ireland is suitable for exploration and development of natural resources
- In the future there will be spare capacity on the infrastructure at Bellanaboy. This could reduce the cost of developing any smaller additional finds of gas that might be identified in the future, and could lead to future or extended employment opportunities.

5.4 Natural Gas for Existing Industry

Natural gas is an extremely advantageous energy source for businesses, particularly process type industries that consume large amounts of heat. When used to fuel a combined heat and power system it provides an efficient source of heating and electrical power to medium to large energy users. The availability of natural gas from the Kinsale Head natural gas field has been a factor in the growth and success of the process industry sector. Existing large investors in the North West such as Baxter and Allergan will benefit from the availability of natural gas, which is an economical and reliable source of energy. The availability of natural gas will also increase the attractiveness of Mayo and surrounding counties as a site for future industrial investment, and sustain balanced regional development. This is very badly needed in view of the structural weaknesses in the regional economy and the changed economic prospects for the country as a whole.

5.5 Natural Gas for Domestic Use

As part of the Corrib project, a gas transmission line is being constructed from Mayo to Galway, connecting to the rest of the Bord Gáis gas transmission network. This is largely being financed by transmission charges to be paid by the Corrib Gas Partners. Once this link to the gas transmission network is in place it changes the basis for decisions on supplying gas to consumers in the north and west of Ireland. Decisions to extend the gas network to additional towns have to be commercially justified to the CER by Bord Gáis. In the absence of the Corrib funded link from Mayo to the main gas transmission network it would not have been possible to justify extending gas distribution to large areas of the north and west of Ireland. However once this extra infrastructure is in place the costs of supplying gas to towns in these areas drops. As a result of this change, connections have been announced to twelve towns in Mayo and Galway[4]. This increase in the availability of clean and efficient energy to numerous households is a result of the Corrib project.

5.6 Electricity Generation and further Energy Infrastructure

The gas pipeline from Mayo to Galway has been constructed by Bord Gáis to support the Corrib project. However, the tariffs that the Corrib Gas Partners will pay for the use of the pipeline will allow Bord Gáis to recover the bulk of its cost. Now that this pipeline is in place other investments in energy infrastructure, including the extension of natural gas supplies to the North West, become viable. In fact Bord Gáis has already commenced a project to make gas available to eleven towns along the Mayo to Galway route. The first town to be connected, Castlebar, is scheduled to receive gas by the end of 2007, with all eleven towns expected to be connected by the end of 2009.

There is potential for further investments based on the presence of the gas pipeline. In February 2006, the Department of Communications, Marine and Natural Resources sought tenders for a "Feasibility Study and Cost Benefit Analysis" for a range of such projects. The Department wishes to investigate the viability of the following projects following completion of the Corrib project:

- Construction of a further natural gas pipeline from the new Mayo-Galway pipeline to Donegal Town.
- Construction of a gas fired electricity generation plant in the same area.

[4] "Bord Gáis to connect eleven new towns to natural gas network" Bord Gáis press release of 3rd November 2006. The towns in question are: Athenry, Craughwell, Headford and Tuam in Co. Galway and Ballina, Ballyhaunis, Castlebar, Claremorris, Crossmolina, Knock and Westport in Co. Mayo. Connection of Ballinrobe announced October 2007

This study was commissioned by the Department and is expected to be published in the coming months. This type of significant investment would bring further benefits to the region of the same scale as the static benefits of the Corrib project outlined in Sections 3 and 4 above. This clearly illustrates the potential of an investment such as the Corrib project to have substantial dynamic effects as it changes the environment in which future investment decisions are taken.

5.7 Increased Skills of Local Contractors

The analysis of spending effects in Sections 3 and 4 above has highlighted the use by the Corrib Gas Partners of local contractors in the construction and operation of the Corrib project. This involvement will have long lasting effects on the capabilities of some of these contractors. The Corrib Gas Partners have engaged with local contractors in ways that have developed their technical and business skills. This will improve the future prospects of these contractors. In addition, the availability of such skilled contractors will make the region more attractive to investors. This will lead to long term significant dynamic benefits for the regional economy.

5.8 Reliability of Electricity Supplies

Persistent problems with the capacity and reliability of the electricity grid in the north west of Ireland have long imposed cost on businesses in the area, and discouraged new investment in the area[5]. The completion of the Corrib project will potentially address this issue in two ways, so removing a major barrier to investment in the region.

- If the investment in electricity generation envisaged by the Department of Communications, Marine and Natural Resources take place this will involve an upgrading of the electricity grid in the region. In this way the completion of the Corrib project would lead to the necessary improvements in the electricity grid.
- Alternatively, the availability of natural gas to businesses in the area allows the use of combined heat and power plants by medium to large businesses to secure reliable supplies of electricity.

5.9 Additional Broadband Infrastructure

The Mayo - Galway gas pipeline already developed by Bord Gáis as a direct result of the Corrib project contains ducts that could potentially allow fibre

[5] See for example "More Effective Regional Policy & the Social Partnership Process" Section 2, BMW Assembly June 2005, available at www.bmwassembly.ie

optic cables to be laid along the route of the pipe and decrease the cost of any future expansion of broadband services to the area. Although there is no consent yet in place to lay this cable, once consent is achieved the rollout of broadband could happen quickly as a major cost element would have been removed.

5.10 Permanent Improvements in Local Infrastructure

Construction of the Corrib project has led to permanent improvements in the road and water infrastructure of the Erris region. The Corrib Gas Partners have spent €8.2m on road infrastructure and €1.4m on water infrastructure to date. Details of this spending are set out in Table 5.4 below. The benefits of this spending will be felt by the whole Erris community.

Table 5.4: Spending on Public Infrastrucutre by Corrib Partners

	€'000
Road improvements required by planning conditions	4,325
Road widening and repairs paid for by Corrib partners	1,666
Work on public roads by Corrib sub-contractors	2,115
Pavement repair Inver-Glengad	77
	8,183
New water main	1,394
Fire service equipment	14
Total infrastructure spending	9,591

Source: Corrib Gas Partners

6. Conclusions

The Corrib project is a commercial venture by the Corrib Gas Partners to extract and distribute natural gas from the Corrib gas field. Successful completion of this project will have wider effects on the local and national economy. Firstly, successful completion of this significant project will change the environment in which other exploration firms and the State make investment decisions for the better. This could have a number of significant benefits for the regional and national economy. Secondly employment by the Corrib Gas Partners and the purchase of goods and services from local suppliers will significantly boost the local and national economy.

The boost to economic activity from employment and spending by the Corrib Gas Partners will increase employment and economic activity during the construction and operation of the project.

An average of 815 jobs will be generated in the Irish economy over the period of construction of the Corrib project. Approximately one-third of this employment will be in counties Mayo and Donegal. During the operating life of the project, which is estimated to be twenty years, a further 131 jobs will be supported by the project.

The Construction of the Corrib project will add €521m to Irish GDP. Approximately €181m of this amount will arise in the local economies of Mayo and Donegal.

The operation of the project will have a very significant impact on GDP, principally by replacing imports of gas with local production. Over the life of the field the Corrib project will add some €3bn to GDP.

The broader economic effects of the project include:

- Corrib could meet approximately 60 per cent of Ireland's fast growing gas needs at peak production. This would significantly reduce its dependence on imported energy. Corrib is a reliable source of clean energy for the Irish economy. In general the Corrib project is a significant contribution to national energy policy.

- Successful completion of the Corrib project will encourage further energy exploration activity off the Irish coast. If it does not prove possible to complete the project it will be extremely difficult to attract other energy investors to Ireland. Ireland's attractiveness as a destination for foreign investment in general could be harmed.

- The Corrib project has already led to a decision to extend the natural gas network to the North West. This brings significant benefits to homes and businesses in the area. In particular natural gas is an economical and reliable energy source for industry in the region.

- Shell and its partners have worked with local contractors and service providers to involve them in the construction of the facilities. The increased skills and capacities of these businesses will benefit them and their employees in the long term, and will also make the region more attractive to other investors.

- Successful completion of the Corrib project could lead to further large investments in gas distribution and electricity generation in the North West. Feasibility studies are already taking place for such investments.

- Reliability of energy supplies has been a problem for large investors in the region, and has hampered efforts to attract further investment into the region. The availability of natural gas provides a reliable and economical energy source for large industrial investors. Large investors will be able to secure economical and reliable heat and electricity by investing in combined heat and power plants.

- As mentioned above, the Corrib project has led to an extension of the gas network to the North West. This new Corrib infrastructure potentially has the capability to support the provision of additional local services. It may be possible, for example, to utilise some of the Corrib infrastructure to make broadband facilities available in the region, enabling this important investment to take place earlier than may occur otherwise

- The Corrib project, as well as being a benefit for the residents of the region, will make the West of Ireland a more attractive investment destination. This is all the more vital given the structural problems in the regional economy and the challenges it now faces in an era of lower economic growth.

APPENDICES

A.1. Study Methodology and Acknowledgements

The study was based on:

- Desk research;
- Visits to the Bellanaboy Bridge site and surrounding area;
- Examination of financial information obtained from Shell;
- The calculation of the indirect and induced impacts of the Corrib project using an Input-Output model of the Irish economy; and,
- The identification of potential dynamic effects of the Corrib project on the regional and natural economy.

The desk research undertaken covered the following areas:

- General background and descriptive information on the Corrib project was obtained from materials published by Shell; press coverage of the Corrib project; and other material, such as the report on the Corrib project published by The Centre for Public Inquiry[6] and the report published by the Independent Mediator, Peter Cassells[7].

- The economic and regional policy context for the Corrib project was identified from the government's recent White Paper on Energy Policy; the latest ESRI medium term outlook[8] and the ESRI's most recent overview of energy policy[9].

- Background information on the particular economic and regional development issues affecting the North-West was obtained from the independent evaluation of the recently completed Regional Development Operational Programme for the Border Midlands and West Region of the National Development Plan 2000-2007; and the recently adopted Regional Development Operational Programme for the region.

This background research informed a series of meetings and discussions between the consultants and stakeholders and others knowledgeable about the Corrib project and its potential economic effects. These included:

- The staff of Shell in Dublin and Mayo;
- A visit to the site of the terminal facility at Bellanaboy and the surrounding area;

[6] "The Great Corrib Gas Controversy" Centre for Public Enquiry, November 2005
[7] "Proposed Corrib Gas Pipeline, Need for a comprehensive integrated solution, Report and Recommendations from Mediation" Peter Cassells, July 2006. Available at www.dcmnr.gov.ie
[8] "Medium Term Review 2005-2012" ESRI December 2005.
[9] "Aspects of Irish Energy Policy" ESRI Policy Research Series 57, September 2005.

- Representatives of Statoil and Marathon;
- The Department of Communications, Marine and Natural Resources;
- Ballina Chamber of Commerce;
- The Irish Offshore Operators Association;
- The Council for the West;
- Allergan;
- Hollister;
- A selection of business and community leaders in the Erris area; and,
- Key subcontractors used by Shell.

The calculation of the direct economic effects of the Corrib project based on financial information obtained from Shell and an Input-Output model of the economy is described in Section 4 of this Report.

A.2. Ireland's Energy Needs and Energy Policy

Current Government policy on energy is set out in a number of key policy documents, including: the social partnership agreement, Towards 2016; the National Development Plan 2007-2013; and, the recently published White Paper on energy, Delivering a Sustainable Energy Future for Ireland: Energy Policy Framework 2007-2020.

Towards 2016 provides a framework for meeting the economic and social challenges that lie ahead for Ireland. Energy policy has a key role to play in this framework enhancing Ireland's competitive advantage, and building sustainable social and economic development.

The NDP states that: "*It is imperative for a modern competitive economy to have reliable, secure and competitively priced energy available to it*".[10]

Under the Energy Programme of the National Development Plan 2007-2013, there will be investment in energy over the period of €8 billion. The overall strategic objective of the Energy Programme is to,

"…ensure security of energy supply nationally and regionally, which is competitively priced, in the long-term while meeting a high level of environmental standards".[11]

The Energy Programme of the NDP can be divided into three sub-programmes:

- The Strategic Energy Infrastructure Programme will see investment of over €1.25 billion in infrastructure projects including new electricity interconnection, improved gas interconnection and strategic reserve supply;
- The Sustainable Energy Sub-Programme will see at least €276 million invested in support of renewable energy, energy efficiency and innovation targets; and,
- The Semi-State Energy Companies Sub-Programme will see the semi-State energy companies[12] investing over €7 billion, mainly in the electricity and gas transmission and distribution networks, but also in new and modernised power generation and in wind energy projects.

Towards 2016 and the National Development Plan 2007-2013 informed and set the context for the recently published Energy Policy Framework 2007-

[10] *Towards 2016: Ten-Year Framework Social Partnership Agreement 2006-2015*. Government of Ireland, 2006.
[11] *National Development Plan 2007-2013: Transforming Ireland, A Better Quality of Life for All.* Government of Ireland, 2007.
[12] The semi-State energy companies include BGE, ESB, Bord na Móna and EirGrid.

2020. The Energy Policy Framework reiterates the three key priorities of Government policy on energy, namely security of supply, sustainability of supply, and competitiveness of supply.

With imported energy required to meet over 90 per cent of Irish energy needs, security of supply is seen as being crucial for the development of the economy and society as a whole. Security of supply requires that Ireland has reliable access to oil and gas supplies and the infrastructure in place to import, distribute and store gas and oil. The strategic goals that have been set within the Energy Policy Framework to meet this objective include:

- Ensuring that electricity supply consistently meets demand;
- Ensuring the physical security and reliability of gas supplies to Ireland;
- Enhancing the diversity of fuels used for power generation;
- Delivering electricity and gas to homes and businesses over efficient, reliable and secure networks;
- Creating a stable attractive environment for hydrocarbon exploration and production; and,
- Being prepared for energy supply disruptions.[13]

In relation to the second goal, ensuring the security and reliability of gas supplies, Government policy states that the Corrib project has a key role to play.

Substantial investment in the transmission network and the new pipelines recently completed (Mayo-Galway and South-North) will enable the indigenous gas find at Corrib to be brought to the market, assist in the development of an all-island gas network, and enable more communities to benefit from the availability of natural gas.[14]

The Energy Policy Framework also emphasises that Ireland's capacity to deliver a secure energy supply at competitive cost is critical if the economy is to continue to attract foreign direct investment, and if it is going to provide an environment that allows all sectors of Irish industry to compete in export and domestic markets.

The approach to delivering on policy objectives is seen by Government to be an integrated one, with key partners including Government, both semi-State and private enterprise within the energy sector itself, the Social Partners, the relevant counterparts in Northern Ireland and the research community. It is intended that interim reviews of the Energy Policy Framework will be carried out every two years, to report on progress made, and to adjust policy targets and actions as necessary. Five-yearly reviews, informed by public and

[13] *Delivering a Sustainable Energy Future for Ireland: Energy Policy Framework 2007-2020.* White Paper, March 2007.
[14] Ibid.

stakeholder consultation, will ensure that account is taken of developments made at national, EU and international levels.

A.3. Economic Background to Mayo and the Region

Population Growth

The results of Census 2006 indicate that Mayo has experienced population growth of 5.4 per cent since the last census. This is not as high as population growth for the State as a whole (8.2 per cent). This has occurred despite the fact that the Border, Midlands and Western region as a whole has seen population growth in line with the rest of the country.

Table A.3.1: Population Growth in Mayo and Surrounding Counties, 2002-2006

	2002	2006	% Change
Mayo	117,446	123,839	5.4
Galway	209,077	231,670	10.8
Roscommon	53,774	58,768	9.3
Sligo	58,200	60,894	4.6
Leitrim	25,799	28,950	12.2
Donegal	137,575	147,264	7.0
State	3,917,203	4,239,848	8.2

Source: Census 2006

Gross Value Added and Income Trends

Output is measured on a regional basis in terms of Gross Value Added (GVA). GVA is a measure of the value of goods and services produced in a region less the materials and services used which come from outside the region. The most recent GVA data available relate to 2004 and are calculated at regional level. As Table A3.2 indicates, between 1998 and 2004 the West Region experienced growth in line with the economy as a whole (86.0 per cent compared to 85.3 per cent).

Another indicator of economic development within a region is the average total income per person. CSO estimates of total income include primary income, social benefits and other current transfers. The data in Table 4.3 below restate the increased growth that the West and Border Regions have experienced over recent years, with both regions seeing higher growth in income per person between 1998 and 2004, than the country as a whole.

TableA.3.2: GVA at Basic Prices (€ millions) 1998-2004

	1998	2000	2002	2004	% Change '98-'04
West Region	5,154	7,104	7,916	9,589	86.0
Border Region	6,073	7,186	9,239	10,776	77.4
State	70,459	92,946	117,041	130,558	85.3

Source: CSO

However, when actual estimated income per person is considered, the regions are still lagging behind the national average. In 2004, estimated income per person in the west region was 6.2 per cent lower than the national average. It was 11.7 per cent lower than the national average in Mayo and 13.5 per cent lower in Roscommon. In the same year, estimated income per person in the border region was 8.4 per cent lower than the national average, with Donegal experiencing the most significance difference, having income per person that is 16.6 per cent lower than the national average.

Table A.3.3: Estimated Total Income per Person by County and Region, 1998-2004

	1998 (€)	2000 (€)	2002 (€)	2004 (€)	Change '98-'04 (%)
West Region	**13,225**	**15,904**	**19,065**	**21,776**	**64.7**
Mayo	12,549	15,110	17,877	20,509	63.4
Galway	13,840	16,629	20,005	22,920	65.6
Roscommon	12,387	14,854	18,008	20,093	62.2
Border Region	**13,142**	**15,624**	**18,702**	**21,260**	**61.8**
Donegal	12,320	14,254	17,288	19,361	57.2
Sligo	13,234	15,663	19,244	22,553	70.4
Leitrim	12,324	14,749	17,800	21,020	70.6
Cavan	12,648	15,072	18,108	20,853	64.9
Louth	15,044	18,235	20,904	23,291	54.8
Monaghan	12,615	15,362	18,616	21,423	69.8
State	**14,678**	**17,600**	**21,008**	**23,221**	**58.2**

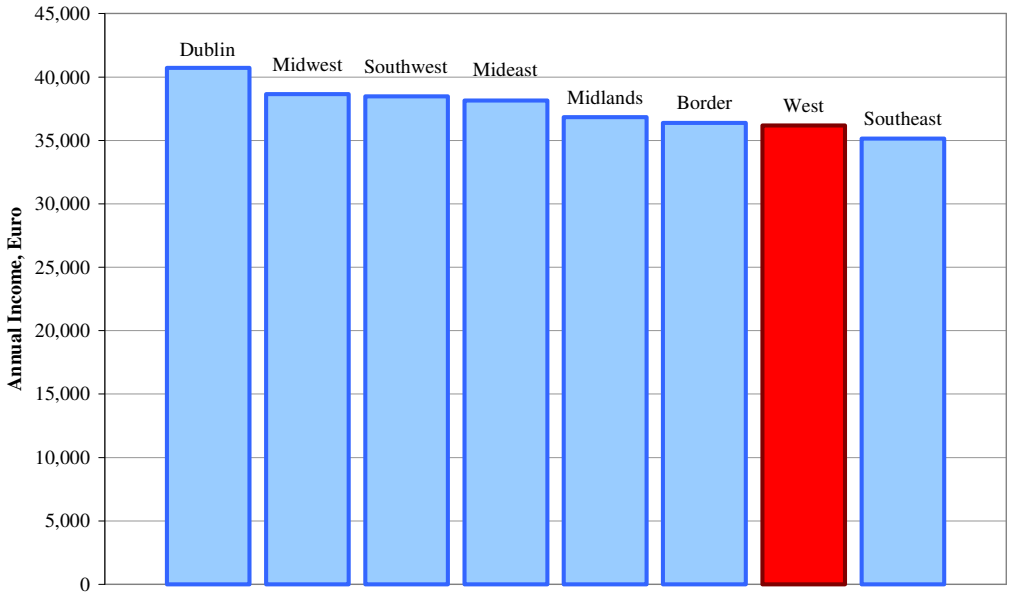
Source: CSO

Economic Structure of the West Region

While income per person in the West Region is some 6 per cent below the national average, this does not give a full picture of the strength of the regional economy. Firstly, the Region benefits significantly from State transfers. When

these are stripped out, primary income per head of the population in the West is 12 per cent below the State average and is the third lowest of any region. In fact, earned income per person at work is the second lowest in the State. This means that Region performs particularly poorly at supporting itself.

Figure A1.1: Earned income per Worker, 2004



This is a result of the industrial and employment structures in the West. Because of the small scale of economic activity in the West, the quality of jobs is not on a par with the country as a whole and there is over reliance on self-employment. While manufacturing industry has made strides, the West Region is over reliant on three sectors – agriculture, construction and tourism. In the West region, these account for more than one in four jobs as compared with the national average of one in five. In contrast, employment in the business service sector, which is the sector that is leading Ireland's economic development at present, is only two thirds of the State average.

The problem for the West Region at this juncture is that the sectors in which the Region excels are facing difficulties. Agriculture is in long term decline. The construction sector is entering a difficult period of readjusting to lower levels of output as house building activity returns to levels that are more sustainable in the long term. Tourism is under threat from a reduction in the price competitiveness of the Irish economy.

The West badly needs to improve its record in capturing inward investment. Such investment provides higher paid employment, reducing the need to rely on lowly paid self employment.