Infrastructure Investment Priorities

2010-2016

A Financial Framework

Department of Finance

July 2010

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Executive Summary

1. Introduction

This Review of capital investment sets out infrastructure investment priorities for the years 2010-2016 and in doing so fullfills the requirement to publish a revised set of investment priorities as pledged in the Renewed Programme for Government. The Review represents a reappraisal of the Government's Public Capital Programme, designed to re-focus investment plans and ready the Irish economy for a return to growth. The pace and depth of the changes which have beset the national economy over 2008 and 2009 have altered the environment in which infrastructure investment takes place and challenged the assumptions on which previous investment plans were founded. It is necessary, therefore, to reassess investment priorities in light of both changes in demand for infrastructure and affordability constraints given the very challenging fiscal position.

In the past, capital investment has been a key enabler of economic advancement, providing the capacity and scope for growth in national output. Appropriately targeted capital investment – as set out in this Review - can again be central to underpinning economic renewal.

The Review seeks to identify the optimum level of infrastructure investment and the sectors in which this investment will take place in order to:

- Contribute to economic recovery;
- Support employment;
- Deliver important social infrastructure; and
- Develop a low-carbon, Smart Economy.

The result of this analysis – which was supported by targeted external consultation with experts in academia and the private sector[1] – is a reoriented set of infrastructure investment priorities.

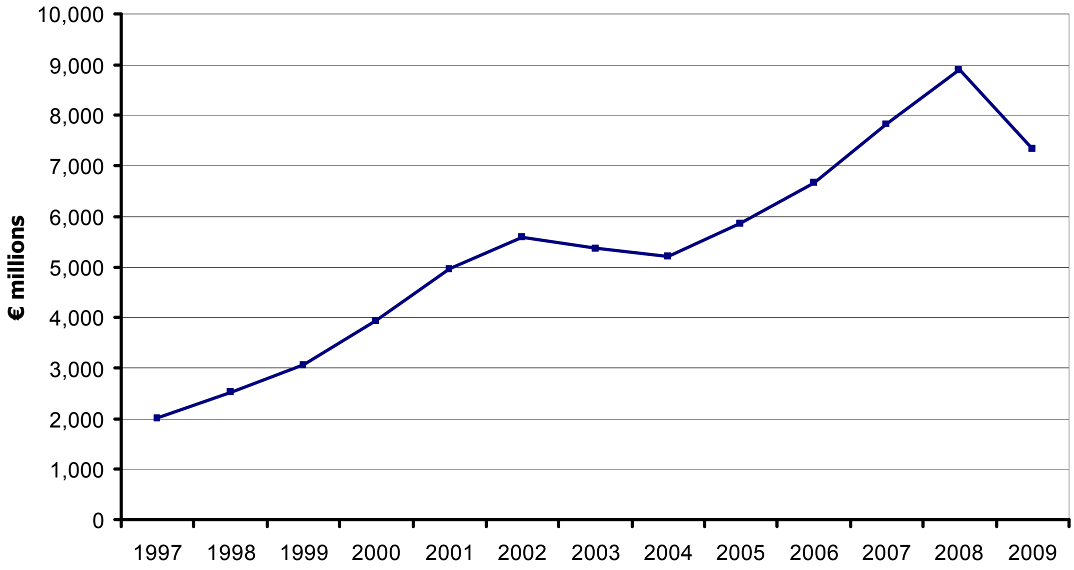
2. Macroeconomic and Budgetary Context

Exchequer capital investment has been significantly ramped up over the past decade, both in nominal terms and as a proportion of GNP. The chart overleaf illustrates the very significant increase over the period under consideration. This focus on infrastructure development over

[1] In particular, thanks are due to Professor John FitzGerald, Economic and Social Research Institute and to Mr Alan Gray, Managing Director, Indecon International Economic Consultants for helpful comments on the analysis and preliminary findings. The usual disclaimer applies.

the past decade succeeded in addressing many of the infrastructure deficits which had previously characterised the Irish economy.

Exchequer Capital Expenditure, 1997-2009



The economic developments which set the parameters for this review are well known: we now face a very challenging fiscal position, higher unemployment and shifting requirements for economic and social infrastructure. The circumstances prevailing are therefore in stark contrast with those prevailing when NDP 2007-2013 was launched.

Macroeconomic Developments Since Launch of NDP

The broad macroeconomic developments which have taken place in recent years have undermined the assumptions on which investment priorities set out in the NDP were predicated. These assumptions included

- 4 – 4½ percent GDP growth per annum in the years to 2013;
- A gradual decline in housing output; and
- A benign international environment.

Clearly then these conditions no longer hold and it is necessary to reappraise the ongoing validity of investment priorities, both in terms of changing demand for capacity in different sectors of the economy and affordability constraints.

Yet there is a need for continued investment. Provision of capital can assist in bolstering productivity; can contribute to the restoration of national competitiveness; can support sustainable employment; and can deliver much needed social infrastructure. While the changes in the structural composition of the economy will serve to mute the medium-term demand for capacity in some sectors, it is necessary to take a strategic, long-term view of capital provision in order to assess how the return on public investment can be maximised when growth reasserts itself.

In addition to reduced demand in a number of areas, improved value for money is now available in the procurement of public infrastructure: tender values are now somewhere in the region of 30 percent lower than those prevailing at the peak of the market. It is therefore the case that a very substantial level of capital stock can be achieved with a lower level of exchequer resources.

Capital investment can contribute to employment creation – estimates of the labour intensity of investment in infrastructure across sectors are in the range of eight to twelve jobs created per €1 million invested. Given the pace at which unemployment has risen over the past year, supporting employment must obviously be a key goal of policy. In this regard however the primary focus of capital investment should be on creating the framework conditions in which the enterprise sector can thrive and create longer-term, sustainable employment.

While the focus of this review is on exchequer capital investment, it is also important to note that the stock of infrastructure in the economy will also be expanded through investment by the commercial State bodies and investment financed through public-private partnerships (PPPs).

3. Analysis and Findings

This review seeks to identify the key priority areas for infrastructure investment given the prevailing economic conditions.

The major investment programmes of Government Departments were evaluated against the criteria underpinning this Review. A range of factors were considered such as: the rationale for Government spending in each area; progress in each sector in recent years in developing capacity; anticipated medium term demand for infrastructure given the contraction in aggregate economic activity; and required outputs and outcomes over the medium-term. Taking account of these analyses, an assessment is made in each area in relation to the appropriate funding allocations to each programme. The findings of department-by-department analysis are summarised below.

Department of Transport

- The programme of investment pursued over the past decade has transformed the quality and quantity of the stock of transport capital and the infrastructure deficit which previously characterised the transport network in Ireland has been significantly addressed.

- The expanded capacity levels achieved are likely to be sufficient to meet anticipated demand over the medium term in most areas.
- Nonetheless, further targeted investment has the potential to unlock productive capacity in the economy and enhance national competitiveness. Such investment will also offer alternatives to car transport, thereby reducing emissions and enabling the transport sector to cater for the demands associated with longer term population and employment growth in a sustainable manner.
- Projects recommended for investment are the completion of the Major Inter Urban-Routes (MIUs), and a number of remaining national roads projects of key strategic importance, such as aspects of the Atlantic Route Corridor and the N11. In addition to these projects, essential maintenance and a continued high level of investment in the regional roads network will be required.
- The Renewed Programme for Government commits to the advancement of Metro North and Dart Underground projects and, accordingly, the reprioritised Envelope set out for the Department of Transport also includes the upfront exchequer funding for these projects. Other public transport investment to be prioritised includes investment in the rail safety and traffic management programmes and continued planning of future priorities.
- Increased investment is also needed in walking and cycling infrastructure given the potentially large number of trips that can be accommodated on these environmentally sustainable modes.

Department of Environment, Heritage and Local Government

- Developments in the property market suggest that a new policy approach is appropriate for the housing capital programme. Incorporating a balance between leasing and building will present an opportunity to redeploy a significant degree of resources from the housing programme while still meeting a very high level of housing need.
- Nonetheless, very significant funding will be channelled toward regeneration and remediation of Local Authority estates, including large-scale regeneration projects in Limerick and Ballymun.
- Water services investment is a key priority and can deliver significant returns. There will be a continued need for investment in this area to achieve and maintain compliance with various requirements (including those arising from the implementation of the Water Framework Directive), to address issues in relation to

the condition of water infrastructure in key urban centres and to meet future demand requirements.

- Policy in this area is also geared toward reducing the level of water lost through leakages in the distribution network.
- Continued investment will be required in other areas such as waste management, the local government programme and other services.

Department of Education and Skills

- The stock of educational capital has been very significantly upgraded by investment in school building and maintenance and expansion and upgrading of higher education facilities and research space.
- Demographic developments are likely to exert further pressure on our stock of schools over the coming years.
- A continued high level of funding will be made available to the primary and second-level schools programmes over the medium-term. Given falling land values and tender prices, this will make it possible to substantially improve the stock of educational capital in real terms.
- In some cases, improvements and enhancement to the existing stock may offer a better alternative to new school builds.
- Regarding higher education infrastructure, targeted investment should proceed, where there is a robust economic case. The potential for more efficient use of existing infrastructure should also be explored.

Department of Enterprise, Trade and Innovation

- The programmes supported by D/ET&I and its agencies will be very important in achieving a return to economic growth through promoting the export potential of enterprise in Ireland.
- This Review provides for an unprecedented level of investment through the Enterprise Development Agencies.
- Investment in science, technology and innovation (STI) is a key pillar in the Government's Smart Economy Framework and a continued commitment to spending in this area is set out in this Review. Future policy will focus heavily on commercialisation of research outputs and transforming the enterprise base to drive economic renewal.
- Funding through IDA Ireland and Enterprise Ireland will be important in efforts to return to economic growth. It is critical that these agencies are flexible and adaptive to the needs of their client base while maintaining the highest standards in

investment project appraisal. A continued high level of funding will be required for these programmes.

- Regarding the broader STI agenda, increased targeting and a more efficient allocation of resources can be achieved through a unified funding stream for the entire STI policy sphere.

Department of Health and Children

- While there has been very significant investment in health capital and an improvement in the quality and quantity of infrastructure, there is scope for further improvement in the stock of health capital.
- A number of factors are driving a continued need for investment into the medium-term, in particular modernisation of health facilities to ensure efficient delivery of quality services, demographic factors and a more stringent regulatory environment.
- All future capital investment will be consistent with broad policy goals in relation to developing capacity in the primary community and continuing care areas and in modernising acute facilities.
- A substantial level of funding will be maintained into the medium-term. Given the enhanced opportunities for value for money, this will facilitate a considerable upgrade of infrastructure in real terms.

Department of Agriculture, Fisheries and Food

- The capital programme implemented by the Department of Agriculture, Fisheries and Food provides a comprehensive range of schemes for the development of on-farm infrastructure (in particular through the Farm Waste Management Scheme).
- Investment also targets development of marketing and processing facilities in the food industry and the development of the fisheries and forestry sectors.
- As well as the economic and benefits, the forestry programme, in particular, provides significant climate change benefits.
- Actual expenditure and further existing commitments have increased the level of investment to a very significant level in recent years.
- There is a requirement for further investment in the coming years which should be closely monitored to ensure maximum return for public investment.

Department of Communications, Energy and Natural Resources

- This Review sets out an investment of in excess of €1.2 billion over the 6 year period. This spending will complement and help leverage over €20 billion capital investment in energy and telecommunications infrastructure from the private and semi-state sector over the same period.

- Investment in energy programmes is designed to support the development of a competitive, low carbon and secure energy supply. Particular emphasis is placed on reducing energy use in our building stock, on making Ireland a world leader in the deployment of renewable energy supplies and on the development of a new industrial base in the use of ICT technologies to improve energy efficiency.
- Investment in ICT infrastructure is vital if Ireland is to emerge as a hub for globally-traded services and cloud computing. Investment in this area will deliver universal broadband within the next two years, continue to underpin private sector investment in Next Generation Networks and develop the digital skills of our citizens.

Office of Public Works

- In light of the economic contraction and very significant changes in the property market there will be downscaling of investment in office accommodation.
- Lower tender prices, pursuit of leasing solutions where suitable and increased efficiency in the use of the existing buildings asset base should be exploited to maximum effect.
- Ongoing investment will prioritise flood mitigation and relief.

Department of Tourism, Culture and Sport

- There has been very significant investment in sports, cultural and film infrastructure over the past number of years.
- Alongside the intrinsic value of cultural investment, significant economic benefits can be realised.
- There are substantial public health and community development benefits associated with sports investment.
- Investment over the past number of years has upgraded facilities across the range of sub-sectors and a number of headline projects such as the AVIVA Stadium (Lansdowne Road) and Conference Centre Dublin will deliver substantial benefits into the medium-term and beyond.
- Tourism is an important internationally traded service and will require a significant programme of investment over the 2010-2016 period. This will support the tourism industry in contributing to national economic recovery and can deliver strong employment benefits in the delivery phase of new works.
- There will therefore be continued investment across these sectors into the medium-term.

Department of Justice and Law Reform

- Significant investments have been made in programmes such as detention centres, the courts infrastructure and ICT systems to support the activities of the Garda Síochána.
- There will be a continued need for selective investment in detention facilities to address shortages in places. As resources permit, existing courthouses will be upgraded and new courthouses provided.

Department of Community, Equality and Gaeltacht Affairs

- There has been considerable investment in Community, Rural and Gaeltacht infrastructure over the past number of years, supporting the development of community and rural life and contributing major new infrastructure to the islands.
- Further funding will be required under certain programmes (principally LEADER) although given the need to maximise economic and social return on investment, the same levels of investment as recent years cannot be sustained.
- A number of investment programmes under the aegis of D/CE&GA fund investment are analogous to mainstream investment programmes in larger Departments. In future, any residual or ongoing investment needs should be funded by the Government Department which has primary sectoral responsibility, in consultation with D/CE&GA where appropriate.

4. A New Direction in Infrastructure Investment

The analysis set out in this Review gives rise to shifting priorities for capital expenditure. The box opposite identifies the areas where it is considered that the return on scarce public resources can be maximised.

Retuning Capital Investment for Growth

Based on the foregoing analysis, the following areas are prioritised in the Public Capital Programme

- *Strategic STI investment at the core of the smart economy*
- *The Enterprise Development Agencies*
- *Water services investment*
- *Key strategic transport infrastructure*
- *Investment in education infrastructure*
- *Energy efficiency supports*
- *Health capital investment*
- *Funding to boost the tourism sector*
- *Regeneration of Local Authority Housing, including major projects in Limerick and Ballymun*

It is also proposed that significant savings can be realised over the course of the capital envelope owing to

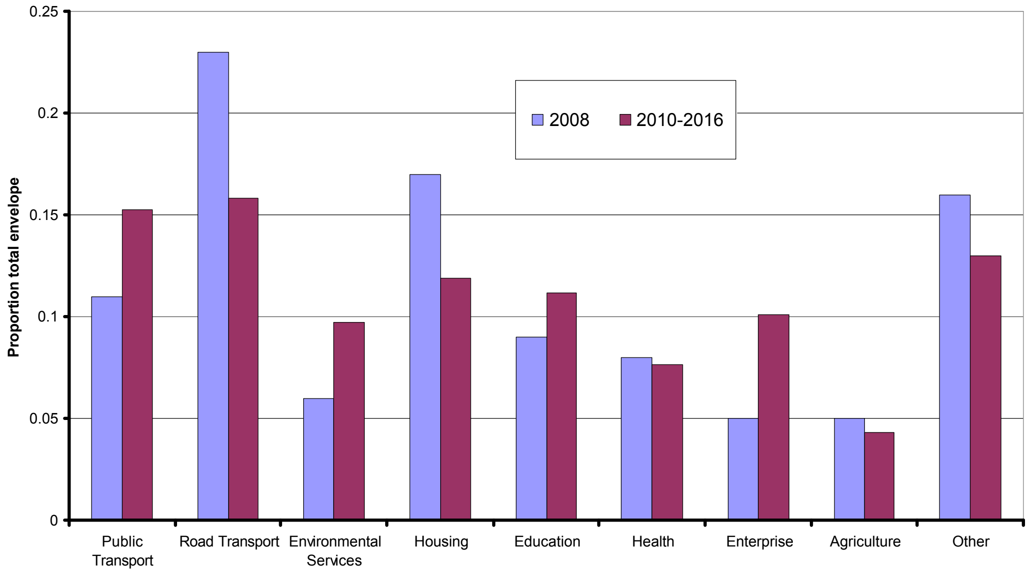
- The enhanced quantity and quality of capital stock achieved in recent years;
- A lower demand for capacity in the economy over the medium-term; and
- Improved opportunities for value for money.

A high level of capital stock – relative to demand – can therefore be supplied from a lower level of nominal expenditure.

The revised Public Capital Programme also incorporates a new 'Capital Reserve Fund'. This Fund will be used to finance emerging investment priorities which may arise over the medium term. The Fund will only be drawn upon in circumstances where economic developments present emerging opportunities for investments which produce demonstrable net benefits to the State.

The net effect of the revised capital investment programme in the years to 2016 is a refocused set of priorities which can assist in economic recovery and the important transition to a low carbon economy. The focus is on the outcomes that this investment can bring. The new direction of investment policy is also evident in changing allocations to each area as illustrated by the chart overleaf.

Changing Infrastructure Investment Priorities



Among the key trends discernable from the new direction in infrastructure investment are:

- A move away from road transport in favour of public transport, reflecting the fact that the motorway network between Dublin and the main regional centres is substantially complete and a high-level policy shift in favour of public transport;
- A very significant increase in the focus on water services investment (included above in 'environmental services') driven by the need to address remaining deficiencies in water infrastructure in key urban areas and the need to meet pressing environmental targets;
- A reduction in the allocation to housing programmes owing to the major changes in that sector; and
- A doubling of the share of total investment delivered through the Enterprise Development Agencies demonstrating the commitment to realising the goals of the Smart Economy and the need to return to sustainable employment creation.

These policy shifts are fully consistent with the Renewed Programme for Government and the goals of the Smart Economy Framework. The medium-term focus of capital investment will deliver many important outcomes including:

- Long-term, sustainable employment creation through the Enterprise Development Agencies;
- Reduced journey times on our major inter-urban road routes;
- A modal shift towards public transport over the medium-term;
- Significant progress in meeting social housing need;
- Progress in making the final steps to full compliance with water services standards;

- Expansion of our schools and higher education capacity to satisfy demographic demands;
- Major enhancements in our innovation infrastructure and further development of the stock of human capital required to make the Smart Economy a reality;
- The achievement of untapped economies and environmental benefits through the National Retrofit Programme;
- Enhancement of our communications infrastructure;
- Improved health sector infrastructure; and
- An enhanced tourism product offering.

These outcomes will be delivered through a multitude of projects across the various sectors. Many of these projects are already underway or will be underway shortly. In the short-term key projects include:

- The completion of motor-way connections between Dublin and the main regional centres;
- The completion and opening of Conference Centre Dublin;
- Progress on the remaining stages of the Ballymun Regeneration project and the initiation of Phase 1 of Limerick Regeneration;
- The commencement of Metro North and DART Underground, subject to Government decision;
- The suite of projects nationwide contained in the *Water Services Investment Programme, 2010 – 2012*; and
- A range of small scale tourism projects also on a nationwide basis.

Taken together, the allocations contained in this Report – presented overleaf - represent the optimum configuration of investment to enable a return to enterprise-led growth and sustainable employment creation.

Public Capital Investment Programme, 2010 - 2016									
Department	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2010-‘16**	**% of total allocated**
Agriculture, Fisheries and Food	430	350	170	170	170	170	170	**1,630**	*4.3%*
Communications, Energy & Natural Resources	172	170	186	186	186	186	186	**1,272**	*3.4%*
Community, Equality & Gaeltacht Affairs	105	86	86	86	40	30	30	**463**	*1.2%*
Defence	16	13	14	14	14	14	14	**99**	*0.3%*
Education and Skills	706	594	585	575	570	580	615	**4,225**	*11.2%*
Enterprise , Trade & Innovation	481	523	557	567	572	562	527	**3,789**	*10.0%*
Environment Heritage & Local Government	1,509	1,253	1,250	1,250	1,100	1,100	1,100	**8,562**	*22.7%*
Finance [Less OPW]	6	5	5	5	5	5	5	**36**	*0.1%*
OPW	158	140	140	140	140	140	140	**998**	*2.6%*
Foreign Affairs	10	4	4	4	4	4	4	**34**	*0.1%*
Health & Children	491	400	400	400	400	400	400	**2,891**	*7.7%*
Justice and Law Reform	123	90	90	90	90	90	90	**663**	*1.8%*
Social Protection	10	7	7	7	6	6	6	**49**	*0.1%*
Tourism, Culture, & Sport	132	120	120	120	110	110	110	**822**	*2.2%*
Transport	2,081	1,740	1,550	1,765	1,745	1,645	1,645	**12,171**	*32.3%*
Capital Reserve Fund	-	5	336	121	348	458	458	**1,726**	
Total	**6,430**	**5,500**	**5,500**	**5,500**	**5,500**	**5,500**	**5,500**	**39,430**	*100%*

1 Introduction

1.1 Overview

This Review sets out the medium-term priorities for exchequer capital investment and meets the requirement to publish a revised capital investment programme as pledged in the Renewed Programme for Government. The findings are set against the backdrop of a very challenging fiscal position, higher unemployment and shifting requirements for economic and social infrastructure. Capital investment played an important role in driving Irish economic and social advancement over the past decade, and the quality of the capital stock across a variety of sectors attests to the progress registered in that time. Similarly, appropriately prioritised capital expenditure can again facilitate economic recovery.

This Review therefore identifies areas for investment which can position the Irish economy for a return to growth into the medium-term. The investment priorities set out here are designed to drive productivity enhancements, lay the foundations for a return to export-led growth, assist in sustainable employment creation and deliver essential social infrastructure. In this way, capital investment can be central to the push for economic renewal.

The Government's overall strategy to address the economic challenges and put Ireland back on the road to growth has three main elements:

- Stabilise the public finances;
- Restore the banking system to health; and
- Restore and enhance competitiveness.

This strategy provides a framework within which a return to growth can take place, and Government capital investment can play an important role in restoring competitiveness. Accordingly, this Review serves to reappraise public capital spending priorities over the medium-term.

1.2 Approach to Reprioritising Spending Programmes

This Revised Exchequer Capital Programme is the product of detailed analysis and consultation. Its key task was to identify priorities for capital expenditure over the medium-term, given emerging shifts in the structural composition of the economy, changes in demand and the challenges presented by the new fiscal position. Economic infrastructure programmes were assessed with regard to their potential to deliver a high return in terms of productivity and competitiveness, support employment, achieve environmental targets and support the implementation of the National Spatial Strategy (NSS). Social infrastructure programmes were assessed with regard to their potential to address critical deficits in provision and to support employment and the implementation of the NSS.

1.3 Implementation of the National Spatial Strategy (NSS)

From a regional and sustainable development perspective, the Exchequer Capital Programme takes account of the NSS and prioritises actions to restore and enhance Ireland's national competitiveness such as:

- Supporting the overall national and international economic role played by Ireland's capital, Dublin, through more strategic and planning/infrastructure-led development;
- Outside Dublin, revitalising the development of the NSS Gateways as the key motors of growth within their regions and extending the reach of the gateways into more rural areas through the support for NSS Hub towns;
- Supporting the integrated development of the Dublin – Belfast corridor and of the Atlantic Gateways; and
- Continued support to enable the diversification and revitalisation of the rural economy.

An update on implementation of the NSS is due to be published shortly. This will outline in more detail how sustained and co-ordinated capital investment can support national and regional economic recovery, working in tandem with reform of the local government and planning systems.

The Gateways Innovation Fund will also be re-established with an indicative level of funding of €200 million from 2012. The objective of the Fund will be to stimulate and support innovative and locally co-funded projects that will prioritise Gateway development in line with the NSS.

1.4 Purpose of this Review

The purpose of this Review is to assess, within a sustainable budgetary framework, whether the current sectoral allocations are optimal, what areas of capital investment should now be prioritised and what level of capital resources might be freed up for other purposes. This review has taken account of

- the rationale for investment across various sectors;
- the impact of previous investment and the projected demand for further investment in certain areas;
- the opportunity to secure greater value for money;
- the extent to which necessary capital investment can support employment;
- social infrastructure priorities;
- the maintenance of existing investment; and

- most importantly, the potential contribution of a project or a programme to economic recovery, to long-term sustainable economic development and to the development of the low carbon, smart/green economy.

The Review takes account of the importance of providing a stable framework for capital investment decisions and delivery which will optimise value for money.

Each spending programme was assessed through a high level evaluation of the rationale for the investment, recent achievements in infrastructure development and anticipated medium-term demand for capacity. From this analysis, a re-oriented set of infrastructure investment priorities is developed.

1.4 Report Structure

The structure of this report is as follows: Section 2 sets out the broad budgetary and economic parameters in which this review operates, outlining the importance of capital investment in the economy and the changed environment in which infrastructure investment will be made. Section 3 sets out the framework through which capital investment is reprioritised and Sections 4 - 15 analyse expenditure programmes across all Departments. Section 16 concludes the report and sets out the new direction in public capital investment into the medium-term and anticipated employment impacts.

2. Budgetary and Economic Context

This Section sets out the broad economic and budgetary parameters informing infrastructure investment priorities over the medium term. Trends in exchequer-funded capital investment are discussed and the relevant developments which have taken place since the formulation of the National Development Plan, 2007-2013 (NDP) are set out. A brief discussion of the role of capital investment in bolstering productivity and creating employment is also presented along with an analysis of increased opportunities for value for money in public procurement.

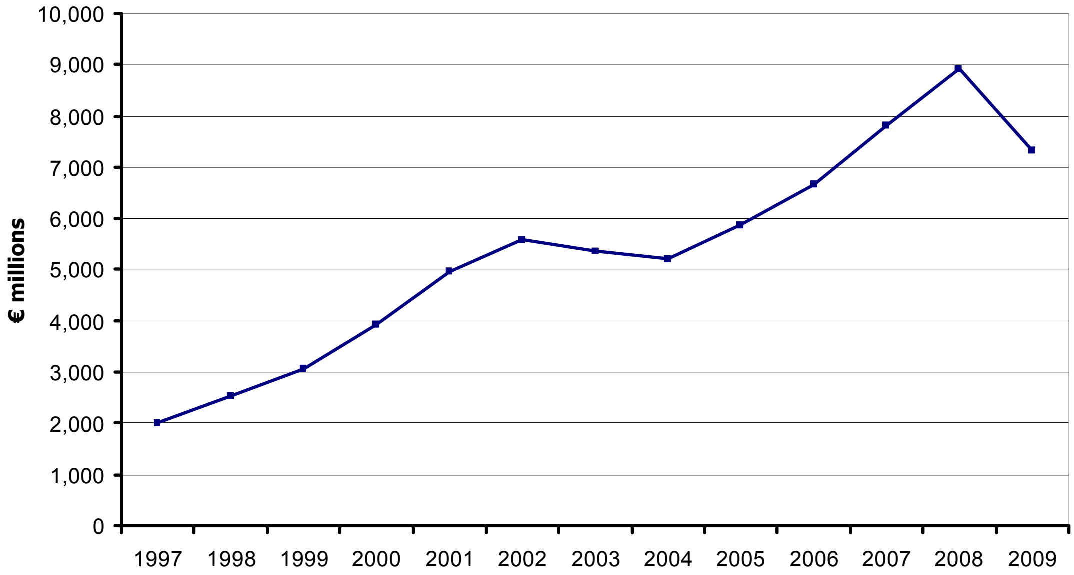
2.1 Budgetary Parameters

The budgetary parameters which frame the context for this exercise set a target for a reduction in the government deficit to below 3 per cent of GDP by 2014. Significant expenditure adjustments have already taken place in the form of Budget 2009, the savings set out in February 2009, the Supplementary Budget in April 2009 and Budget 2010. This review sets out a reprioritised capital investment envelope to gear the economy for a return to growth over the medium-term and as such is an important component of the national imperatives of stabilising the public finances and restoring competitiveness in the economy.

2.2 Trends and Profile of Capital Expenditure

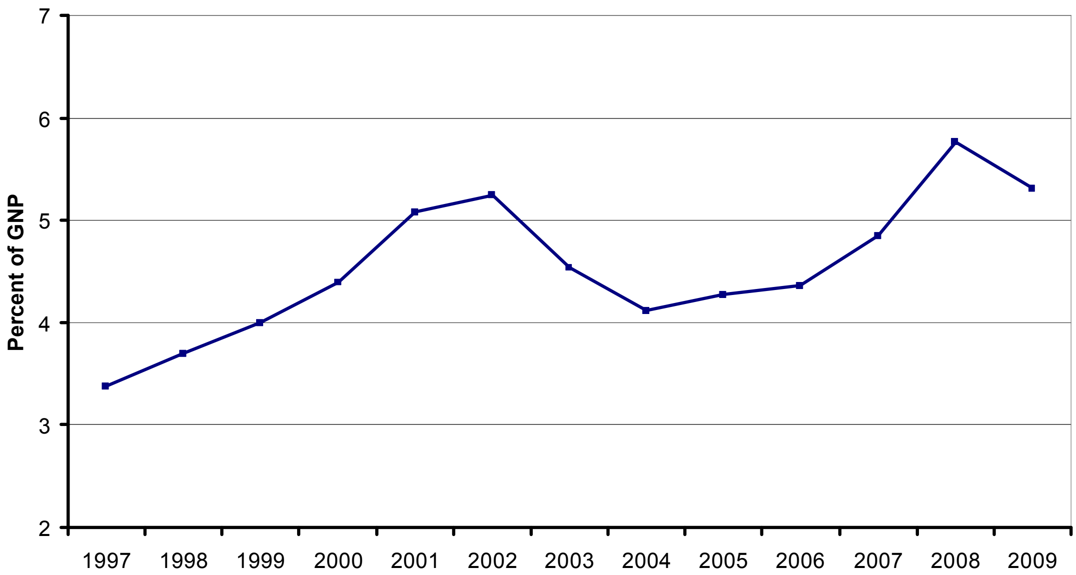
Sections 4 - 15 of this Review consider achievements in capital investment and medium-term demand for investment across each sector. A key point to emerge from the analysis underpinning this Review is the marked improvement in the quality and quantity of capital stock across the economy. In aggregate terms, these improvements have been driven by the renewed focus on capital investment over the past decade. Figure 2.1 shows the trend in capital investment in nominal terms since 1997. As is evident from the chart, exchequer capital investment more than quadrupled in the years to 2008, before necessarily contracting somewhat in 2009.

Figure 2.1 Exchequer Capital Expenditure, 1997-2009



More importantly, the trend in capital investment as a proportion of national output has also been upwards in trajectory. Notwithstanding a slight fall-off in the middle years of the last decade, capital investment as a proportion of GNP grew from 3.4 percent in 1997 to 5.6 percent in 2008 before contracting slightly in 2009. The effect of this investment has been to significantly expand the economy's output potential. Figure 2.2 below illustrates the trend over the period.

Figure 2.2 Capital Investment as a proportion of GNP, 1997 -2009

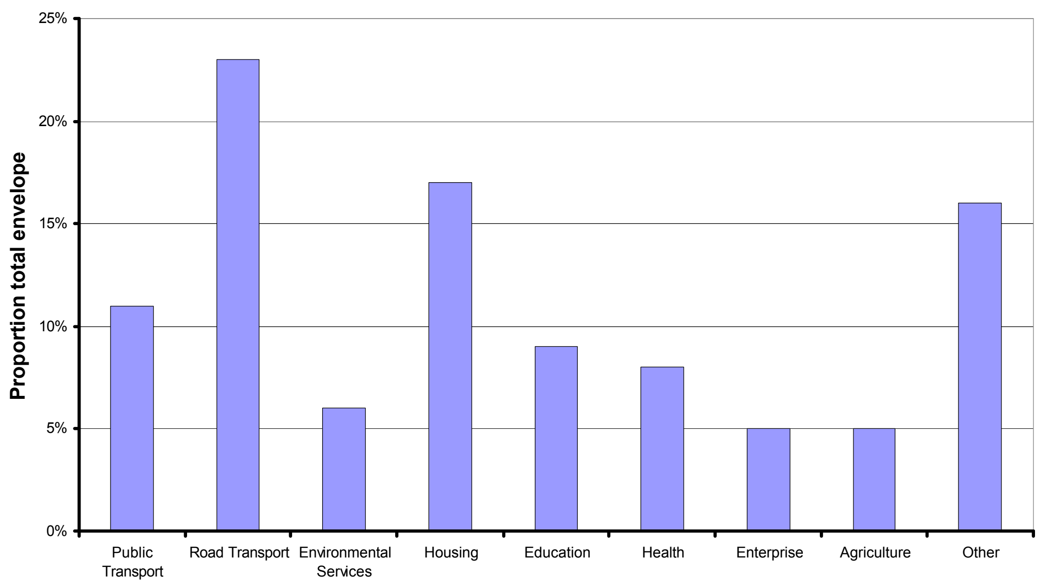


Exchequer capital investment funds both economic and social infrastructure. Table 2.1 below shows the broad breakdown based on 2009 allocations.

Table 2.1 Profile of Capital Investment, 2009		
	€ billion	*Proportion*
Economic / Productive Infrastructure	5.05	68.9%
Social Infrastructure	2.30	31.1%

Figure 2.3 below presents a more detailed breakdown of investment by economic and social sector. Investment through the Department of Transport and the Department of the Environment, Heritage and Local Government makes up more than 50 percent of total public capital investment. Capital spending peaked in 2008 and that year's data are used to illustrate the sectoral split.

Figure 2.3 Capital Investment 2008 - Share by Sector



As is evident from these data, exchequer-funded capital investment has been increased substantially in both nominal terms and as a proportion of national output over the past decade or more and is the source of funding for investment in infrastructure across all socio-economic sectors. International benchmarking shows that over the past number of years, general government gross fixed capital formation in Ireland has exceeded that of a range of comparator countries and in 2008 was more than double the EU 15 average[2]. Sections 4 - 15

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[2] European Commission AMECO Database as cited in National Competitiveness Council (2009) *Annual Competitiveness Report Volume 1*

of this Review set out in greater detail the achievements of this investment in building capacity in the economy.

While the focus of this Review is on exchequer capital investment, it is also important to note that the stock of infrastructure in the economy will also be expanded through investment by the commercial State bodies and investment finance through public-private partnerships (PPPs).

Recent years have seen growth in the use of PPPs as a means of procuring infrastructure. Typically, a PPP is a long-term arrangement with a private firm for the provision of a State asset and associated services which would otherwise be procured conventionally. A number of different types of PPP arrangement have been used in Ireland, but it is the 'classic' privately financed PPP which offers greatest potential to supplement exchequer investment. The main areas where PPP procurement has been used successfully to date are noted below.

- Transport - seven road schemes are now operational.
- The education sector - schools and third level institutions.
- Waste/wastewater projects in the Local Government sector.
- The new Criminal Courts Complex.
- Convention Centre Dublin.

There are also 12 projects in construction or near completion, each with a capital value of over €20 million in the transport, education, and environmental services sectors. There are further projects at various stages of the appraisal/procurement process. It is also proposed that the two major public transport schemes for Dublin - Metro North and DART Underground - will be procured as PPPs.

In relation to the commercial State bodies, the majority of investment over the coming years is likely to be carried out by the State energy and transport companies and will include renewable energy generation, energy networks, waste management and additional capacity at key transport hubs.

2.3 Macroeconomic Context

2.3.1 Developments since launch of the National Development Plan

Economic activity in Ireland went into reverse in 2008, the first time this has happened in a quarter of a century. The decline in 2009 of 7.6 percent of GDP[3] is among the sharpest in the developed world, reflecting our exposure to the construction sector as well as the

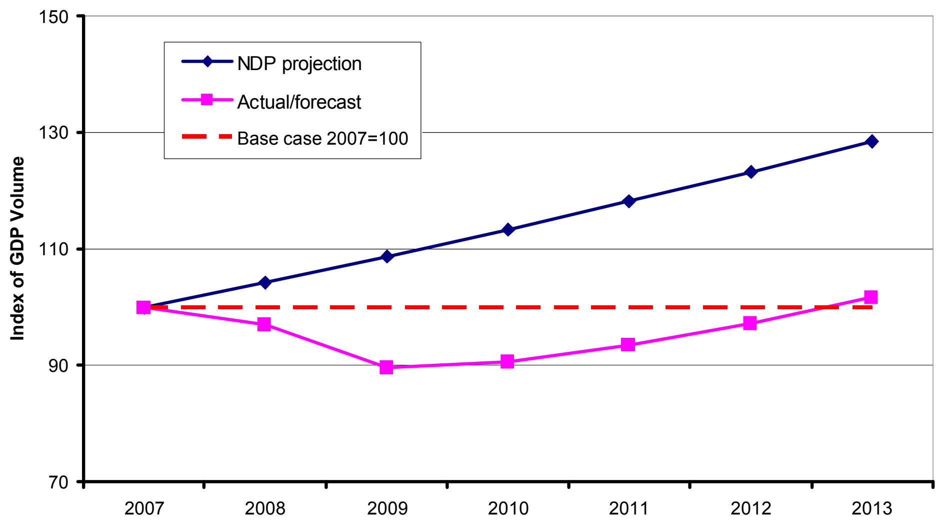
[3] CSO (2010) *Quarterly National Accounts - Quarter 1 2010*

openness of the economy. Employment has fallen significantly, with the construction, manufacturing and retail sectors bearing the brunt of the adjustment. Unemployment has risen to over 13 percent, having been below 5 percent at the beginning of 2008. Taxation revenue has fallen substantially - the level of tax receipts is now running at around 2003 levels. These developments have resulted in an unsustainable gap between public spending plans and revenue available.

Data for Quarter 1 2010 shows a return to growth in GDP, while GNP continued to contract marginally[4]. While this signals the technical end of the recession, the circumstances prevailing are nonetheless in stark contrast with those which applied when capital priorities contained in the NDP 2007-2013 were formulated. For example the scale of investment set out in the NDP was predicated on 4 – 4½ percent GDP growth per annum in the years to 2013, a gradual decline in housing output and a benign international environment.

Given the changed circumstances it is therefore necessary to reappraise the validity of capital priorities in terms of both requirement for additional investment and affordability of the totality of measures. Figure 2.4 below illustrates the extent of the phase shift in the path of real GDP as compared to that on which the NDP was based. This has implications for both capacity requirements in the economy and affordability of investment plans.

Figure 2.4 Phase Shift in the Path of GDP Growth



Source: Compiled from NDP assumptions, CSO data and Department of Finance forecasts.

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[4] CSO (2010) *Quarterly National Accounts - Quarter 1 2010*

It is unlikely that the economy will return to 2007 levels of GDP before 2013 and this has clear implications for the need for infrastructural investment required. Alongside this review of capital expenditure, it will also be timely to reassess broad policy approaches within individual sectors in some detail, as the parameters which framed sector-specific policy goals have also changed across the range of sectors of the economy.

2.3.2 Demand for Capacity in the Economy

Given shifts in the structural composition of the economy and the aggregate level of economic output, reductions in capital expenditure need not have as adverse an impact on the economy's real level of capital stock relative to demand, as the nominal level of reduction might imply.

In broad terms, the demand for capacity in an economy is a function of its medium term output path. Because many of the key drivers of demand for capacity have experienced reversals in trends, it should be possible to maintain a given level of capacity in the capital stock with a smaller level of investment. For instance, lower commuter numbers, significantly lower house completion rates and lower numbers in employment will have implications for medium-term demand on the country's transport infrastructure. It will therefore be possible to meet demand in that sector with reduced resources. Similar trends will be observed across other areas of capital investment. While this point will be mitigated to some extent by the fact that there remains – by comparative international standards – an infrastructure deficit in certain sectors of the Irish economy, it is nonetheless the case that reductions in capital investment need not curtail capacity provision to the extent that nominal reductions might otherwise suggest. Further, because of the fall in aggregate output, the economic efficiency principle of 'just in time' construction implies deferral of some capacity enhancing projects at this time[5]. These broad principles inform the analysis underpinning this reprioritisation.

Table 2.2 illustrates recent developments regarding a number of key drivers of demand for infrastructural capacity in the economy.

[5] As discussed by McCarthy, C (2009) *Stabilising the Public Finances*, address to Green Party Convention 2009.

Table 2.2 Trends in Selected Short-Medium Term Infrastructure Demand Drivers	
Driver	*Trend observed*
Residential construction	▪ House completions down to approximately 26,000 in 2009 from over 90,000 at the peak of the boom.
Commuter numbers	▪ Luas passenger numbers fell by one million in 2008 and a further two million in 2009; ▪ Dublin Bus numbers down by 3 per cent in 2008 and an estimated 10 percent in 2009; ▪ Bus Eireann numbers down by 2 per cent in 2008 and 4 percent in 2009
Car registrations / vehicle fleet / road traffic volumes	▪ New car registrations fell by over 34,000 in 2008, and dropped again by some 92,000 in 2009. There have been increases again in 2010; ▪ Truck traffic fell by 12 percent in 2009 and the total number of private cars licensed has contracted slightly.

Sources: NRA, CSO, ESRI, RPA, CIE, NCC

2.3.3 Enhanced Opportunities for Value for Money

The market through which capital infrastructure is procured has also undergone rapid and dramatic change. A positive development associated with the correction currently being observed in the construction industry are the markedly improved opportunities for value for money in public expenditure.

Tender prices have fallen. Available data show that prices for the second half of 2009 were at the same level as those for early 1999[6]. Figure 2.5 illustrates the extent of the fall over recent years.

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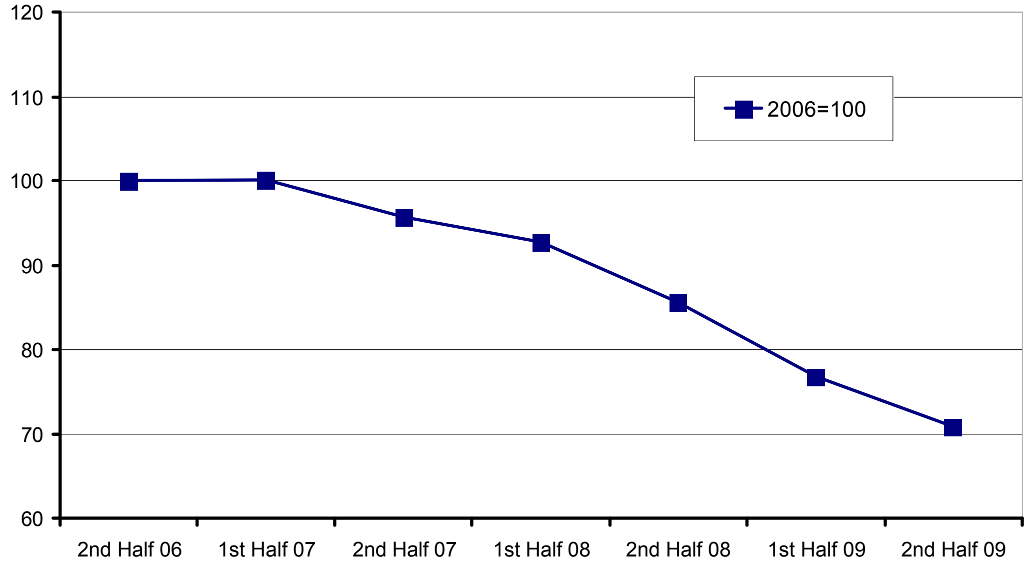
[6] Society of Chartered Surveyors (2010) Tender Price Index.

Figure 2.5 Tender Price Index, 2006-09



Source: compiled from SCS data

It is likely that the downward trend in tender prices may continue into the short-term at least. Even if a reversal in this trend is manifest in the coming years, lower prices coupled with improvements in public sector procurement procedures (such as fixed price contracts) will afford greater opportunities for value for money than existed during the boom years. Government Departments are already benefiting from these changed market conditions and have reported to the Department of Finance on the magnitude of savings available. In some sectors – generally involving larger scale capital projects – there will be a lag in achieving reductions as a substantial proportion of resources was contractually committed at a time when prices were at or closer to their peak. In other areas however, smaller projects and shorter time horizons will permit more prompt realisation of savings.

The combination of these developments then, is that the potential impact of reductions in public capital expenditure is tempered in real terms[7]. The analysis contained in Sections 4 - 15 of this report considers exchequer allocations to Departments in light of these new improved value for money circumstances.

2.4 The Rationale for Government Intervention in Capital Provision

The first question which must be asked in an exercise such as the reprioritisation of public capital investment is why Government needs to be involved in providing services in a given sector; why should it not be left to market forces to provide. As a general rule, competitive

[7] As also discussed by Morgenroth, E (2009) *Irish Public Capital Spending Cuts in a Recession* ESRI Working Paper No. 298.

markets will provide goods and services more efficiently than Government can, both because private operators utilise resources and produce outputs subject to market disciplines and because market pricing avoids the economic disincentives that taxation creates (the same logic underpins the user-pays/polluter-pays principles). Nevertheless there are many instances where the market will not provide the optimal level of outputs, i.e. there is a market failure, and in these instances Government intervention may lead to better, more economically efficient outcomes. Four scenarios are usually advanced to justify government intervention, all centred on the concept of market failure[8]:

- Interventions to provide public goods which cannot be supplied by the market;
- Positive or negative side effects of market provision (e.g. taxing consequences such as pollution so as to limit it or subsidising activities such as education so as to encourage greater participation);
- Interventions for the purpose of income redistribution; and
- Interventions to provide merit goods such as health or education where the outcome of providing these facilities by purely market means is not socially acceptable.

This Review has assessed the case for government intervention across capital investment programmes in light of these criteria and only programmes warranting Government intervention on the basis of identifiable market failure justifying intervention on economic efficiency grounds are considered for ongoing Exchequer funding.

2.5 The Role of Capital Investment in Advancing the Smart Economy

2.5.1 The Smart Economy

In December 2008 the Government set out its vision for the next phase of Ireland's economic development, predicated on addressing the severe economic conditions we currently face. *Building Ireland's Smart Economy – A Framework for Sustainable Economic Renewal* seeks to combine the successful elements of the enterprise economy and the innovation economy while promoting a high quality environment, improving energy security and promoting social cohesion.

The framework is made up of a series of inter-locking elements each of which is reflected in a set of action points for Government policy. The five key Action Areas outlined in the Framework are:

- Meeting the Short-term Challenge – Securing the Enterprise Economy and Restoring Competitiveness;
- Building the Ideas Economy – Creating the 'Innovation Island';

[8] ESRI, as cited in Department of Finance (2007) V*alue for Money and Policy Review Initiative Manual*

- Enhancing the Environment and Securing Energy Supplies;
- Investing in Critical Infrastructure; and
- Providing Efficient and Effective Public Services and Smart Regulation.

Delivering on these Action Areas will be central to returning to economic growth over the medium-term and the set of investment priorities outlined here are consistent with this approach.

2.5.2 Capital investment and productivity growth

In support of the goals of the Smart Economy Framework, public capital investment can play an important role in reducing bottlenecks, bolstering productivity and enabling an improvement in international competitiveness.

Investment in private capital stock has long been recognised as a driver of productivity in firms[9] and public capital investment in infrastructure can be a significant driver of economic growth also. OECD research has highlighted the fact that government investment has a positive impact on per-capita output growth[10]. In the UK, the Treasury Department has identified investment as one of the 'five drivers' of productivity[11]. International analysis has shown that public capital investment in infrastructure enhances economic growth by reducing firms' transportation and coordination costs[12]. A recent analysis of public capital spending looked at investment in the specific context of the global financial crisis. While highlighting the importance of robust project appraisal and regulatory systems to foster competition, this analysis showed that investment in infrastructure has positive spill-overs throughout the economy[13].

Productivity enhancement will be an important aspect of economic recovery. While the key to long-term economic sustainability will be a dynamic, export-oriented enterprise base, public capital investment which enhances the productivity of the locally traded sector will also be valuable as it will serve to lower the cost base faced by firms located in Ireland and operating in the internationally traded sector. Capital investment that is co-ordinated around the framework of the National Spatial Strategy will also position strategic locations as the drivers

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[9] For instance Jorgenson (2005) found that capital accumulation accounted for over 50 percent of total economic growth in United States between 1948 and 2002.

[10] OECD (2003) *The Sources of Economic Growth in OECD Countries*. Paris

[11] Along with skills, innovation, entrepreneurship and competition.

[12] Shiffbauer (2006) as cited in Iparraguirre J (2006) *The Five Drivers of Productivity. How much does each one Contribute?* ERNI Monograph No 14.

[13] OECD (2009) *Going for Growth 2009*. Paris

for growth through improved productivity and securing more sustainable patterns of development.

2.5.3 Capital investment and employment

Stimulus packages incorporating investment in public capital infrastructure have been a feature of many governments' responses to the global downturn. Such investment is beneficial as it can provide much needed employment and at the same time deliver valuable public capital infrastructure. In 2009 the Department of Finance carried out a survey of Government Departments to identify the employment intensity of capital investment. It was found that the labour intensity of capital projects falls within the range of 8 - 12 jobs for every €1 million invested. Table 2.3 below summarises the results of this survey across investment areas.

Table 2.3 Estimated Labour Intensity of Construction Phase of Infrastructure

Sector	*Jobs Sustained per €1 million invested*
HSE Capital	12
Regional and Local roads	11.5
National roads	10
Prisons	10
Schools	9.3
Housing	8
Public transport	8
Water services	8

These estimates are averages across spending programmes, and within these averages, analysis has shown that more minor works such as routine maintenance, refurbishment etc tend to be more labour intensive. Benefits in this regard however must be considered in terms of the opportunity cost of not diverting resources into longer-term and larger scale capacity enhancing projects. The estimates include direct jobs only and do not factor in the effects of indirect or induced employment. These are once-off effects, relating to jobs created during the infrastructure delivery phase.

Capital investment can also play a direct role in more cost-effective and sustainable employment creation through the Enterprise Development Agencies. Data show that the average cost of creating and sustaining employment in companies supported by IDA Ireland and Enterprise Ireland has fallen steadily over the past number of years. In the case of EI, the cost per job sustained over the 2002/08 period was €8,235 and the case of IDA, the cost was €12,485 over the 2000/06 period[14].

Given the pace at which unemployment has risen over the past year, employment creation must obviously be a key goal of policy. In this regard however the focus of capital investment must be on creating the framework conditions in which the enterprise sector can thrive, as opposed to subsidising short-term, direct employment. While direct employment is a welcome ancillary benefit of capital investment, it must be a secondary concern. As pointed out by recent ESRI analysis, capital investment must be prioritised on the basis of long-run return to the entire economy[15].

Direct employment benefits can nonetheless play a role in ameliorating the effects of the economic downturn and assisting in economic recovery over the short-medium term. Also, as small-scale works are more labour intensive, there can be nationwide employment benefits as projects such as refurbishments, fit-outs etc are progressed across the entire country and not just in major urban centres.

Among the largest groups now in unemployment are those previously employed in the construction sector. It is neither likely nor desirable that the construction sector return to previous levels of activity, and so it is necessary to equip these workers with the skills to find employment in other sectors of the economy. Of course the downturn has given rise to unemployment across all sectors and those affected will equally require the upskilling and / or retraining to rejoin the workforce.

2.5.4 Need for expertise in investment planning and delivery

The desirability of retaining a degree of capacity and expertise in the construction sector should be noted. A stable - if lower than envisaged in the NDP - level of capital investment over the next five years will help maintain capacity in the construction sector. The investment programme emerging from this Review will help ensure that the necessary skills and expertise continue to be available from within the Irish construction sector. When capital investment began to be ramped-up from the late 1990s onwards, inflationary pressures manifested themselves because the necessary skills and expertise were not available in the desired quantities. The augmentation of the principal procurement agencies and the build up

[14] Data received from Forfás. IDA job costs are higher on account of greater capital intensity of investments supported. Cost per job metrics in this area must be interpreted slightly differently to those in the construction sector as figures relating to enterprise-agency job creation refer to the *average* cost of jobs created whereas figures relating to construction jobs refer to the *marginal* level of job creation arising from additional expenditure.

[15] Morgenroth, E (2009) *Irish Public Capital Spending in a Recession* ESRI Working Paper No. 298.

of capacity within the construction sector has since helped to ensure that most of the large projects are now delivered on time and within budget, and, to ensure that this continues into the medium term, the retention of a base level of capacity and expertise will be important.

2.5.5 Issues in relation to project appraisal and programme evaluation

The Government has put in place a range of mechanisms which make up the Value for Money Frameworks. A core element in this regard are the *Guidelines for the Appraisal and Management of Capital Investment Proposals in the Public Sector*, published in February 2005.[16] It is imperative that all capital investment is conducted in accordance with the *Guidelines*, in relation to project appraisal, project planning, project implementation and post-project review. All public capital investment must proceed on the basis that it returns a net benefit to State and represents the optimum means of achieving a desired outcome. Regarding capital investment proposals valued in excess of €30 million, a robust cost-benefit analysis (CBA) should be undertaken and show a clear net benefit to the State prior to the project progressing.

In addition, in light of the significant changes in unemployment rates, a higher value should be attributed to new job creation for use in CBA than pertained during the full employment era. This should be implemented in practice by applying a shadow cost of labour in future CBAs. On a related point, it is important that a shadow cost of public funds of 150 percent should be applied to exchequer sourced funds in CBAs of capital investment proposals in the public sector, so as to account for the distortionary effects of taxation.

[16] As updated by the January 2006 Department of Finance Circular Letter on VFM

Macroeconomic and Budgetary Context – Summary of Findings

- The economic context which sets the parameters for this review is characterised by a very challenging fiscal position, high unemployment and shifting requirements for economic and social infrastructure.
- The circumstances prevailing are therefore in stark contrast with those which applied when capital priorities contained in the NDP were formulated and it is now necessary to reappraise investment plans based on both changing demand for capacity and constrained affordability.
- Appropriately targeted capital investment can nonetheless play an important role in putting the economy back on the path to prosperity.
- Because the economy is on a lower growth path at present, a reduced level of infrastructural capacity is required to meet demand in the economy over the medium term.
- Added to this, tender prices have fallen markedly, and so much better value for money is available in procurement and construction of public capital. Opportunities to achieve significant savings are available therefore, while still expanding the capital stock in real terms.
- The combination of these developments means that capacity in the economy can be expanded - relative to demand – with a lower level of capital investment than previously anticipated.
- There is a large body of international evidence pointing to the positive effects of public capital investment on economic growth. The revised public capital programme set out in this review can play a role in enhancing productivity growth and restoring competitiveness in the Irish case.
- In terms of jobs creation, the most substantial benefits will be in creating the framework conditions for employment growth in a more export-oriented and sustainable enterprise base.
- There will also be a role for capital investment in supporting direct, once off employment and estimates of the labour intensity of various types of public capital investment are in the region of 8 - 12 jobs per €1 million invested.
- Capital investment will also be central to advancing the goals of the Smart Economy Framework.

3. Framework for Prioritisation

Sections 4 - 15 seek to reprioritise Government capital investment over the medium term with a view to those areas of investment which can best position the Irish economy for a return to economic growth. Section 16 summarises the new direction emerging in public capital investment.

Capital spending programmes are evaluated on a Department-by-Department basis and the coming sections assess existing capital programmes with regard to:

- Recent trends in capital expenditure in each area;
- The rationale for government spending in each area having regard to the stated strategic objectives of each programme and the extent to which programmes are designed to address an existing market failure;
- Progress in each sectoral area in recent years in terms of the effectiveness of previous investment, the expansion of the capital stock achieved and the anticipated demand for capacity into the medium term in the context of reduced economic activity; and
- An overall assessment of the appropriate level of investment required in each area taking account of all of these factors.

Departmental assessments are presented in order of magnitude of levels of capital allocation.

Alongside the analysis in each section, a straight forward multi-criteria framework was used in assisting to determine the revised capital investment priorities contained in each sector. As per the criteria underpinning this review, a distinction is made between economic infrastructure and social infrastructure. Details of the multi-criteria framework are set out in Appendix A.

Assessing the potential benefit of investment across such a broad range of programmes is not an exact science however, and so this analysis acted as an aid to decision-making process which was combined with other research and analysis in arriving at the recommended Departmental allocations.

The types of factors that were considered as part of this analysis include:

- Achievements of investment to date – e.g. capacity of the road network, extent of compliance with EU water directives, number of science PhDs in the workforce etc;
- External factors driving medium-term demand for investment – e.g. growing EU environmental compliance burden;

- The type of capital stock required for the smart economy – e.g. faster and more ubiquitous connectivity, adequate research infrastructure; and
- Changes in the price of procuring capital infrastructure – tender prices are 30 percent lower than at the peak of the market.

From the analysis detailed above, the specific enhancements in capacity required in each priority area were identified. The net effect of the revised capital investment programme in the years to 2016 is a refocused set of priorities which can assist in economic recovery and the important transition to a low carbon economy. The following chapters set out further detail on specific elements of this ambitious investment programme.

4. Transport

4.1 Overview

In the years to 2016 the Government will invest in excess of €12 billion in enhancing the accessibility, capacity, sustainability and quality of the transport network in Ireland. Having successfully focused on the delivery of major roads infrastructure over the past decade or so, the focus of investment in transport infrastructure will increasingly shift towards public transport.

The box below summarises the key elements of the Government's approach to investment in this sector.

Transport Investment 2010-2016
In excess of €12 billion will be invested in the years to 2016 in enhancing the national transport infrastructure. The core elements of this are: ▪ €5.7 billion will be invested in public transport programmes (including provision for Metro North and the Dart Underground which are included in the Renewed Programme for Government); ▪ €6 billion will be spent on close-out payments associated with the completion of the major inter-urban road routes and delivering a select number of new key strategic road projects; and ▪ Within these allocations there will also be funding for important safety and maintenance work and for progressing planning of future transport priorities.

The Department of Transport is four years into its ten-year investment programme, *Transport 21*. Launched in late 2005 and building on the significant levels of Exchequer investment made under NDP 2000-2006, the programme reflected Government's prioritisation of transport infrastructure in setting out an investment framework that was unprecedented in the history of the State in terms of ambition and financial scale.

By the end of 2010, which will represent a mid-point in the Transport 21 Programme, almost €11 billion will have been invested in national roads and public transport, with a further €1.6 billion in regional and local roads. The outputs of this investment at that point will include full motorway connections between Dublin and each of the main regional cities, a fully upgraded three-lane M50 with freeflow tolling and interchanges, and an enhanced regional and local road network. Key public transport outputs include the DART upgrade and new modern bus and rail fleets for Irish Rail, Dublin Bus and Bus Eireann, new or upgraded train lines to

Dunboyne and Kildare, new commuter rail in Cork, Phase 1 of the Western Rail Corridor, new Luas extensions to the Docklands and Cherrywood, as well as substantial implementation of Integrated Ticketing and the Luas line to Citywest. In light of the achievements made to date and anticipated future demand for capacity, it is necessary to review priorities to ensure that investment is made in those areas which can deliver the greatest and most sustainable economic return.

4.2 Rationale for Continued Investment[17]

4.2.1 Roads Programme

The strategic objective of investment in roads is to provide Ireland with a road system commensurate with a modern society and economy, which facilitates economic competitiveness, is integrated with other transport modes and can support all-island co-operation. In the particular economic context of today, the immediate objective must be to focus on those road connections which are needed to facilitate and promote economic recovery. By definition such roads are the major interurban routes between Dublin and the regional cities - which will be completed by end 2010 - and key strategic routes linking Dublin and Cork to Rosslare Port (part of the Trans European Network) and linking Galway to Cork (part of the Atlantic Road Corridor). The existing road network should be maintained to a sufficient standard to ensure the value of the original capital investment does not depreciate prematurely over the coming years.

While the public private partnership approach has been very effective over the last decade in helping to deliver key elements of the national road network, the private sector's involvement in the provision of roads is predicated on a known financial return over the course of the agreed contract. This is effected through annual lump sum payments or a combination of such payments and toll receipts, where the particular road is tolled. There is no potential for the private sector to build roads without State support, as even in cases where toll collection is possible, such income deriving can only be expected to cover a relatively small part of the initial capital outlay and ongoing maintenance costs. Therefore, the provision of roads needs to be understood as a public utility that requires ongoing State investment.

4.2.2 Public Transport Programme

The strategic objective of investment in public transport is to provide Ireland with an integrated public transport system which supports economic competitiveness, relieves road

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[17] All strategic objectives cited here for D/Transport Capital Programmes are sourced from the NDP Annual Report 2007

congestion, promotes environmental sustainability and is integrated with other transport modes.

The economic justification for intervention in public transport is not uniform across the various elements which comprise the programme. In the case of mainline rail, metro and Luas, the economic rationale for government intervention derives primarily from the prohibitive start-up costs, which generally cannot be recovered through user charges and therefore act as a barrier to private provision of services. Associated positive externalities underscore the case for State intervention in some cases.

In the case of bus transport, market failures do not exist to the same extent and the State can simply act as another provider in a competitive, liberalised market[18].

4.2.3 Airports Programme

The strategic objective of this programme is to ensure that Ireland has a modern airport infrastructure sufficient to meet demand and which supports international competitiveness by enhancing air access for people, goods and services. The Dublin Airport Authority is responsible for the principal public investment in airports i.e. in Dublin, Cork and Shannon airports and for addressing this strategic goal. This investment however is financed by commercial revenues and airport charges and is not Exchequer funded.

The focus of Exchequer investment has been on regional airports, which are located along the Western and Southern coast from Donegal to Waterford. To a large extent, the case for development of regional airports has been driven more as a supply- than a demand-led policy, inspired by regional development goals rather than to satisfy a latent demand in the market. The size of the PSO subvention required to keep many routes operational attests to this. For this reason - and given the much improved rail and road links to the major regional centres - it is prudent to reconsider the policy at this time.

4.2.4 Ports Programme

The strategic objective of this programme is to ensure that Ireland has a modern ports infrastructure capable of meeting demand and which supports international competitiveness by enhancing sea access for people, goods and services. This programme has come to an end and the expectation is that all future investment by the port companies will be made on a commercial basis, funded by user charges and other revenue streams developed by the companies. A small level of continued Exchequer capital investment in regional ports will be required prior to their handover to local authorities.

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[18]Although market regulation and governance issues require further attention.

4.2.5 Sustainable Transport

The overarching rationale is to work towards achieving a sustainable transport system by 2020 so that the Government targets as set out in the *Smarter Travel* strategy are met. These include a modal shift to alternatives to the private car from 45 percent to 65 percent. In particular the potential for travel by foot and bike will be exploited through implementation of the National Cycle Policy Framework, mobility management programmes and retrofitting of urban spaces to promote these modes.

4.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand

Investment in transport infrastructure is the single largest spending priority in the current NDP, and having been a key component of the previous Plan, investment to date has made very substantial progress in addressing the infrastructural deficit that previously characterised the Irish economy. Having spent the best part of the last decade in catch up phase with economic growth to provide the necessary transport infrastructure, it would be imprudent to suddenly cease investment. The Government is faced with stark choices of reprioritisation given the present budgetary constraints however, and therefore previous ambitious plans must be reappraised. Achievements in each programme and the anticipated medium-term capacity requirements are discussed below in the context of the contraction in aggregate economic activity.

4.3.1 Roads Programme (including regional and local roads)

Investment in this area has transformed the quality and quantity of the national road network over the past decade. Capital spending under NDP 2000-2006 and as part of Transport 21 in the current Plan has overcome capacity deficits and there is strong evidence of a high economic return on this investment[19]. The priority to date has been the completion of the major inter-urban routes (MIUs). The regional and local road network has also benefited from substantial investment.

The MIUs will be complete by end-2010 and the completion and integration of the network will enhance the return on individual sections of the roads system. Given that roads projects delivered to date were prioritised on the basis of economic return, the subsequent impact of further investment may be expected to diminish compared to the return on recently delivered routes. While there may be a strong case for further development of outstanding routes between the major regional centres, the very significant achievements to date in building

19 As discussed by FitzGerald, J et al (2003*) The Mid-Term Evaluation of the National Development Plan and Community Support Framework for Ireland, 2000 to 2006:* Final Report to the Department of Finance. ESRI, Dublin.

capacity in the road network means that further investment on the scale of recent years will not be required. The Renewed Programme for Government contained a commitment to review the completion dates and appropriate road standard for the remaining national road projects. This review is due to be completed later this year.

The national fleet of vehicles has contracted somewhat and new car registrations fell dramatically in 2008 and 2009 before recording some growth again in 2010.

There are however projects that can yield considerable economic benefit, with the key consideration being to improve the road transport accessibility of export-oriented enterprises. Projects to be prioritised here include progression of the Atlantic Corridor and the N11.

4.3.2 Public Transport Programme

As in the case of roads investment, capital expenditure in this programme over the course of NDP 2000-2006 and into the current Plan has driven a step change in the public transport network in Ireland. Among the most significant achievements of this investment in the Greater Dublin Area are:

- The Luas light rail system;
- Enhanced Dart and rail capacity; and
- An expanded and upgraded bus fleet.

Outside of Dublin, major steps forward were taken in the form of the renewal of large parts of the rail network and rolling stock and improvements to bus capacity, frequency and accessibility in the regional cities.

The changing economic conditions will have implications for required capacity in public transport infrastructure. As discussed at Section 2, many of the factors which have driven demand for capital investment over the past number of years are experiencing reversals in trends. These patterns are of particular relevance regarding demand for public transport: a significant fall in house completions and a reduction in numbers of people commuting owing to increasing unemployment will serve to dampen demand for public transport infrastructure in the short-medium term. Accordingly any reprioritisation of capital spending in this area must be cognisant of the economic inefficiency of excess capacity in the absence of matching demand. Nonetheless, there is a significant time lag at play in public transport infrastructure provision from the point at which the decision is made to provide it, through to design, planning and construction – especially with rail projects – and therefore, a focus should be kept on medium-long term demand projections. Where budgetary constraints dictate a slowdown in project delivery in the short-medium term, it is important to protect future infrastructure provision by continuing to invest, as appropriate, in project planning in order that projects are ready, 'on the shelf', for delivery when finance becomes available and pending a continuing economic case and relative priority.

Commuter Rail Services

Key strategic projects being prioritised include Navan Rail Line Phase 1 and the Luas Cherrywood extension and these are expected to be complete in 2010. In addition, the Citywest Luas will be operational in early 2011 and a railway order in respect of Phase 2 of the Navan Line is currently being prepared. This is in addition to the completion of the DART upgrade (extended trains and platforms), enhancements to interurban rail services and the opening of Cork to Midleton commuter line, the completion of Phase 1 of the Western Rail Corridor, the Kildare Route Project and the Luas extension to Docklands.

The Renewed Programme for Government establishes Metro North and the DART Underground programme as the key medium-term public transport priorities. Spending in this area will be complemented by investment in ongoing public transport programmes such as the Railway Safety and Traffic Management Programmes and in progressing the planning of potential future public transport investment.

Since the initial investment in Luas, there has been further capacity expansion. In 2008, trams were expanded from 30 metres to 40 metres on the red line (Tallaght – Connolly Station)[20]. On this mode too however, passenger numbers are in decline: users fell by 1 million in 2008 and by close to 2 million in 2009[21]. It is therefore reasonable to conclude that no new expansion of capacity on the existing Luas lines should take place in the medium-term as existing capacity will be sufficient to cater for demand. Planning and design work on other metro and light rail projects should continue with a view to commencement of construction when economic circumstances allow and demand necessitates.

Mainline rail

Considerable investment has been made in enhancing mainline rail infrastructure over the last decade or so. The rail track has been renewed, the rolling stock has been substantially replaced and modernised and new lines have been opened or are scheduled to open in the near future. In recent times however - as is the case of other modes discussed - demand for rail services is in decline. Passenger numbers fell in 2008 and again this trend intensified in 2009.

[20] Department of Transport (2009) *Annual Output Statement 2008*

[21] Data received from RPA

Given this substantial investment, the enhancement of roads between our main cities (which also facilitates bus-based public transport), and the fall-off in demand, investment until 2016 should focus on maintenance of existing infrastructure, capacity enhancing projects aimed at removing speed restrictions, essential safety-related work and progressing the planning of potential future investment.

Bus Services

Considerable investment has been made in recent years in expanding and renewing the Dublin, provincial city and national bus fleets. Capacity was expanded at a faster rate than passenger numbers grew however. Over the 2000 - 2007 period capacity was expanded by 25 percent whereas numbers only grew by 6 percent[22]. On top of this, 239 new buses[23] were delivered in 2008[24], further expanding capacity in the absence of corresponding demand growth. At present, passenger numbers are in decline: numbers fell by 4 percent in 2008[25] and by 10 percent in 2009.

The potential for a regulatory response and the contribution of the private sector to providing bus-based transport should be fully explored before any consideration is given to further investment in increasing capacity on the publicly owned bus fleet.

4.3.3 Regional Airports Programme

There are now six regional airports in the State and government investment in Derry City Airport also benefits air travellers to and from the North West. More than sufficient capacity exists in this sector.

The arguments challenging the rationale for government intervention through this programme outlined at Section 4.2.3 are also of relevance on the point of required future capacity. It can also be expected that the contraction in economic activity and enhancements to other transport links to the regions will serve to further mute any existing demand for air links.

4.3.4 Ports Programme

Ireland's port infrastructure was also significantly improved under NDP 2000 - 2006, and data for the period showed substantial increases in traffic over the period[26].

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[22] Deloitte (2009) Report to the Department of Transport *Cost and Efficiency Review of Dublin Bus and Bus Eireann*

[23] Of which 100 were additions to the fleet and the remainder replacements.

[24] Department of Transport (2009) *Annual Output Statement 2008*.

[25] Deloitte *op cit*

[26] As cited in NDP 2007-2013.

Future capacity can be funded through user charges, and so - in terms of satisfying anticipated infrastructure demands - there is little or no role for government funding through this Programme. As stated above, a small level of continued exchequer capital investment in remedial works at the regional ports will be required prior to their handover to local authorities.

4.4 Focus of Medium Term Policy

Based on the foregoing analysis, this section sets out medium-term funding allocations and policy priorities for capital investment in the Transport sector.

4.4.1 Roads Programme

As discussed above, there has been very significant progress in expanding the capacity of the national road network. Nonetheless there can be expected to be a significant return on a number of targeted, strategic investment projects. Projects to be prioritised here include progression of the Atlantic Corridor, the N11 and other key strategic routes.

Improved value for money can be achieved in procuring these new projects on account of the lower tender prices on offer as detailed in Section 2.

Information received from the National Roads Authority indicates that in due course it may be possible to recoup up to €200 million per annum in tolling income. This could be achieved through a combination of raising toll rates on existing facilities, where feasible, introducing new tolls on new roads and introducing new tolls on existing roads (or sections of) not presently tolled. It is recommended that any income generated through tolling be retained by the NRA and used to help fund ongoing road investment, and in particular should be targeted at maintenance of the existing road network.

Regarding regional and local roads, there has been very significant investment to improve quality and capacity. Regional and local roads investment is decided and contracted on a year-to-year basis, which means that there is a minimal level of advance contractual commitment and consequently a real opportunity to maximise value for money from lower tender prices. Alongside the enhanced value for money available, spending in this area offers considerable advantages in terms of employment creation. Small works such as the type funded under this programme are known to be labour intensive and this is a further advantage of investment in this area. In addition, continuing investment will be required to address the consequences of the extreme weather conditions experienced in late 2009 and into 2010. Alongside funding for the strategic priorities outlined above, funding is also included for continued infrastructure planning.

4.4.2 *Public Transport Programme*

As mentioned above, Metro North and the DART Underground (and associated projects) are provided for in the Renewed Programme for Government and accordingly comprise the vast bulk of investment in this Programme in the period to 2016. Both Metro North and Dart Underground are being progressed as PPP projects and it must be noted that continued substantial Exchequer expenditure will be required over the next 25-30 years to repay the private financing element.

Outside of these projects – beyond essential maintenance and safety-related work – the primary focus should be on the continuation of planning of future priorities and, as in the case of the cross-city Luas line, carrying out preliminary work, where appropriate, to minimise future construction impacts .

Table 4.1 illustrates the financial allocation to the programme of capital investment in the Transport sector in the years to 2016 including provision for:

- The completion of a range of public transport projects at advanced planning and implementation stage;
- Metro North;
- DART Underground and associated projects;
- The completion of the MIUs;
- The commencement of a number of key strategic national road priority projects (including progression of the Atlantic Corridor and the N11) and essential maintenance of the national network;
- Funding for ongoing local and regional road maintenance and improvement;
- Funding for ongoing public transport programmes including the rail safety and traffic management programmes; and
- Funding for ongoing planning.

Table 4.1	**Department of Transport Reprioritised Envelope, 2010 - 2016**							
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Public Transport	615	540	560	975	1,055	1,005	1,005	*5,755*
Roads	1,414	1,150	920	720	620	570	570	*5,964*
Other Programmes	52	50	70	70	70	70	70	*452*
Total	**2,081**	**1,740**	**1,550**	**1,765**	**1,745**	**1,645**	**1,645**	***12,171***

4.5 Anticipated Outcomes of Investment

In the years to 2016 Government will

- Invest in excess of €12 billion in building a sustainable and economically valuable transport network and services;
- Prioritise appropriate public transport responses and initiatives;
- Complete the major inter-urban road routes and initiate a number of key road projects of strategic economic importance; and
- Make significant investment in local and regional road improvements helping to support direct employment.

Planning for future investment projects will also continue, alongside investment in important programmes such as rail safety and traffic management.

The benefits of this investment will be significant and some highlights of the outcomes to be achieved include:

- Journey time on all our major inter-urban road connections will be significantly reduced
  - M1 Belfast/Dublin 2 hours
  - N4/N6 Galway/Dublin 2 hours
  - N7 Limerick/Dublin 2 hours
  - N8 Cork/Dublin 2 hours 30 minutes
  - N9 Waterford/Dublin 1 hour 45 minutes
  - M20 Limerick/Cork 50 minutes
- By 2016, the Luas will be carrying 42 million passengers and remove 12 million car trips from the road network annually
- In its first year of operation, Metro North will remove 13 million car trips from the road network
- Passenger numbers on the DART and Greater Dublin Area commuter network will grow from a 2009 base of 29 million toward a target of 36 million
- The Road Safety Strategy will target continuing the downward trend in road deaths.
- Investment in cycling and pedestrian infrastructure will result in increased modal shares for each

These achievements will be significant and will contribute to enhanced environmental outcomes along with unlocking productive capacity in the economy.

Transport Capital Investment – Summary of Findings

Analysis of spending programmes under the aegis of the Department of Transport has given rise to the following broad findings:

- The Department of Transport Capital Programme is the largest single programme of expenditure and accounts for around one third of all Government capital investment.
- The programme of investment pursued over the past decade or so has transformed the quality and quantity of the stock of transport capital and the infrastructure deficit which previously characterised the transport network in Ireland has been significantly addressed.
- This is true of all aspects of transport infrastructure including regional and local roads, light and mainline rail and the bus, port and airport stock.
- In light of the economic contraction currently being experienced, the expanded capacity levels achieved over the past number of years are likely to be sufficient to meet anticipated demand over the medium term. Nonetheless planning for a return to growth should continue.
- In most areas then, the priority for further investment will be on essential maintenance and safety-related spending.
- In other areas however further investment has the potential to unlock productive capacity in the economy and enhance national competitiveness. The completion of the MIUs and the development of key strategic national roads and public transport projects are among the projects to which there could be a significant economic return.

5. Environment, Heritage and Local Government

5.1 Overview

In the years to 2016 the Government will invest in excess of €8 billion in capital spending programmes under the aegis of the Department of Environment, Heritage and Local Government. This will build on the very significant progress achieved in these spending programmes over the past decade. The box below summarises the key focus of medium-term investment plans.

Environment, Heritage and Local Government Investment 2010-2016
In excess of €8 billion will be invested in the years to 2016 in environment, heritage and local government infrastructure. The core elements of this are: ▪ In excess of €3.4 billion will be invested in upgrading and expanding the national water services infrastructure targeted at priority projects required in the light of future demand and essential environmental and public health standards. ▪ €4.4 billion will be invested in social housing programmes, meeting the needs of tens of thousands of households and progressing much needed regeneration programmes in Dublin, Limerick and other areas. ▪ Over €100 million will be invested in important waste infrastructure ▪ In excess of €200 million will be invested in valuable local services such as fire and emergency services, libraries and more. ▪ In excess of €200 million will be invested in important heritage and architectural protection.

5.2 Rationale for continued Investment[27]

5.2.1 Housing Programme

The high-level objective for this programme is to contribute to national social and economic development through the promotion of quality housing in sustainable communities, including the provision of accommodation for low income groups. The Housing Programme covers a range of activities and programmes from the social housing investment programme, the regeneration/remediation of social housing (including regeneration projects such as Ballymun and Limerick, improvement works on existing local authority housing, and energy efficiency programmes for public housing), provision of accommodation for Travellers, provision of

[27] Strategic objectives stated in this section are drawn from the NDP Annual Report 2007

accommodation for the homeless, support for social housing provided through the voluntary and co-operative sector, and the provision of housing adaptation grants for the elderly and the disabled.

With specific regard to social housing – which accounts for the vast bulk of expenditure in this area - the strategic objective is to address the housing requirements of those who cannot meet their own housing needs from within their own resources by direct provision of social housing, improving the overall quality of the social housing stock, and meeting the particular needs of the homeless and Travellers.

In terms of the economic justification for intervention, the social housing programme can be viewed as a straight forward redistributive measure in favour of low income households, the homeless and Travellers. A case for addressing the central market failure persists where beneficiaries have insufficient income to provide for their own accommodation needs. As discussed below however, the environment in which housing policy operates has been transformed in recent times and so the scale and nature of supports in this sector must now be reconsidered.

5.2.2 Water Services Programme

The strategic objective for this programme is to provide a water and wastewater treatment infrastructure capable of meeting the needs of the population and economy, facilitating proper planning and sustainable development and complying with national and EU environmental requirements. Key priorities have focused on facilitating development, meeting the terms of EU directives and addressing public health issues. In addition, activities have sought to protect and improve water resources, drinking water quality and water dependent eco systems.

In terms of the economic justification for intervention, water services have some characteristics of public goods as they are somewhat non-excludable. The potential for private sector investment is limited by the absence of a pricing mechanism but as in the case of other areas of capital investment there is scope for greater private sector involvement in the operation of services.

A critical consideration here in terms of the rationale behind government support is the need to comply with EU directives in this area. The prospect of substantial fines associated with failure to meet the required targets for wastewater treatment and drinking water quality - as well as bathing and shellfish water standards – in part drives the need to invest in this area.

5.2.3 Waste Management

This programme seeks to deliver an integrated waste management strategy to ensure that various EU and domestic targets are satisfied, in particular in relation to diversification from landfill. Activities have involved landfill remediation, enhancing recycling and recovery services and support of waste management processes generally.

Regarding the economic justification for government intervention, policy in this area is designed to address historical under-investment in this sector and the negative spill-overs that arise from externalities associated with pollution and sub-standard disposal of waste. As in the case of water services investment, the need to meet domestic and EU compliance targets is also a major consideration.

5.2.4 Environment

The primary strategic objective of this programme is to support Ireland's response to obligations under the Kyoto protocol.

5.2.5 Other capital spending programmes

A number of smaller programmes complete capital expenditure under the aegis of D/EH&LG, namely:

- Local Government Programme (incorporating Fire and Emergency Services, Library Services and Community and Social Inclusion);
- Heritage Programme; and
- Other services (of which spending under the Peace and Reconciliation Programme is the main capital outlay).

In parallel to the various strategic objectives under these programmes, government intervention is largely predicated on the basis of providing merit goods, public goods and essential social services not available from the market.

5.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand

5.3.1 Overview

Very significant investment in the programmes under the aegis of D/EH&LG over the past number of years has transformed the quality and quantity of infrastructure. Table 5.1 shows spending by programme since 2004.

Table 5.1	**Department of Environment, Heritage and Local Government Capital Expenditure by Programme, 2004-2009**					
	2004	*2005*	*2006*	*2007*	*2008*	*2009*
Programme		*€ million*				
Housing	1,003	1,085	1,179	1,364	1,515	1,160
Water	400	418	465	477	496	500
Environment	3	3	25	3	12	54
Waste	-	-	15	9	56	5
Local Govt	53	64	88	52	55	40
Heritage	27	32	38	47	57	32
Planning	24	18	21	23	12	1
Other	39	44	40	10	11	9
Total	**1,550**	**1,665**	**1,871**	**1,985**	**2,215**	**1,807**

5.3.2 Housing

Progress under this programme has been significant: for example the needs of some 20,000 households were met in 2008 through the various social and affordable housing measures. A similar level of progress was achieved in 2009. Demand for social housing support has increased however. Most recent data indicate that at end March 2008, just over 56,000 households were in need of social housing support compared with nearly 43,000 in 2005, an increase of over 30 percent.[28]

Table 5.2 illustrates the various housing programmes and approximate allocations for 2009.

[28] Department of Environment, Heritage and Local Government (2008) *Local Authority Social Housing Needs Assessment.*

Table 5.2	**Housing Programme Descriptions and Allocations 2009**	
Capital Housing Programmes	*€ mil*	*Programme Description*
Social Housing		
Local Authority Housing	740	Supply of Local Authority social housing
Regeneration/Remedial Works	190	Regeneration programmes, the central heating programme and improvement works
Voluntary & Co-operative Housing Capital Assistance Scheme (CAS)	110	Grants to voluntary bodies to provide housing to vulnerable groups such as the elderly and the disabled
Traveller Accommodation & Support	35	Provision and refurbishment of Traveller specific accommodation
Childcare Facilities	0.5	Meets the capital costs of providing childcare facilities in both new and existing LA housing estates and other social housing projects
Communal Facilities in Voluntary & Co-operative Schemes	2.5	Funding for the provision of communal facilities in voluntary and co-operative housing schemes
Affordable Housing & Private Sector Market Supports		
Sites Subsidy	14	Provides for subsidies under the 1999 Affordable Housing Scheme, Shared Ownership, the Pilot Market Acquisition Scheme, etc
Mortgage Allowances	3.5	Assists house holders, for a 5 year period, who are LA tenants to become owner-occupiers of other dwellings
Private Housing Grants	65	Provides private housing grants under the Housing adaptation grant scheme for older and disabled people
Total	**1,160**	

Medium-term policy in this area is among those for which broad economic developments and trends in the structure of the economy have most relevance. The changes in the housing market experienced since the launch of the NDP materially alter the optimum policy mix for achieving the objectives of the housing programme. The correction in the housing market has two core implications for policy:

- Falling house prices and land values mean a substantially lower funding allocation will be required for the programme; and
- The number of unoccupied dwelling units in the country weakens the case for continuing with a construction-centred investment programme. Acquisitions of existing stock will continue to play an important role in the early years of the programme but the only viable medium term option is to undertake a re-balancing of investment towards a more lease based model.

While the objectives of the social housing programme remain valid, developments in the construction sector permit the achievement of very significant savings. Accordingly, a funding allocation substantially lower than that of recent years will be sufficient to make very real progress against programme objectives.

As a result of the range of relevant developments which have taken place recently, D/EH&LG is taking a new direction in the pursuit of the goals of this Programme. The new policy mix is characterised by:

- Continuing roll out of the Rental Accommodation Scheme (RAS) and securing housing on a long term lease basis;
- Construction/acquisition of social housing units to be used only to replace units lost through tenant purchase; to meet needs where leased properties are unavailable and to meet special housing needs;
- Using available capital resources to support regeneration programmes such as Ballymun, Fatima Mansions and Limerick, energy efficient remedial works and to introduce performance-related supports to improve the efficiency of the use of existing housing stock; and
- The use of unsold affordable housing units in local authorities for a range of productive housing purposes.

The medium term objective of D/EH&LG is to maintain a social housing stock comprising of traditional social housing units with an increase in the number of leased units (provided by both housing authorities and voluntary bodies) to allow for flexibility in responding to social housing needs. This will result in a rebalancing between current and capital expenditure: with an increase in leasing, current expenditure will rise. As the annual current expenditure costs of leasing a unit are lower than the upfront capital costs of constructing one, the fall in capital costs will exceed the current expenditure increase required. Leasing costs will become a non-discretionary item however and will increase over time in line with increases in the stock of leased units contracted and the level of the rents payable by Local Authorities. The funding proposals at Section 5.4 allow for a transfer from capital to current expenditure to fund the increased leasing costs envisaged. The capital programme can then increasingly focus on the provision of expenditure for the major regeneration schemes planned in Limerick, Fatima Mansions and the ongoing Ballymun scheme.

While the current move to secure additional housing units through leasing rather than new build or acquisition is supported, the new policy approach should not rely solely on leasing. The depletion in the public housing stock that this would entail, coupled with demographic pressures which will become manifest in the medium-long term would lead to a heavy burden on current expenditure. The policy approach pursued by D/EH&LG will therefore be to adjust the balance between leased and acquired and built units. This approach can be reviewed as broader developments occur.

5.3.3 Water Services

The considerable investment in water services infrastructure over the past decade or so yielded significant achievements. From a base of 25 percent in 2000, compliance with the EU Urban Wastewater Treatment Directive now stands at 92 percent[29]. Alongside achievements in meeting required environmental standards, investment in this area has facilitated economic and social advancement. Between 2000 and 2009, 480 water and wastewater schemes were completed. These investments translate to upgrading of the national wastewater treatment infrastructure by a capacity capable of meeting the needs of a population of 3.7 million and upgrading of drinking water treatment capacity equivalent to the needs of a population of 1.1 million[30].

This progress in building capacity in the water services infrastructure will help in addressing potential future demand, both in terms of the need for water services to facilitate development and in meeting domestic and EU environmental and public health compliance requirements. On the first point, the fall-off in residential development will reduce demand. There will however be a requirement for continuing investment to address existing infrastructural deficits, particularly in key urban centres. On the second point, higher compliance with directives was assisted by economies of scale associated with major capital works in towns and cities. Achieving compliance in the remaining areas will require proportionately greater investment. Furthermore there is a growing compliance burden in this

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[29] i.e. compliance with the requirement for secondary treatment in agglomerations over 10,000 PE discharging to coastal waters and agglomerations over 2,000 PE discharging to estuarial or freshwaters.

[30] In interpreting Population Equivalent (PE) data such as these it is important to note that the geographic distribution of the enhanced infrastructure does not necessarily match the actual population distribution – i.e. enhancement of a infrastructure to a PE matching, or in excess of the actual population does not necessarily mean adequate capacity in all areas, as it is likely that the PE of infrastructure will exceed demand in some areas and fall short in others. PE measures the organic biodegradable load from both the domestic and non domestic sectors.

area including the imminent publication of River Basin Management Plans under the Water Framework Directive.

Investment must also strive to ensure that the water services infrastructure is capable of satisfying demand in critical centres for industrial and commercial development in order to facilitate economic recovery.

Future policy in this area will be focused on minimising the amount of 'lost load' – i.e. treated drinking water which is lost through leakages in the distribution network. A Water Conservation Sub-Programme exists as a sub-programme of the Water Services Investment Programme at present. Levels of leakage from the system – or 'unaccounted for water' (UFW) - vary across county and city councils and the national average is in the region of 43 percent. For the Greater Dublin Area, the comparable level is around 30 percent. Policy will aim to address the current situation. The Water Services Investment Programme 2010-2012, accords particular priority to addressing this issue by providing for an accelerated programme of mains rehabilitation.

The Minister for the Environment, Heritage and Local Government is currently finalising proposals to give effect to the commitment in the renewed Programme for Government to introduce charging for domestic water in a way that is fair, significantly reduces waste and is easily applied. The proposals will include draft legislation to remove the prohibition on charging for domestic water services and will also address the arrangements for the delivery of the water metering programme.

5.3.4 Waste Management

Progress under this programme has included growth in the number of 'bring banks', remediation of landfill sites and the delivery of large scale materials recovery facilities.

A recent benchmarking study of existing waste management facilities showed that while progress is being made in some areas, Ireland continues to perform poorly in relation to cost and availability of waste management facilities with reference to a group of comparator countries[31]. Alongside the obvious environmental implications, this also has ramifications for the competitiveness of enterprise in Ireland.

While the fall in economic output can be expected to have knock-on effects for demand for waste facilities, the need to upgrade existing infrastructure and meet domestic and EU

[31] Forfás (2009) *Waste Management in Ireland and Policy Priorities*

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requirements persists. Obligations in this regard will become all the more pressing with the onset of mandatory landfill diversion target dates.

5.3.5 Environment

The bulk of expenditure here relates to the purchase of carbon credits / allowances to meet Ireland's targets under the Kyoto Protocol. The fall-off in emissions associated with lower economic activity will serve to mitigate the need for some of this spending over the medium-term. Existing credits purchased will be sufficient to meet requirements over the period to 2012 and so there is significant scope to achieve savings in this area.

5.4 Focus of Medium Term Policy

Based on the foregoing analysis this section sets out a revised programme of investment for capital spending under the aegis of D/EH&LG.

5.4.1 Housing Programme

The net effect of the range of developments in the housing sector outlined at Section 5.3 above is that a very significant level of housing need can be met from a lower level of resources.

5.4.2 Water Services Programme

As outlined at Section 5.3, very substantial progress has been made in both servicing new land for development and meeting domestic and EU compliance requirements. In terms of meeting environmental standards, while many of the relevant targets have been reached or are close to being reached, there is increasing pressure from the EU regarding Ireland's failure to meet standards which should have been satisfied in 2005. Furthermore, the stock of compliance requirements faced in this area is growing. The Water Framework Directive, which requires the management of the water environment with aim of achieving 'good status' in all natural waters by 2015, will be a key driver in the future. River Basin Management Plans - currently being finalised - will set out a programme of measures necessary to achieve this target, and will require the enhancement of water services infrastructure.

Analysis has shown capacity constraints or anticipated future excess demand on the water infrastructure in a number of major urban centres[32]. This imbalance between supply and demand will have to be addressed and further investment will be required in certain areas.

There is a strong case therefore for a continued high level of investment in water services infrastructure, and in addition, the positive effects of falling construction prices can be

[32] Forfás (2008) *Assessment of Water and Wastewater Service for Enterprise*

harnessed to achieve better value for money. It is proposed to continue a very significant programme of water services investment over the course of the capital envelope.

The new funding level will amount to a very substantial sum in real terms, given reduced tender prices as outlined at Section 2. As discussed at Section 5.3, efforts to reduce the level of unaccounted for water are being stepped-up. Finally, policy in this area will also be impacted by developments in relation to water charges.

5.4.3 Revised Capital Programme

Table 5.3 sets out the reprioritised capital programme for D/EH&LG over the medium-term

Table 5.3	**Department of Environment, Heritage and Local Government Reprioritised Envelope, 2010 - 2016**							
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	Total
	€ million							
Housing	880	684	690	590	547	547	547	4,485
Water Services	508	491	478	578	471	471	471	3,468
Environment	35	7	8	8	8	8	8	84
Waste Management	4	14	15	15	15	15	15	105
Local Government	35	27	29	29	29	29	29	205
Heritage	30	27	29	29	29	29	29	205
Other / Misc	17	3	1	1	1	1	1	5
Total	**1,509**	**1,253**	**1,250**	**1,250**	**1,100**	**1,100**	**1,100**	**8,562**

These allocations include a transfer of capital expenditure to current in respect of the increased focus on leasing in the new approach to housing policy.

5.5 Anticipated Outcomes of Investment

In excess of €8 billion will be invested in the years to 2016 in environment, heritage and local government infrastructure. The benefits of this investment will be significant. Among the highlights of anticipated achievements are:

- Investment in housing programmes will meet the social housing need of some 63,000 households by 2016 and the advancement of key regeneration programmes;
- Water services investment will make major in-roads in addressing deficiencies in our water infrastructure, particularly in NSS Hubs and Gateways;
- From a 2009 base of 92 percent compliance with the requirements of the EU Urban Wastewater Directive, 100 percent compliance will be targeted by 2016;

- In relation to drinking water standards, this programme of investment will also target 100 percent compliance with all requirements;
- The average level of unaccounted for Water as a proportion of total water produced will be reduced from 43 percent to 33 percent; and
- The will be significant advances in waste disposal from a base of 43 percent in 2009, 73 percent of biodegradable waste will be diverted from landfill by 2016.

These achievements will be significant and will generate substantial environmental, social and economic benefits into the medium-term.

Environment, Heritage and Local Government Capital Investment – Summary of Findings

Analysis of spending programmes under the aegis of the Department of Environment, Heritage and Local Government has given rise to the following broad findings:

- D/EH&LG is the second largest capital spending Department, and within its capital programme, expenditure on housing and water services predominate.
- Regarding the housing programme a new policy approach involving a balance between leasing and building, and a radically different property market means that a substantial level of housing need can be met with significantly reduced resources.
- Investment in water services is driven by the need to facilitate development and achieve compliance with various national and EU regulations, in particular the Wastewater Treatment, Drinking Water, Shellfish and Bathing Water Quality Directives.
- While very significant progress has been made in this regard, there is still a way to go to achieve full compliance and in addition the water infrastructure in a number of our NSS Gateways and Hubs is in need of upgrading. For this reason funding to the Water Services Investment Programme should continue to be afforded high priority.
- Policy will also focus on reducing the level of water lost through leakages in the distribution network.
- Given the contraction in the economy, Ireland's emissions are falling and the current stock of carbon credits purchased is expected to be sufficient to meet requirements over the period to 2012.
- Continued expenditure will be required in other areas such as waste management, local government programmes and other services.

6. Education and Skills

6.1 Overview

In the years to 2016 the Government will invest in excess of €4 billion in capital spending programmes under the aegis of the Department of Education and Skills. This will build on the very significant progress achieved in these spending programmes over the past decade. The Box below summarises the key focus of medium-term investment plans.

Education and Skills Capital Investment 2010-2016
In excess of €4 billion will be invested in the years to 2016 in capital infrastructure under the programmes of the Department of Education and Skills. The core elements of this are: ▪ €3.1 billion will be invested in upgrading and expanding our primary and second-level schools; and ▪ Over €650 million will be invested in improving the stock of our higher education infrastructure.

Capital expenditure in D/E&S is concentrated in three large programmes: spending on primary, second-level and higher education. Within primary and second-level, the focus is on school building, improvement and maintenance. In addition there is a renewed focus on upgrading schools ICT facilities. Higher education spending focuses on improvement of infrastructure in our Universities, Institutes of Technology and other colleges. Until the recent transfer of function, this also included the Programme for Research in Third Level Institutes (PRTLI). PRTLI is now the responsibility of the Department of Enterprise, Trade and Innovation along with other research related investment.

6.2 Rationale for Continued Investment[33]

The strategic objective of the Primary and Second-level Education Programmes is to enhance and augment Ireland's school infrastructure. The strategic objective of the Higher Education Programme is to enhance and augment Ireland's higher education infrastructure to better serve economic and social development.

The economic rationale for investment in education by private individuals is predicated on the fact that the returns to education and training are unambiguously positive[34]. Particular conditions of the market for education however can distort the context in which this

[33] Strategic objectives stated in this section are drawn from the NDP Annual Report 2007

[34] Expert Group on future Skills Needs (2006) *Tomorrow's Skills: Towards a National Skills Strategy*.

investment decision takes place. In short, a number of market failures and social and economic policy perspectives necessitate state involvement in the market for education.

In general terms, governments recognise the social and economic benefits that accrue to society at large of having a better educated population. The benefits of education are not just enjoyed by individuals, but by wider society. In addition, education usually precedes employment in an individual's life, and the inability to pay for education could act as a barrier in the absence of government funding. Governments therefore have a role to play in supporting educational investment.

A list of basic economic and policy factors justifying government intervention is presented below[35].

- Positive externalities: the social returns to education outweigh the private returns in the form of productivity spillovers, reduced unemployment and social welfare payments, increased civic participation and reduced crime. The government therefore has an interest in investing in education;
- Information asymmetries: individuals can be unaware of the extent of the benefits that can accrue from education. Education is a merit good and so policy dictates that participation is compulsory up to the age of 16;
- Access to finance: because of the timing of education decisions – education tends to occur early in a person's life - individuals would generally lack the means to pay for education on an open market. Also, because of the element of risk involved (as participation in education will not always result in higher earnings) some individuals may not opt to invest in education; and
- Equity: equal access and compulsory participation in education are features of government policy in this area on account of equity objectives.

There is clearly then a case for government intervention in the provision of education, broadly defined.

[35] This material draws on work by Lane, O, 'Education, Health and Other Non-Market Services' in Harmon, C and C Newman (2000) *The Economy of Ireland – Policy and performance of a European Region*. Gill and MacMillan

6.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand[36]

6.3.1 Overview

Very significant investment in the programmes under the aegis of D/E&S over the past number of years has transformed the quality and quantity of educational infrastructure. Table 6.1 below shows spending by programme since 2004.

Table 6.1 Department of Education and Science Capital Expenditure by Programme, 2004 – 2009

	2004	*2005*	*2006*	*2007*	*2008*	*2009*
Programme		*€ million*				
Primary	171	267	245	399	489	329
Second-level	162	235	249	247	155	197
Higher Education	97	91	116	147	155	200
Education IT	20	6	4	2	1	23
Other	-	3	3	18	29	11
Total	**450**	**602**	**617**	**813**	**829**	**760**

6.3.2 Primary and Second-level Education

Investment in schools was the main focus of expenditure over the 2004 – 2009 period. This was driven by demographic factors, specifically increasing fertility rates since 1995 and net inward migration. Headline outputs of investment over the period were:

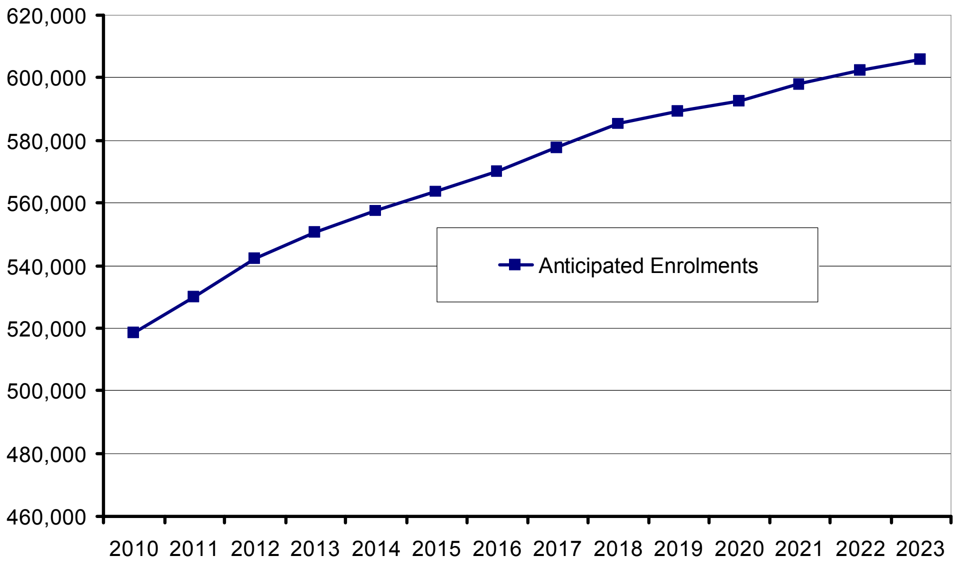
- 400 large scale schools projects at a total cost of €1.45 billion;
- 4,300 smaller scale school improvement projects delivered through the summer works scheme at a total cost of €420 million;
- 870 projects delivered under the Permanent and Additional Accommodation and the Small Schools Scheme at a total cost of €350 million;
- 2,650 small scale facility improvement projects at a total cost of €170 million; and
- Ongoing maintenance and improvement of primary schools at a total cost of €150 million.

The factors which have driven the demand for schools investment in recent years are unlikely to abate to any significant extent in the coming years. As noted above, birth rates have been

[36] Data in relation to outputs and investment levels cited in this section are drawn from information provided by D/E&S.

increasing since 1995. The extent of this increase has already fed into demand for primary school places and is now manifest in numbers enrolling in second-level education. This trend is intensifying: over 75,000 births were registered in 2008, the highest rate since 1896.[37] While the effect of this trend will be muted to some extent by the re-emergence of net outward migration, this can be expected to exert only a negligible dampening of demand for school places as emigration is expected to be concentrated in adult cohorts who do not have children. Figure 6.1 below illustrates projected enrolment at primary school level in the years to 2023. This increase in primary school enrolment will have an effect on demand for second-level places over time.

Figure 6.1 Projected Primary School Enrolments, 2010 - 2023



Source: CSO, Department of Education and Skills

There will therefore be a continuing demand for more primary school *places*. However this does not necessarily translate into continuing demand for more primary *schools*. As pointed out by the Report of the Special Group, significant inefficiencies exist in the number, size and distribution of primary schools in particular. Addressing these issues will offer scope for savings through economies of scale in both current and capital expenditure and lower maintenance and build costs. At present there are some 3,200 primary schools in the State and almost half are small, with five or fewer teachers. There are over six hundred schools with fewer than 50 pupils.

While it is beyond the scope of this review, a rigorous methodology for deciding the optimum number, size and geographical distribution of schools should be developed. The use of such

[37] CSO (2009) *Vital Statistics, Fourth Quarter and Yearly Summary 2008.*

an appropriately designed model will help ensure greater value for money in future investment decisions. A welcome development in this area is the compilation of an inventory of schools accommodation. Addressing the information deficit which previously existed in this regard will assist in policy planning.

Notwithstanding the continuing need for some degree of capital investment, as discussed elsewhere in this report, a positive corollary of the correction taking place in the construction sector is the markedly improved opportunity for value for money in public procurement. The Department of Education and Skills has already reported its success in achieving cost efficiencies in the tendering process and so lower build costs will afford the opportunity to deliver a higher level of schools stock. It is also anticipated that in the years to 2016, additional school places will be provided by means of temporary accommodation in some cases.

6.3.3 Higher Education

Over the 2004 - 2008 period expenditure priorities in this area were split between provision of facilities for undergraduate education (54 percent of expenditure) and enhancing the national research infrastructure (46 percent of expenditure).

In undergraduate provision, investment has helped to meet the challenges posed by higher participation which grew by approximately 25 percent between 2003/04 and 2008/09. This investment has been driven by the need to improve skills and assist in meeting Government targets in relation to participation rates. Investment has involved the delivery of 32 strategic national priority projects in higher education institutes at a cost of €400 million.

In terms of the research agenda, very significant progress has been achieved. PRTLI is now the responsibility of the Department of Enterprise, Trade and Innovation and achievements in this area are discussed in Section 7.

On the point of undergraduate enrolments – as with primary and second-level enrolments - demand for places will increase. While there will be a lag in demographic trends influencing demand for capacity, broader economic conditions – specifically the unemployment rate – are likely to mean that more school-leavers will remain in education than find employment as compared to recent years. Table 6.2 shows the forecast level of enrolments in the medium-term.

Table 6.2	**Projections of Full-time Higher Education Enrolment, 2010 – 2016**					
	2010/11	*2011/12*	*2012/13*	*2013/14*	*2014/15*	*2015/16*
Full-time enrolments	161,800	167,300	172,400	177,400	182,700	188,200

Source: Department of Education[38]

In addition, increasing part-time enrolments will put pressure on the existing level of capacity.

Notwithstanding these pressures, the scope for greater utilisation of existing capacity in higher education facilities needs to be explored. More innovative use of existing facilities and more efficient work practices should be harnessed to deliver a more economic employment of resources. Approaches may include lengthening the academic term and greater use of facilities at off-peak hours.

6.3.4 ICT in Schools

This programme initially centred on the provision of equipment grants for computers and related equipment and enhancing connectivity and networking. A total of €80 million was invested under this programme between 1998 and 2003. The focus has since moved to assisting schools in enhancing internal networking capabilities and exploiting broadband connectivity and a further €33 million was been spent between 2004 - 2008.

Considerable investment has therefore taken place, and a recent evaluation found that in the main, schools are making effective use of grants provided[39]. While a goal of policy should be to bring the student-computer ratio into line with leading countries in this area, the necessary steps to ensure full use of existing capacity should be also taken. Future investment in this area should be targeted in the areas where ICT can have the most advantageous effect on educational outcomes. In addition, the evaluation mentioned above found maintenance of existing stock to be an impediment to the development of ICT in schools, and investment should also be focused in addressing this shortcoming. A correctly tuned policy approach in this area can deliver lasting benefits to the economy and wider society.

6.4 Focus of Medium Term Policy

Based on the foregoing analysis this section sets out a revised programme of investment for capital spending under the aegis of the Department of Education & Skills.

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[38] Department of Education and Science (2010) *Projection of Full-time enrolment in teaching institutions aided by the Department of Education and Science.*

[39] Department of Education and Science (2009) *ICT in Schools – Inspectorate Evaluation Studies*

6.4.1 Primary and Second-level Education Programme

Because of the growth in anticipated medium-term demand for places in primary and secondary schools, it will be necessary to continue with a substantial level for these two programmes. The enhanced opportunities for value for money currently available however, will mean that this represents a significant increase in resources in real terms and should be sufficient to achieve substantial improvements in the quality of school infrastructure. Investment in this area is also in line with the commitment set out in the Renewed Programme for Government to progress the Capital Building Programme to meet demand for school places and reduce the reliance on pre-fabricated accommodation in the long-term.

6.4.2 Higher Education

While no fall in demand for facilities is expected here, there is only a limited case for continued exchequer funding of capital investment. Very significant investment has taken place to date in most higher education institutes and there are issues regarding the utilisation of existing infrastructure. More innovative ways of maximising existing capacity should be fully explored. The robustness of underlying need will remain the principal determinant of future decisions on project approval and selection for new investment. In this context there are a number of key projects which can deliver strong returns and should be prioritised. In addition there will be a requirement for continuing investment in the maintenance of existing facilities so as to meet ongoing educational requirements.

6.4.3 Proposed Reprioritised Allocation

Table 6.3 illustrates the reprioritised allocation to the Department of Education and Skills over the medium-term.

Table 6.3	**Department of Education and Skills Reprioritised Envelope, 2010 – 2016**							
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Primary	307	272	267	267	267	267	267	*1,914*
Second-level	200	179	174	174	174	174	174	*1,249*
Higher education	132	86	87	77	72	82	117	*653*
ICT (Schools)	43	37	37	37	37	37	37	*265*
Other programmes	24	20	20	20	20	20	20	*144*
Total	**706**	**594**	**585**	**575**	**570**	**580**	**615**	***4,225***

6.5 Anticipated Outcomes of Investment

In excess of €4 billion will be invested in the years to 2016 in enhancing the stock of our educational infrastructure. This investment will be critical in ensuring that our schools and higher education institutes are of sufficient quality and capacity to facilitate the achievement of the Smart Economy and are adequate to keep apace with the significant increases in demand anticipated.

The benefits of this investment will be significant:

- 35,000 additional permanent places will be delivered in new primary schools by 2016.
- 35,000 additional permanent places will be delivered in existing primary schools by 2016.
- 10,000 additional school places will be provided in temporary accommodation in the primary sector by 2016.
- 15,000 additional permanent places will be delivered in new second-level schools by 2016.
- By 2016, 8,600 new student spaces will be provided in higher education institutes.
- By 2016, 5,500 existing student spaces will be replaced with new facilities.
- By 2016, 20,100 existing student spaces in our higher education institutes will be upgraded.

These developments will assist in improving educational outcomes and will contribute to achieving the goals of the Smart Economy framework.

Education and Skills Capital Investment – Summary of Findings

Analysis of spending programmes under the aegis of the Department of Education and Skills has given rise to the following broad findings:

- The Department of Education and Skills is the third largest capital spending Department. Expenditure includes funding for primary and second-level schools, education IT and funding for higher education institutes.
- There has been very significant investment in school building and maintenance and expansion and upgrading of higher education facilities in recent years.
- Demographic developments are likely to exert pressure on our stock of schools over the coming years and a continued high level of investment is planned in this area into the medium term. Given falling land values and tender prices however, the real value of investment will be substantial. Investing in schools enhancements can also bring employment benefits during the delivery of infrastructure.
- Regarding higher education infrastructure, targeted investment should proceed where there is a robust economic case. The potential for more efficient use of existing infrastructure should also be explored.

7. Enterprise, Trade and Innovation

7.1 Overview

In the years to 2016, the Government will invest in excess of €3.8 billion in supports to the productive sector and in science, technology and innovation. The box below summarises the key elements of the Government's approach to investment in this sector.

Enterprise, Trade and Innovation Investment 2010-2016
In excess of €3.8 billion will be invested in the years to 2016 in capital programmes under the aegis of the Department of Enterprise, Trade and Innovation. The core elements of this are: ▪ Close to €2.4 billion will be invested through the Programme for Research in Third Level Institutes, Science Foundation Ireland and Enterprise Ireland's STI programmes to drive further improvements in our national scientific, technological and innovation capacity. ▪ Over €1.2 billion will be invested through the enterprise development programmes of IDA Ireland and Enterprise Ireland to consolidate and foster the enterprise base

The bulk of capital spending by D/ET&I is characterised by a small number of large programmes, focused in the main on fostering enterprise development through the State Enterprise Agencies and on developing Ireland's capacity to undertake world-class research and development through Science Foundation Ireland and the Programme for Research in Third Level Institutes (PRTLI).

7.1.2 Science, Technology and Innovation Programme

D/ET&I is the lead Department involved in implementing the Government's *Strategy for Science, Technology and Innovation* (SSTI) 2006-2013, effected primarily through this Programme. The agencies tasked with implementation of the Programme include Science Foundation Ireland and Enterprise Ireland. While D/ET&I is the lead Department charged with implementation of SSTI, five other Departments are involved in the support of research, technology, development and innovation activities.[40]

SFI provides funding for the attraction of world-class researchers in the areas of biotechnology, ICT and more recently, energy research. Promotion of oriented basic research is the core objective. Among the main outputs of investment in this area are research teams

[40] Namely the Department of Education and Skills, the Department of Agriculture, Fisheries & Food, the Department of Communications, Energy & Natural Resources, the Department of the Environment, Heritage & Local Government, and the Department of Health & Children.

and centres (which frequently partner with industry), bibliometrics (i.e. scientific publications and citations), intellectual property (IP) and PhD graduates. These outputs serve to enhance national scientific reputation and industry research capacity. EI supports the establishment and expansion of research capacity and capability within the indigenous enterprise base, links companies with higher education research and supports research commercialisation. Targeted outcomes involve exports and employment growth through enhanced product and service development, IP development and value added through the establishment of spin-out companies.

Early in 2010, responsibility for administering the Programme for Research in Third Level Institutes (PRTLI) was transferred to D/ET&I. The Programme provides financial support for strategies, programmes and infrastructure to underpin research across all disciplines in our 3rd level institutes. PRTLI is also an integral aspect of SSTI. Provision of research space is increasingly the focus of the programme.

7.1.3 Enterprise Development and Competitiveness Programme

This programme is executed through the State Enterprise Development Agencies. Investment is comprised of allocations to IDA Ireland for the attraction of foreign direct investment, allocations to EI for providing a range of supports to indigenous enterprise, grants through the County and City Enterprise Boards for the development of microenterprises and funding for Inter*trade*Ireland and the Interreg Enterprise Development Programme. IDA funding for research, development and innovation activities is also channelled through this programme.

High level outputs and outcomes targeted under the programme include attracting and embedding FDI investments, improving export performance, supporting the establishment of high-potential start-up companies, supporting high-value employment, promoting R&D in foreign-owned firms and facilitating regional development.

County and City Enterprise Boards (CEBs) are also involved in the implementation of this programme. There are 35 CEBs nationwide, tasked with promoting micro-enterprises (firms with fewer than 10 employees) at a local level.

7.2 Rationale for Continued Investment[41]

7.2.1 Science, Technology and Innovation Programme

The strategic objectives set out for this programme are centred on improving competitiveness, innovation and growth through targeted investment in research,

[41] The strategic objectives outlined in this section are drawn from the NDP Annual Report 2007

development and innovation. The broad rationale in terms of enterprise policy is positioned as the need to move the enterprise base further along the 'value-chain' – in other words away from low-cost manufacturing towards higher-tech activities involving better paid employment and higher value added to the economy.

Regarding the economic case for state intervention, it is argued that the private sector will fund less than the socially optimum level. Along with the inherent difficulty of relating inputs to outputs and outcomes in R&D expenditure, two basic market failures account for this underperformance:

- *Information asymmetries* - firms are often not aware of the potential benefits of performing R&D; and
- *Positive externalities* – where firms do engage in R&D which yields benefits, the social returns often outweigh the private returns.

7.2.2 Enterprise Development and Competitiveness Programme

The strategic objectives set out for this programme include enhancing national competitiveness, innovation and enterprise capacity across the economy to underpin sustainable and balanced economic growth, new employment opportunities and dynamic export activity.

In terms of specific market failures, the rationale for supporting high-tech enterprises is informed by broadly similar considerations as apply regarding support for R&D as at Section 7.2.1 above. In addition, information asymmetries both in terms of access to investment finance and business skills are also a consideration. Support to promote foreign investment in Ireland is driven by the need to address these information asymmetries and the requirement to compete with other jurisdictions for internationally mobile capital. To compete effectively in this market, the government informs potential investors about the advantages of investing in Ireland and provides additional subsidies and incentives where appropriate. Owing to the absence of private incentives to provide them, these services are not provided by the market and so there is an economic case for intervention.

7.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand

7.3.1 Science, Technology and Innovation Programme

While coming from a low base, there has been very strong progress recorded in expanding capacity in the Irish system of innovation. Despite some contraction in STI expenditure in 2009 in response to the severe fiscal crisis, State spending[42] over the ten year period 1998 -

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[42] As measured by GBOARD – *Government Budget Outlays or Appropriations for Research and Development.*

2008 across all relevant Departments - including current expenditure and EU sourced finance, and not just exchequer capital - increased from €231 million to €946 million in nominal terms[43]. The stock of physical infrastructure has been transformed by four cycles of PRTLI which involved enhancement of the national research infrastructure and harnessing of funding from private sources to contribute to the delivery of 80,000 square metres of new research space. The relevant human capital which is so vital to this area has also been enhanced by the establishment of SFI, the Research Councils and a range of other sectoral spending programmes.

The Government's Smart Economy Statement – launched in December 2008 – placed investment in the STI agenda at the core of national policy for economic renewal. The strategy pledged to *'invest heavily in R&D, incentivise more multi-national companies to locate more R&D capacity in Ireland and ensure the commercialisation and retaining of ideas that flow from that investment'*. Support for STI activities is therefore central to enterprise policy and by extension, efforts to secure a return to economic growth.

Notwithstanding this commitment, analysis undertaken for this review has pointed to a need to retune the policy focus in this area. The Government decision to transfer responsibility for PRTLI to D/ET&I has helped refocus policy in this area. In relation to the STI Programmes under the aegis of D/ET&I, efforts to enhance the commercialisation of research output and deliver a higher economic return to the very substantial investment in this area should be redoubled. In relation to the funding of PhDs on the scale currently being pursued, greater regard should be had for the employability of graduates and the relevance of research projects supported to the country's enterprise base. It will also be critical to ensure that all resources for basic research are specifically targeted at attracting genuinely world class researchers. A potential approach to enhancing the quality of project supported may be to fund only projects which have also won finance through international competitions such as the EU's Framework Programme, or projects which are in receipt of private sector funding. Such a mechanism would however have to be balanced with broader strategies in relation to the sectoral distribution of funding.

7.3.2 Enterprise Development and Competitiveness Programme

Evaluating achievements in capital expenditure in this area requires a somewhat different approach to that typically used in other areas of capital investment such as infrastructure development. Because the ultimate product of investment here is not a piece of state-owned

[43] This metric includes spending across all government departments and agencies and is not limited to spending through D/ET&I.

capital[44], measures of investment in terms of 'capacity expansion' are less relevant. It is therefore more appropriate to view achievements in terms of value added to the economy. In these terms, investment under the programme has played a role in creating sustainable jobs, promoting exports and fostering entrepreneurship.

Employment in agency-assisted firms stood at 272,053 in 2009, down from a high of 306,036 in 2007[45]. Value added to the economy of these firms was €60 billion in 2006, with a third of this figure attributable to the chemicals and pharmaceuticals sector[46]. Performance in attracting FDI into Ireland has also been strong, although there has been some slowdown in recent years.

Regarding demand for services into the medium term, the agencies will be centrally important in the push for economic recovery. It will be pivotal to remain agile and responsive to the needs of existing client companies while simultaneously redoubling efforts to attract new investment from overseas and assist Irish-owned firms in expanding.

The same quality standards must also be upheld in appraising investment proposals which come before the Enterprise Development Agencies, and all investments supported must still yield a positive net return to the State.

7.4 Focus of Medium Term Policy

In order to ensure a sustainable economic recovery, medium-term growth must be export-led. Over the course of the recession our exporting sectors have held up well and helped to stabilise the economy in the face of a major contraction in domestic demand. [47]

In order to nurture the development of the Smart Economy and enable the enterprise sector to create the jobs necessary for a return to prosperity, an unprecedented level of resources will be made available through the Enterprise Agencies.

7.4.1 Science, Technology and Innovation Programme

Funding to this programme will be increased. As discussed above however, additional steps must be taken to ensure that investment in basic research is expended on projects which are demonstrably world class and can attract international researchers of the very highest quality. This is also complementary to the goal set out in the Smart Economy Framework of attracting

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[44] Notwithstanding equity holdings in supported companies under certain situations

[45] Forfás (2008) *Annual employment survey 2009*

[46] Forfás (2008) *Enterprise Statistics at a glance - 2008*

[47] Barry, F and A.Bergin (2010) *Ireland's Inward FDI over the Recession and Beyond.* IIIS Discussion Paper No.321

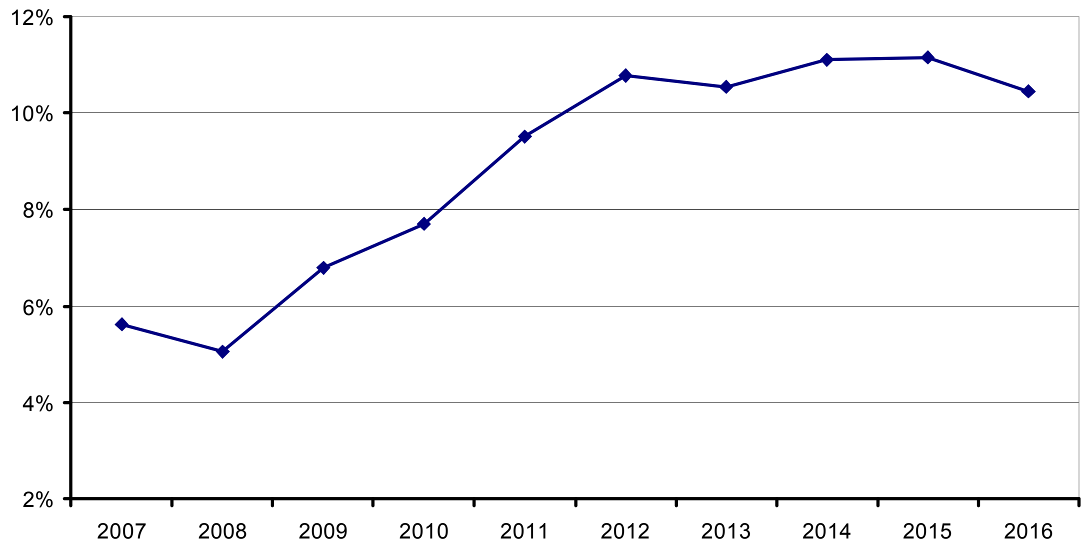
a premium cohort of world-class researchers who have been nominated for, or secured prizes, awards and honours that will drive up the international visibility of Ireland to the global research and high-tech business communities.

In the case of the enterprise element of funding under this programme, steps should be taken to increase the commercialisation of research outputs and deliver a higher economic return to this investment. Policy in this area will also be shaped by ongoing progress in relation to the unification of funding streams for STI investment which can deliver enhanced economic efficiency in the allocation of scarce resources.

7.4.2 Enterprise Development Programme

This Programme will be critical to the national economic recovery and there will be a significant increase in the level of funding to the Programmes under the aegis of D/ET&I. This increase in funding represents a very real commitment to the enterprise agenda, particularly when viewed in the context of a considerably lower total capital envelope. In addition, the transfer of funding associated with PRTLI represents only a small element of this increased allocation. In the years to 2016, the proportion of the total capital envelope dedicated to the enterprise agenda will be double what it was in 2008 when capital expenditure peaked. Figure 7.1 illustrates this important trend.

Fig 7.1 Enterprise investment as a proportion of total capital investment



The revised public capital programme of investment in the areas under the aegis of D/ET&I is presented in Table 7.1 below, including agency level allocations[48].

Table 7.1 Department of Enterprise, Trade and Innovation Reprioritised Envelope, 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016	Total
	€ million							
STI Programmes	288	333	354	361	367	365	333	*2,401*
IDA Grants	86	86	86	86	86	86	86	*602*
Enterprise Ireland	78	76	89	92	91	83	80	*589*
Other Programmes	29	28	28	28	28	28	28	*197*
Total	**481**	**523**	**557**	**567**	**572**	**562**	**527**	**3,789**

7.5 Anticipated Outcomes of Investment

Investment under the programmes of the D/ET&I will assist the return to sustainable export-led growth into the medium-term.

Overall, the increased capital allocation for Enterprise and Innovation will enable the creation of new and sustainable long-term jobs, in addition to those supported by investment in physical infrastructure detailed elsewhere in this report. This investment demonstrates the national commitment to supporting the enterprise sector to survive, grow and drive export-led economic recovery. The increased focus on enterprise and innovation support will send a strong international signal of our national commitment to delivering the Smart Economy and implementing the recommendations of the Innovation Taskforce. The outputs and outcomes targeted under the medium-term programme of investment are highlighted below.

Supporting indigenous small and medium sized business

- Over the period, Enterprise Ireland analysis estimates that this investment can create 63,000 direct new jobs in Irish firms across the country which will lead to an additional 44,000 indirect jobs in the wider economy.
- In 2010, 75 high-potential start-up firms will be identified and supported. This will rise to 100 per annum by 2016.

[48] Which should be considered indicative for the later years of the programme within a definitive Department level total envelope.

Attracting foreign direct investment

- IDA Ireland analysis shows that this investment provides the basis for winning at least 640 new FDI investment projects over the next 6 years. Half of these will be outside Dublin and Cork.
- IDA analysis shows that over the period, this investment will create 98,000 direct new jobs in FDI firms across the country. This will lead to an additional 68,000 indirect jobs in the wider economy.

Delivering a knowledge economy

- This investment will provide for the Innovation Fund and new Seed and Venture Funds as recommended in the Smart Economy and Innovation Taskforce Reports. These measures will act to leverage valuable private sector funding.
- In the years to 2016, the number of firms with 'significant R&D'[49] will increase by 30 percent from 45 to 59.
- There will be 10 percent growth in the number of firms with 'meaningful R&D'[50], from 700 in 2009 to 770 in 2016.
- SFI will continue to fund its 2010 baseline number of 334 Principal Investigator–led research teams in the years to 2016.
- There will also be growth in the number of patents and licensing agreements associated with this investment.
- Investment of an additional €36 million will deliver nine new industry led applied Competency Centres.
- PRTLI 5 will proceed and will see investment of €300 million in higher education institutions across the country. This will significantly contribute to the Government's goal of developing the capacity and capability of our higher education institutions to carry out high-quality research in areas of strategic national importance and will include a wet lab facility as recommended in the Innovation Taskforce report.

Taken together, these outcomes will represent a significant return on investment and will be the barometer of success of enterprise and innovation policy.

[49] 'Significant R&D' refers to firms spending in excess of €2 million per annum on R&D activities.

[50] 'Meaningful R&D' refers to firms spending in excess of €100,000 per annum on R&D activities.

Enterprise, Trade and Innovation Capital Investment – Summary of Findings

Analysis of spending programmes under the aegis of the Department of Enterprise, Trade and Innovation has given rise to the following broad findings:

- The Department of Enterprise, Trade and Innovation has a significant capital programme, designed to enhance the competitiveness and export potential of enterprise in Ireland and promote the performance of STI activities.
- The programmes supported by D/ET&I and its agencies have played a key role in driving Irish economic growth in the past, and will again be central to the push for national economic renewal through promoting the export potential of enterprise in Ireland.
- The exporting sectors of the economy have already held up well and acted to stabilise the Irish economy in the face of a sharp contraction in domestic demand.
- In order to protect existing jobs and assist in the creation of new employment opportunities, an unprecedented level of funding will be made available to the Enterprise Agencies.
- STI Programmes will be prioritised, and policy in this area will be retuned to achieve greater commercialisation and return on investment.
- Funding through IDA Ireland and Enterprise Ireland will be integral to efforts to reverse the fortunes of the Irish economy and in the years to 2016, D/ET&I's proportionate share of the aggregate capital envelope will be double what it was in 2008. It remains critical that the agencies are flexible and adaptive to the needs of their client base while maintaining the highest standards in investment project appraisal.

8 Health and Children

8.1. Overview

In the years to 2016 the Government will invest almost €2.9 billion in capital spending programmes under the aegis of the Department of Health and Children. This will build on the progress achieved in these spending programmes over the past decade and serve to expand and improve our stock of health sector capital. The Box below summarises the key focus of medium-term investment plans

Health and Children Capital Investment 2010-2016

In excess of €2.8 billion will be invested in the years to 2016 in capital infrastructure under the programmes of the Department of Health and Children. Capital spending in this area encompasses four main programmes - acute hospitals/major facilities, primary community and continuing care, ICT, childcare - and a number of smaller programmes. The core elements of medium-term investment will be:

- In excess of €1.6 billion will be made available to fund the development of acute hospital facilities.
- €780 million will be invested in primary community and continuing care.
- In excess of €400 million will fund other important programmes.

In addition, development of primary, community and continuing care facilities will be funded through the leasing of newly developed primary care centres.

8.2. Rationale for Investment[51]

Capital investment in health services takes the form of investment in acute hospital infrastructure, primary community and continuing care, childcare facilities and the use of medical technology to enhance the care of patients. Investment in health infrastructure is designed to complement the overall effort to maximise the effectiveness and efficiency of the health services.

In terms of the economic case for intervention in this sector, health investment can be viewed as a redistributional policy, as having positive spillovers to the economy and society and as having characteristics of a merit good. Alongside the very obvious social benefits, an improved stock of health capital can boost the performance of the health service and in turn can make a significant contribution to the economy.

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[51] Strategic objectives stated in this section are drawn from the NDP Annual Report 2007

8.3. Assessment of Sectoral Capacity and Anticipated Medium-term Demand

8.3.1 Overview

Significant investment in the programmes under the aegis of the Department of Health and Children over the past number of years has improved the quality and quantity of infrastructure. Table 8.1 below shows spending by programme since 2004.

Table 8.1 Department of Health and Children Capital Expenditure by Programme, 2004 – 2009

	2004	*2005*	*2006*	*2007*	*2008*	*2009*
Programme			*€ million*			
Acute Hospitals	385	286	271	317	265	210
Primary Care	45	180	151	218	292	213
ICT	67	49	22	24	19	12
Childcare	-	-	35	108	80	55
Other	12	10	17	33	19	13
Total	**509**	**524**	**496**	**699**	**674**	**503**

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Among the key achievements in this sector has been the redevelopment or extension of a number of major facilities:

- Cork University Hospital (€204 million);
- St Vincent's Hospital Dublin (€203 million);
- Midland Regional Hospital Tullamore (€144 million);
- Midland Regional Hospital Mullingar (€28 million);
- University College Hospital Galway (€219 million);
- St James' Hospital (€63 million)

In addition, progress has been made in

- Improving safety and quality of patient care through the provision of increases in single rooms in acute hospitals and investment in infection control;
- The provision of Community Nursing Units to support services for older people. Expenditure has increased from €20 million in 2004 to over €100 million in 2008;
- Infrastructural works under the roll out of the National Cancer Care Strategy; and
- Delivering improved health technology including diagnostic equipment.

8.3.2 Future Policy Direction and Key Projects

There is however further scope for improvement in the stock of capital assets. Infrastructure deficits persist in both the acute care and the primary, community and continuing care sectors, and continued investment is required in these areas.

In order to improve efficiency of service delivery, policy has sought to develop and improve primary care and enhance home and community supports. This approach can then free up capacity in acute treatment environments.

There is a demand for investment therefore in both acute and primary, community and continuing care facilities. A number of key projects were identified as priorities. In terms of acute facilities, key projects include:

- Redevelopment of the Mater Hospital;
- A new National Paediatric Hospital;
- Construction of cardiac / renal facilities at Cork University Hospital;
- Construction of ward block and A&E facilities at Our Lady of Lourdes Hospital;
- Construction of ward block and A&E facilities at Letterkenny General Hospital;
- Improved maternity facilities;
- Roll out of the National Medical Imaging System; and
- The roll-out of the National Programme for Radiation Oncology.

In the area of Primary Community and Continuing Care, key priorities include:

- Investment in replacement mental health infrastructure (consistent with the national mental health strategy, *A Vision for Change*) funded through the disposal of surplus mental health lands;
- Completion of Community Nursing Units to support service delivery for older people and meet inspection standards;
- Primary Care Investment in isolated rural and socially disadvantaged urban areas including Glenties and Inchicore;
- Disability investment at centres in St Dympna's in Carlow and St Ita's in Portrane;
- Investment in residential and day care facilities to support services for people with disabilities; and
- Investment in facilities to support child welfare protection.

In terms of childcare facilities there has been considerable investment in childcare places in recent years through the National Childcare Investment Programme (NCIP). NCIP is designed to improve the availability and quality of childcare options, primarily through capital grant aiding the construction and refurbishment of childcare facilities. Significant further investment over the medium term will be less of a priority owing to achievements to date and anticipated future demand.

In relation to priority areas of investment, the budgetary pressures that have become manifest since these priorities were articulated, mean that it will not be possible to procure all of the projects through planned capital envelopes. In response to this, the Department of Health and Children has both reprioritised the timing of investment decisions and is exploring the potential for alternative means of financing investment such as leasing and asset disposal.

A number of key projects in the Acute Care sector have been identified as possibilities to progress through alternative finance means and can be expected to make a contribution to the upgrading of health infrastructure. These have been identified as

- Acute facilities at Sligo General Hospital
- Relocation of major maternity hospitals to acute hospital sites; and
- Modernisation of laboratory services;

In terms of primary care, the HSE has identified an extensive list of proposed developments to advance provision of primary care centres. Submissions were invited for proposals to develop over 250 sites and the Board of the HSE has approved in principle advancement of 182 locations. These projects are being progressed as leases. The summary position at present is as follows:

- 2 primary care facilities opened in 2009;
- 32 facilities are scheduled to open in 2010; and
- 91 facilities are scheduled to open in 2011/12.

These primary care developments are being progressed on the basis of leasing and this approach has been subject to detailed evaluation. HSE analysis shows that this approach offers good value for money. The costs are therefore predominately on the current side, and only minor costs in relation to equipping facilities are envisaged.

8.3.3 Drivers of medium-term demand for capacity in health capital

It is likely that there will be continuing demand for investment across the health sector into the medium-term. Aside from the poor quality of much of the existing health capital stock, three key factors will drive this need for ongoing investment as set out below.

a) Using modernised infrastructure to deliver reconfiguration and service improvements.

The availability of modern and appropriately located health infrastructure is fundamental to the transformation of health service provision. Ongoing investment is required to ensure that a range of facilities continue to be provided in support of the overall transformation agenda. Combined with appropriate service developments and further investment in areas such as information support systems, capital investment will be required so as ensure continued improvements in service quality within an overall more effective and efficient operating environment. With capital investment representing less than 3 percent of total public expenditure in health, a key consideration is how capital expenditure can be used to generate cost savings / efficiencies in operating costs and improved patient and service outcomes from any given level of current expenditure.

b) Patient Safety and Regulatory Standards

The Health Act 2007 established a revised regulatory regime for residential care provided to older persons. Within this context, a new set of standards was drawn up for this sector, to be overseen by the Health Information and Quality Authority (HIQA). As part of these standards, public nursing homes are subject to registration and inspection for the first time.

While enhanced regulatory oversight is clearly a positive development, pressure to comply with the new regulations will be compounded by the age of the existing stock. It was estimated in 2008 that:

- 27 percent of the stock was over 120 years old;
- 25 percent of the stock was 41 – 119 years old; and
- 28 percent of the stock was 21 – 40 years old.

It is clear then that resources will be required to replace and refurbish bed capacity in the public sector.

c) Demographic Demands

A corner-stone of policy in this area will be to assist older people in remaining in their own homes. Nonetheless, the pressures of an ageing population will give rise to an ongoing need for capital investment. Forecast demographic trends will continue to have considerable implications for the provision of modern long-term nursing home care places. Investment in support services will also be required to ensure that older people can continue to lead independent lives outside of formal residential care settings for as long as possible.

Equally, there is a need to expand step-down care (convalescent, respites rehabilitative and assessment care beds) in line with current and future demand.

8.3.4 Alternative Approaches to Financing

Because of the budgetary pressures which have arisen since the NDP was launched, a number of alternative financing mechanisms are being explored in the procurement of health capital. Regardless of the type of funding mechanisms, it remains a critical consideration that projects can deliver robust economic and social benefits.

8.4. Focus of Medium Term Policy

Based on the foregoing analysis this section sets out a revised programme of investment for capital spending under the aegis of the Department of Health & Children.

In relation to future demand in this area, a number of factors are driving demand for continued investment in health capital. As outlined at Section 9.3.3, the stock of the public health infrastructure needs further improvement, and a certain level of investment is required in order to address this and also to meet statutory requirements. A new regulatory environment and the pressures deriving from an aging population will serve to compound the need for improved health facilities into the medium term.

Along with pressures on acute facilities, existing infrastructure needs further investment in areas such as

- Mental health care;
- Disability care;
- Long-term residential care; and
- Primary care infrastructure.

The confluence of these factors and the level of quality of existing health infrastructure necessitate continued investment into the medium-term.

Notwithstanding, scope for further prioritisation exists, along with opportunities to secure greater value for money. In addition, alternative means of financing capital projects may yield greater efficiency. In terms of priorities for policy, it is critical that moves to develop and enhance home and community supports (in order to free capacity in acute facilitates) remain at the top of the agenda.

Based on this need for continued investment on health infrastructure the Public Capital Programme includes a significant level of funding for investment in health sector capital in the years to 2016. Given the very significant opportunities for achieving greater value for money, a very substantial level of capital stock can be procured from allocated resources. In addition, alternative means of financing and delivering projects should be considered where they are viable and where they offer value for money. It is critical that all capital investment projects pursued are consistent with the broad policy goal of achieving greater efficiency in healthcare.

Table 8.2 sets out an indicative breakdown of programme-level investment in the Health sector in the years to 2016. Within the context of a definitive total capital envelope, these programme-level allocations will be kept under review and informed by emerging developments, demand in each sector and availability of funding from alternative financing means.

Table 8.2	**Department of Health and Children Reprioritised Envelope, 2010 - 2016**							
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Acute Hospitals	240	231	275	291	262	167	167	1633
PCCC	164	104	60	44	73	168	168	781
ICT	40	40	40	40	40	40	40	280
Childcare	32	10	10	10	10	10	10	92
Other Programmes	15	15	15	15	15	15	15	105
Total	**491**	**400**	**400**	**400**	**400**	**400**	**400**	**2,891**

In line with the policy approach set out in Budget 2010, it is intended that there will be an increase in these levels of expenditure in 2011 and subsequent years in respect of mental health investment which can be financed through disposal of surplus assets.

8.5 Anticipated Outcomes of Investment

Close to €2.9 billion will be invested in the years to 2016 in capital infrastructure under the programmes of the Department of Health and Children. This investment will encompass four main programmes, acute hospitals/major facilities, primary and continuing community care, ICT, childcare and a number of smaller programmes. The benefits will be significant and will contribute to a range of improved health outcomes. Among the benefits of this investment will be contribution to

- An increase in cancer survival rates;
- Improved infection control;
- A reduction in the number of emergency admissions to acute hospitals; and
- The cessation of child admission to adult HSE mental health facilities.

These achievements will make a very strong contribution to improved health outcomes.

Health and Children Capital Investment – Summary of Findings

Analysis of spending programmes under the aegis of the Department of Health and Children has given rise to the following broad findings:

- The Health and Children capital programme has already undergone significant downward adjustment.
- A number of the priorities outlined in the NDP will not now be funded through the existing capital envelope. The Health Service Executive - in conjunction with the Department of Health and Children - is progressing the provision of infrastructure through disposal of surplus assets and leasing arrangements and is also exploring alternative means of financing investment.
- While there has been very significant investment in this sector and an improvement in the quality and quantity of infrastructure, there is scope for further improvement in the stock of health capital.
- There are a number of factors driving a continued need for investment in health capital into the medium-term, in particular the need for a modernised infrastructure to support reconfiguration and service improvement, demographic factors and improvements associated with regulation and quality standards.
- All future capital investment should be consistent with broad policy goals in relation to developing capacity in the primary community and continuing care areas and in modernising acute facilities.
- In recognition of the poor stock of existing health assets, and noting the pressures on infrastructure into the medium-term, a significant level of resources will be invested in this area over the medium-term, and give the enhanced opportunities for achieving value for money in public procurement, this will be sufficient to deliver a substantial level of resources.

9. Agriculture, Fisheries and Food

9.1 Overview

In the years to 2016, the Government will invest in excess of €1.5 billion in supports to the agriculture, fisheries and food sectors. The Box below summarises the key elements of the Government's approach to investment in this sector.

Agriculture, Fisheries and Food Investment 2010-2016
In excess of €1.5 billion will be invested in the years to 2016 in capital programmes under the aegis of the Department of Agriculture, Fisheries and Food. The core elements of this investment are: ▪ Over €600 million will be provided to support on-farm investment and the development of the food industry. ▪ Over €600 million will be invested in Forestry measures. ▪ Investment in other programmes, in particular, support to the fisheries industry will exceed €300 million.

Capital investment is part of the overall strategy of the Department of Agriculture, Fisheries and Food to promote the sustainable development of a competitive, innovative, consumer focussed food, fishery and forestry sector and to contribute to a vibrant rural and coastal economy and society.

9.2 Description of Programmes and Rationale for Continued Investment[52]

The overall strategic objective of capital investment in the programmes under the aegis of the Department of Agriculture, Fisheries and Food is to increase efficiency, improve competitiveness and enhance environmental sustainability in order to increase the contribution of the various sectors to the economy. The specific rationale for investment in each of the component programmes is considered in further detail below.

9.2.1 Development of Agriculture and Food (Farm Waste Management Programme)

On-farm investment

The Farm Waste Management Scheme and the Farm Improvement Scheme encourage the improvement and modernisation of Irish farms while contributing to the protection of the environment. The Farm Waste Management Scheme was introduced to assist farmers to invest in animal housing and waste storage facilities in order to reduce water pollution by

[52] Strategic objectives stated in this section are drawn from the NDP Annual Report 2007

nitrates from agricultural sources and to prevent such pollution. More specifically, the scheme was required to enable Ireland to meet the requirements of the EU Nitrates Directive following a European Court of Justice judgement that Ireland was in breach of its obligations to implement an Action Programme. The Farm Improvement Scheme assists farmers with the capital costs of modernisation through investments in order to improve their overall performance and market orientation while respecting EU and national standards. The scheme includes specific measures for animal housing and handling facilities, diversification, dairy hygiene, animal welfare and on-farm grain storage.

In addition, the Targeted Agricultural Modernisation Scheme, which consists of a range of measures designed to target particular needs by raising standards and improving competitiveness, was introduced in 2010 as part of an amended Rural Development Plan, 2007-2013. The Pig and Poultry Welfare Schemes in this package of measures will assist producers to convert existing production to a more animal-friendly approach in line with the requirements of EU directives, ensure that production meets the highest standards and protect and consolidate markets for growth. The Water Harvesting Scheme will encourage the harvesting of rainwater for use on bigger farms, thereby reducing dependence on either mains or well water supplies. A Dairy Equipment Scheme will focus on the introduction of the best technology into the sector in order to improve competitiveness and consolidate the already high standard of Irish milk supplies. New schemes in the sheep sector have the objective of halting the decline in sheep numbers and reducing labour inputs through the introduction of better handling facilities.

Food industry

Support is provided for capital investment in the marketing and processing of agricultural products to encourage improvements in the structure, scale and efficiency of production of high quality products to meet market demands and opportunities. The objective is to establish a diverse modern, innovative, sustainable and market-focussed food industry which can deliver growth and jobs within the medium term, and in particular, exploit and promote the potential for export growth.

9.2.2 Forestry Programme

The primary objective of the Forestry programme is to improve the level of afforestation in Ireland which is amongst the lowest in Europe. In addition to the economic and environmental benefits of increased afforestation, forestry has made a strong contribution to climate change mitigation and forests planted since the 1990s have had a significant impact in offsetting national Green House Gas emissions and obviating the need to purchase carbon credits. In economic terms, the output of the forestry sector was valued at €1.8 billion in 2008 and there are 16,000 people employed in the sector, predominately in rural areas. The environmental benefits include biodiversity conservation and enhancement, public recreation amenity, the conversion of agricultural land from being a net emitter of CO_2 to a net sequester and store of CO_2 and as a source of wood biomass for renewable energy.

9.2.3 Fisheries

The objectives of capital investment have been to ensure the economic, social and environmental sustainability of the fisheries industry for the benefit of coastal communities. Essential components of the policy approach are the development of a modern, competitive, sustainable and consumer focussed sector by investing in the aquaculture and fish processing sectors, improving and maintaining harbour facilities and bringing the Irish fishing fleet into balance with available quota resources through a fisheries decommissioning scheme.

9.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand

9.3.1 Overview

The agri-food sector has been transformed in recent years by changes in the EU policy framework, in consumer behaviour and demands, in international food markets as well as structural change in agriculture and the food processing industry. Very significant capital funding has been provided in the programmes under the aegis of the Department of Agriculture, Fisheries and Food to enable the agri-food, fishery and forestry sectors to adapt to these challenges. Table 8.1 below shows growth in spending since 2004.

Table 9.1 Department of Agriculture, Fisheries and Food Capital Expenditure by Programme, 2005 – 2009

	2005	2006	2007	2008	2009
			€ million		
Capital Expenditure	**201**	**211**	**320**	**678**	**546**

Progress across each of the major spending programmes is outlined below

9.3.2 Development of Agriculture and Food

The Farm Waste Management Scheme has facilitated a major improvement in the quality and quantity of animal housing and agricultural waste management facilities throughout the country. The scheme has been successful in putting in place the essential on-farm infrastructure, not only for the protection of the environment, but as the basis for improvements in efficiency, future growth and the development of the farming sector. The Farm Improvement Scheme has also assisted in upgrading and modernising on-farm infrastructure.

Similarly the Marketing and Processing scheme has driven improvements in the competitive position of the agri-food industry and supported employment and export growth. Major grant-aided investment is underway in the dairy and beef and sheepmeat sectors. A total of 19 capital investment projects have been awarded aid from the Dairy Investment Fund. This is geared to generating a potential capital spend of €286 million in the Irish dairy processing sector and will play a key role in improving efficiency, competitiveness and product specialisation. The Beef and Sheepmeat Investment Fund is supporting 15 projects aimed at increased scale and efficiency in primary processing, and added value in further processing for retail, food service and manufacturing outlets. It is expected to result in a net export increase of €433 million and 840 new jobs.

9.3.3 Forestry

The very high alternative land use values, both from traditional farming activities and attributable to buoyancy in the property market, have acted as a barrier to progress in the forestry sector in recent years. In addition, the long–term nature of investment in forestry has been a disincentive to private planting. Despite these unfavourable conditions, the proportion of land under forestry has increased significantly. Since 2000, 103,000 hectares of new planting has taken place and the land under forestry now stands at 730,500 hectares. There is an increased interest in forestry as a land option as evidenced by a substantial increase in the level of applications for afforestation supports.

9.3.4 Fisheries

The fisheries capital investment programme aims to enhance economic output, and support employment and exports. The investment programmes currently assist in supporting some 11,000 jobs in rural coastal communities while also making a significant contribution to the national economy (which amounted to €720 million in 2009). The Capital Programme for fisheries supports this level of output through a range of measures from marine research and technology to business development and innovation to delivering on Ireland's legal obligations under the Common Fisheries Policy. Recent capital investment programmes have assisted the seafood industry in remaining buoyant in the face of economic contraction, with potential for further expansion in the coming years.

Under the investment programme a total of €36 million was provided for the Decommissioning Scheme which resulted in the successful decommissioning of 46 fishing vessels, thus bringing the Irish fishing fleet into balance with available quota resources. This fleet restructuring programme was the necessary first step to enabling the delivery of a progressive seafood industry that has the potential for sustainable growth and employment creation in coastal communities dependent on seafood and fisheries related activities. The capital investment programme is therefore delivering on the development strategy as set down in the Cawley Report (2006) and the *Sea Change* Strategy (2007).

The Fishery Harbour and Coastal Infrastructure Development Programme has facilitated substantial investment in the six Department-owned Fishery Harbour Centres and in a significant number of Local Authority owned harbours. Expenditure under the programme amounted to over €73 million in the 2007 – 2010 period. This, and further planned investment, will provide substantial dividends to the fishing industry with regional and national economic benefits. Major investment projects include Killybegs Fishery Harbour Centre (over €50 million), Castletownbere Fishery Harbour Centre (€35 million and now nearing completion) and Ros an Mhíl Fishery Harbour Centre (€13 million). In addition to the employment provided in the construction phases of these projects, the investment has developed a range of harbours to modern standards, thereby enabling them to attract new and valuable business to the overall benefit of coastal communities and economies.

9.4 Focus of Medium Term Policy

The agri-food, fisheries and forestry sectors is the largest indigenous sector and makes a major contribution to economic and social development, particularly in rural Ireland. Some 150,000 people are employed in the sector which has an annual output of over €24 billion and exports valued at €8 billion. As such, the sector has a part to play in national economic recovery and there will be a role for continued capital investment.

Table 9.2 shows the profile of capital expenditure in the years to 2016. These may be subject to review given emerging policy developments.

Table 9.2 Department of Agriculture, Fisheries and Food Reprioritised Envelope, 2010 - 2016

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Ag and Food dev	274	198	40	40	40	40	40	*672*
Forestry	104	89	84	84	84	84	84	*613*
Fisheries	18	17	17	17	17	17	17	*120*
Other	34	46	29	29	29	29	29	*225*
Total	**430**	**350**	**170**	**170**	**170**	**170**	**170**	***1,630***

9.5 Anticipated Outcomes of Investment

The range of existing and new focused schemes for on-farm investment being implemented will continue to improve production standards and efficiencies and increase competitiveness while ensuring sustainability. The capital investment in the food industry will address the specific needs of the industry in a targeted manner and enable it to maximise the potential for growth through improved competitiveness and market orientation, thereby securing existing markets and providing opportunities for further expansion. The return on much of the expenditure programme, where the commitment of funding has been completed, will be in the form of improved on-farm standards and increased processing efficiency and product specialisation.

There will also be significant ongoing benefits arising from investment in the forestry programme. The Renewed Programme for Government commits to an increase in annual planting to 10,000 hectares per annum compared with a planting rate of the order of about 7,000 per annum in recent years. The well-established processing and saw-milling industry, which is export led, has the potential to expand further - both in terms of output and jobs - as demand in the global economy increases. In terms of climate change mitigation, the net contribution of Ireland's Kyoto eligible forests (i.e. forest planted from 1990) in 2008 amounted to 2.75 million tonnes of CO_2. Assuming a carbon cost of €17 per tonne, this represents a potential saving in the region of €46 million to the Exchequer. Sustaining the climate change mitigation benefits from afforestation into the future – along with the goods and services that flow from forests - will require that the annual planting rate of 10,000 hectares per annum is reached and maintained into the future from within the existing envelope.

There are real opportunities to attract foreign landings into Irish ports to ensure a reliable supply of raw materials for the processing sector and in establishing Ireland as a processing centre for EU and international landings. There is also major growth potential in aquaculture in order to meet EU seafood demand. The industry has potential to reduce the export percentage of commodity fish from 85 to 60 percent in order to enhance the associated benefits of added value production in Ireland, including in respect of foreign landings. The aquaculture sector has the potential to increase production by an extra 47,000 tonnes, giving a 78 percent increase on its current tonnage of 59,000. Capital support for the sector will be needed to leverage increased investment to deliver on this potential.

Agriculture Fisheries and Food Capital Investment – Summary of Findings
Analysis of spending programmes under the aegis of the Department of Agriculture, Fisheries and Food has given rise to the following broad findings: ▪ The capital programme implemented by the Department of Agriculture, Fisheries and Food provides a comprehensive range of schemes for the development of on-farm infrastructure (in particular through the Farm Waste Management Scheme). ▪ Investment also targets development of marketing and processing facilities in the food industry and the development of the fisheries and forestry sectors. ▪ As well as the economic return, the forestry programme provides significant climate change benefits. ▪ Expenditure and further existing commitments have grown to a very significant level in recent years however. ▪ Significant progress has been made in advancing the areas supported by the investment Programmes. ▪ There is a requirement for further investment in the coming years which should be closely monitored to ensure maximum return for public investment.

10 Communications, Energy and Natural Resources

10.1. Overview

In the years to 2016, the Government will invest in excess of €1.2 billion in capital spending programmes under the aegis of the Department of Communications, Energy and Natural Resources. This spending will complement and help leverage the estimated €20 billion capital investment in energy and telecommunications infrastructure from the private and semi-state sector that will be spent over the same period. This will build on the very significant progress achieved in these spending programmes over the past decade.

Very significant investment in the programmes under the aegis of D/CENR over the past number of years has led to improvements in the relevant infrastructure. Table 10.1 below shows spending by programme since 2005.

Table 10.1 Department of Communications, Energy and Natural Resources Capital Expenditure by Programme, 2005 - 2009

	2005	*2006*	*2007*	*2008*	*2009*
Programme	*€ million*				
SEI Energy	10	37	47	57	54
ICT	15	28	38	49	36
Other	23	27	26	20	12
Total	**47**	**92**	**111**	**126**	**102**

As Table 10.1 shows, capital expenditure by DCENR grew very considerably over the five year period under consideration reflecting the increasing importance of energy efficiency, research and development of renewable technologies, and broadband infrastructure in the context of national economic and social policy.

10.2. Rationale for Continued Investment[53]

10.2.1 Energy

Spending under this Programme is designed to support the development of a competitive, low carbon and secure energy supply. Particular emphasis is placed on reducing energy use in our building stock, on making Ireland a world leader in the deployment of renewable energy supplies and on the development of a new industrial base in the use of ICT technologies to improve energy efficiency.

[53] Strategic objectives stated in this section are drawn from the NDP Annual Report 2007

Reducing energy use in our buildings

A recent study by SEAI and McKinsey on the low carbon opportunities highlighted how energy efficiency measures offer the greatest potential to mitigate CO_2 in the short term. To date, a number of market failures such as negative externalities, transaction costs and information asymmetry have served to restrict investment by businesses and households. The programmes in this area are designed to overcome these barriers while stimulating investment and contributing to a shift in economic activity towards a smart, green economy.

Renewable Energy

Having met our 2010 target of 15% of our electricity coming from renewables, Ireland is set to become a world leader in the use of wind power over the next six years. This will be facilitated by the €5 billion investment that will be made by the grid companies – ESB, BGE and Eirgrid – over the next six years in our electricity and gas networks. SEAI will coordinate a range of research and grant programmes to develop the comparative advantage we have in wind, biomass and ocean energy resources. We will also work with our European partners to support the development of a European grid which will allow us to start exporting these new energy supplies.

ICT and Energy Efficiency

We have an opportunity to use Ireland as a 'test bed' location for new 'smart grid' technologies. Many of the worlds leading ICT companies are located in Ireland and are now undertaking research that can be applied to our relatively advanced grid infrastructure to help improve our own energy use and develop new products for a world market. Our support for new electric vehicle and smart metering technologies will assist such a development. Investing in new energy research centres that enhance our expertise in renewables penetration and in micro electronic communications will allow us develop new energy solutions which integrate power systems and home energy management systems.

10.2.2 Information and Communications Technologies

Investment in Information and Communications Technologies is vital if Ireland is to emerge as an international hub for globally traded ICT and cloud computing services and to ensure that other sectors can benefit from the efficiencies that ICT technologies can deliver.

The need for world class technological infrastructure in Ireland is all the more pronounced given the preponderance of traded services in Ireland's enterprise base. The importance of traded services to the Irish economy is likely to increase into the future and the ESRI forecasts that the services sector will account for 50 percent of total employment by 2015[54] and will make up 70 percent of total exports by the year 2025[55].

The overarching objective is to equip Ireland and its citizenry with the infrastructure and skills necessary to capitalise on this emerging digital future.

One of the key components of achieving this is to ensure universal broadband. Where the market fails to deliver connectivity, the State is stepping in through programmes such as the National Broadband Scheme, which is investing €220 million (€79 million Exchequer) in bringing broadband to currently unserved areas. This Scheme - along with the Rural Broadband Scheme that will be launched later this year - will ensure universal broadband coverage by 2012.

A second strategic objective is to facilitate and complement private sector investment in Next Generation Broadband Networks. This is being achieved directly through investment in networks such as the Metropolitan Area Networks (MANs) and the Kelvin International Connectivity Project. July 2010 saw the launch of the Government's unique ultra high speed 'Exemplar Test-bed Network', which is being used as both the locus of high-value R&D by international and national ICT companies as well as acting as a spur for network expansion by private companies. We are also facilitating new network investment by private operators through the 'One Stop Shop' model, which provides access to fibre ducting on state infrastructure. This investment will be underpinned by a regulatory regime which will facilitate a collaborative approach to private investment.

A third key objective is to develop the digital skills of our country via the provision of 100 Megabit broadband connectivity to all second-level schools, along with investment in the National Digital Research Centre and the Digital Hub Development Agency.

Investment over the next three years will also roll out a postcode system for Ireland that will form part of our national strategic infrastructure as well as delivering the economic opportunities and productivity savings of a national postcode system.

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[54] ESRI (2008) *Medium-Term Review*

[55] As cited in National Competitiveness Council (2009) *Driving Export Growth – Statement on Sectoral Competitiveness*

10.2.3 Natural Resources

Capital expenditure is targeted at a number of important programmes in the development of our natural resources including:

- Funding for Mining Services;
- Funding for the National Seabed Survey; and
- Funding for Inland Fisheries.

This will allow for the continuation of specific mine remediation projects; the surveying of priority bays and coastal areas; and the appropriate management and conservation of the inland fisheries stock.

10.3 Investment Priorities

10.3.1 Energy

SEAI has responsibility for implementing a wide range of spending programmes, many of which relate to improving energy use in our built environment. Given the number of households and businesses that could benefit from an energy efficiency upgrade, there remains substantial potential as yet unrealised. A new National Retrofit Programme will be launched later this year which will bring together all of the existing domestic microgeneration and retrofit programmes into a single overarching framework. The new programme will seek to stimulate market development of Energy Services Companies (ESCOs) and redefine the role of energy companies as suppliers of not just energy, but also energy services. Energy companies will be obligated to deliver specific targets, based on customer numbers or volume of energy supplied. In this way the strengths and customer relationships of energy suppliers are leveraged to deliver a broader programme than could be achieved by direct grant support.

There are approximately 1 million homes that could benefit from some form of energy efficiency retrofit. Recent analysis by SEAI indicates that approximately 25 percent of residential energy use could be saved through existing efficiency technologies,[56] which would ultimately save in excess of €10 billion more than it costs.[57] A similar picture exists in the commercial sector where an estimated 8,560 GWh of savings remain untapped. Delivery of the targeted 33% improvement in energy efficiency in the public sector over the next ten years also has the potential of bringing significant budgetary savings for all government departments.

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[56] SEI (2008) *Demand Side Management in Ireland - Evaluating the Efficiency Opportunities*

[57] Based on a combination of improved attic and wall insulation, high efficiency boilers, heating controls and limited number of CFLs and lagging jackets in 1 million homes.

In 2009, funding for SEAI's sustainable energy schemes was very substantially ramped up in support of the introduction of a new domestic retrofit programme and a substantial increase in activity in the low-income housing retrofit programme. Since the launch of the Home Energy Saving (HES) scheme in March this year, over 36,400 households have applied for grants totalling €41 million. Similarly, the Warmer Homes Scheme will deliver 22,000 retrofit measures in low-income households this year and 40,000 by year end since 2000. These schemes have provided the technologies, skills and systems required to deliver an energy efficiency retrofit programme.

A particular benefit of the National Retrofit Programme relates to employment creation. The types of construction work subsidised by these schemes are known to be labour intensive. The carbon tax is also likely to encourage households and businesses outside of the Emissions Trading Scheme (ETS) to invest in energy efficiency, thereby further supporting employment.

The National Ocean Energy Strategy, published in 2006, set out a ten year plan for the development of our ocean energy resources. In 2008 Government agreed the progression of the second stage of the plan involving the development of advanced marine energy research facilities, the deployment of grid connected test facilities off the Mayo coast and grant support for prototype ocean energy devices.

SEAI will also have a key role in the development of existing industry support programmes including support for new CHP, bioenergy and energy efficiency programmes. The Agency also has a role working alongside the Department, CER, SFI, ESB and other public bodies and industry participants in the development of industry energy efficiency initiatives.

Ireland is an ideal test bed for new 'Smart Grid' applications such as building energy management systems and electric vehicles. New Smart Grids enable better demand management, price signalling and system optimisation. The International Energy Research Centre based in the Tyndall Institute in Cork and the Energy Research Centre in Dublin will partner with industry to solve energy management problems with global applications. ESB have committed to a nationwide roll-out of charge points to all towns with a population in excess of 1,500 as well as fast chargers on motorways. The Government will incentivise this roll-out through a mixture of VRT reliefs and grants for the next two years.

10.3.2 Information and Communications Technologies

The development of ICT and broadband infrastructure has been a key focus of investment since 2002. However, due to a lack of investment in our main fixed line networks in the last decade and because of Ireland's challenging demographic circumstances (especially our low population density and stock of one-off housing) an ICT infrastructure deficit developed, in particular, in rural Ireland.

With increased competition between a variety of platform providers, broadband coverage, speeds and take-up have improved significantly in recent years. Broadband connections now account for over 90 percent of internet connections compared to 58 percent in early 2007. Broadband penetration now exceeds the OECD average and Ireland is among the leading countries in terms of year on year broadband growth. Notwithstanding this progress, further investment in the country's ICT infrastructure, to be led by the private sector, is required to plug existing gaps and enhance competitiveness and productivity.

Investment in the MANs has been an important component of state support for new fibre infrastructure, with 87 fibre-optic rings having been built across the country's towns and cities. The major towns and cities will be critical in leading economic recovery and enhancing the technological capital of these areas is a policy imperative. Research has shown that there is a trend internationally toward the availability of significantly faster broadband speeds in main cities than nationally[58]. Policy in Ireland should also target improving connectivity in the National Spatial Strategy Gateways and significantly increasing speeds. The next programme of fibre rollout should prioritise the National Spatial Strategy Gateways and Hubs.

Progression toward universal broadband coverage has been greatly improved by investment in the National Broadband Scheme (NBS) which is bringing broadband coverage to in excess of an estimated 220,000 premises in areas not adequately served by commercial providers. To provide coverage to the estimated 12,000 remaining households not covered by the NBS or other market providers we will invest in a new Rural Broadband Scheme which will provide all such houses with coverage by the end of 2012.

The main investment in new fibre optic networks will be made by the private sector through competing fixed line, cable, wireless, mobile, satellite, WiMax and other technologies. However given that the return on such investments are uncertain the state has a role in helping wherever it can by providing supporting infrastructure. The approach to this will be to leverage State assets such as ducting in road, water services, energy and public transport

[58] National Competitiveness Council (2009) *Our Cities: Drivers of National Competitiveness*.

projects and take the necessary regulatory and governance steps to maximise the use of these resources. Because about 80 percent of the cost of next generation network installation is accounted for by 'civil works'[59], providing access to all relevant state infrastructural works can achieve significant economies of scale.

Investment decisions in the current climate are not easy. What is clear is that continued investment in Next Generation Access Networks is an imperative if Ireland is to realise its potential as a modern, digitally-enabled economy and society. The Government is encouraging telecommunications companies to explore a collaborative approach to investment, which is similar to the sharing of network infrastructure already underway. The Government will continue to engage with industry and the regulator to promote the right environment for the necessary investment in NGNs.

10.4 Revised Capital Envelope, 2010-2016

Table 10.2 sets out the revised capital envelope for the years out to 2016. It should be noted that in the area of ICT and in the context of the policy framework set out above, the Government will consider further investment in digital infrastructure, services and skills.

Table 10.2	**Department Communications, Energy and Natural Resources Reprioritised Envelope, 2010 - 2016**							
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Energy programmes	100	100	136	136	136	136	136	*880*
ICT	60	60	40	40	40	40	40	*320*
Other programmes	12	10	10	10	10	10	10	*72*
Total	**172**	**170**	**186**	**186**	**186**	**186**	**186**	**1,272**

10.5 Anticipated Outcomes of Investment

The above investment will leverage medium to long term changes in the key outcomes for the economy e.g. the amount of CO_2 emissions we avoid, or the total number of broadband users in the country. These changes will be measured periodically (e.g. in 2013 and 2016) using the indicators listed below. This measurement is done by tracking changes in their

[59] European Commission (2008) *Commission Staff Working Document accompanying Commission Recommendation on Regulated Access to Next Generation Access Networks*

future value against the state of play today (which is referred to as the baseline)[60]. It should be noted that many factors operate to influence these indicators and the proposed investment programme aims to both mitigate any emerging negative trends as well as achieving significant improvements where possible.

Energy

- Percentage of electricity generated from renewable sources
  Baseline in 2010: 14.4%

- Renewable energy contribution to final energy consumption
  Baseline in 2010: 4.7%

- Proportion of renewable energy used in the heating sector
  Baseline in 2010: 3.9%

- Level of avoided energy use through increased energy efficiency.

  Baseline in 2010:

  - Estimated energy savings from existing programmes 3,320 gigawatt hours at end 2010 (including ETS entities)[61]
  - Estimated energy savings from existing programmes 2,420 gigawatt hours at end 2010 (excluding ETS entities)

- CO_2 avoided from use of renewable energy
  Baseline in 2010: 2,830 kilotonnes

- Energy intensity of the economy
  Baseline in 2010: 0.09 kilogrammes of oil equivalent[62]

Information and Communications Technology

- Total number of broadband users
  Baseline in 2010: 1.44 million

- Broadband penetration rate among enterprises
  Baseline in 2010: 84%

- Number of service provider connections to MANS
  Baseline in 2010: 168 (Phase 1) and 68 (Phase 2)

- International connectivity capacity
  Baseline in 2010: 8,000 gigabits per second

- Number of second-level schools with high speed broadband using full 100MB per second capacity
  Baseline in 2010: All 78 second-level schools in pilot project

[60] Baseline figures reflect latest available data
[61] This is a bottom up estimate based on expected savings per programme for the National Energy Efficiency Action Programme – programme savings have been verified to varying degrees and compatible with assumptions as per "Energy Forecasts for Ireland to 2020", 2009 Report. ETS stand for emissions trading scheme.
[62] This is a measure of the amount of energy used to produce €1 of GDP.

11. Office of Public Works

11.1 Overview

Investment in this area will support flood relief and prevention, ensure the protection of our cultural heritage and deliver accommodation of an appropriate standard to public bodies.

Office of Public Works Investment 2010-2016
Almost €1 billion will be invested in the years to 2016 in capital infrastructure under the programmes of the Office of Public Works. The core elements of this are: ▪ €480 million for investment in flood relief schemes ▪ In excess of €400 million for investment in capital works projects to ensure civil and public servants can provide services from modern and fit for purpose facilities and accommodation. ▪ Over €50 million for investment in cultural infrastructure in order to protect national heritage and to ensure the preservation of Ireland's cultural and heritage institutions for local and international visitors.

11.2 Rationale for Investment[63]

Capital spending by the OPW is focussed on providing accommodation for the civil service and the Garda Síochána. Capital spending also comprises developments in cultural infrastructure, including historic buildings and national monuments. The OPW invests significant capital resources on the upkeep and development of a variety of specialist buildings such as museums and laboratories.

The strategic objective of the new works programme is to successfully deliver on the Government's accommodation requirements. One of the most significant areas of expenditure by the OPW over recent years has been the Decentralisation programme.

The OPW also delivers flood mitigation works. Through its flood risk management activities, the OPW aims to minimise the risk of flooding and thereby avoid the very serious social, environmental and economic costs associated with flooding.

The OPW also aims to maximise the potential of cultural institutions and seeks to ensure they are efficiently managed so that current and future visitors can benefit from Ireland's rich cultural heritage. This represents an important contribution to the tourism industry.

[63] Strategic objectives stated in this section are drawn from the NDP Annual Report 2007

11.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand

Very significant investment in the programmes under the aegis of OPW over the past number of years has enhanced the quality and quantity of infrastructure. Table 11.1 below shows spending by programme since 2004.

Table 11.1 Office of Public Works Capital Expenditure by Programme, 2004 - 2009

	2004	*2005*	*2006*	*2007*	*2008*	*2009*
Programme		*€ million*				
Capital works	190	180	177	276	223	144
Flood management	21	20	20	32	27	43
Purchase of sites	1	31	99	38	39	10
Other	4	6	14	10	12	5
Total	**216**	**237**	**310**	**356**	**301**	**202**

11.3.1 Capital Works

Substantial investment in large capital works has taken place in recent years. This includes new accommodation for Garda Stations and various Government Departments including the Department of Social Protection. Significant resources were also invested in laboratories for the Department of Agriculture and Marine Institute and in the State Laboratory.

Proposals for office accommodation will be subject to the existing value for money test used by the OPW which looks at leasing as an alternative to new builds. Refurbishment of existing buildings in certain sectors continues to be justified to prevent costly deterioration and to ensure services can be delivered. Certain Department of Social Protection buildings will also require works to ensure delivery of payments services to claimants. Lower tender prices will allow for implementation of such projects at lower costs than heretofore.

To date, the Decentralisation programme has resulted in the relocation of 3,100 staff to various locations nationwide. The challenge of stabilising the public finances while funding investment which can support economic recovery is substantial. With the exception of the Portlaoise accommodation project for the Department of Agriculture, Fisheries and Food, the current programme is nearly complete. The case for prioritising further investment in decentralisation accommodation must be considered in the context of constrained resource availability and the need to develop infrastructure which can support economic recovery. The Decentralisation process will be reviewed by Government in 2011.

Expenditure on capital works should be carried on at a relatively lower level. However significant further investment in Garda facilities, including a programme of custody suite upgrade to acceptable standards, is required to provide satisfactory modern accommodation for An Garda Síochána, supporting rationalisation of the existing Station network.

11.3.2 Flood Management

A number of flood relief measures were advanced in recent years. These include capital works in Clonmel, Carlow, Fermoy, Leixlip and Dublin. There are important flood relief requirements for other areas however which need immediate attention. There is a critical requirement for works arising from the heavy flooding throughout the country in November 2009. The effects of flooding can be disastrous for families, communities and local economies and ongoing investment in this area will be pivotal in minimising the risk of future flooding events. Into the medium-term, flood relief works should also be capable of delivery at much lower costs due to the deflation in tender prices.

11.3.3 Purchase of Sites

There has been substantial investment in sites to provide for public service accommodation. There should be little further expenditure on site acquisition over the medium-term, given the oversupply of retail office space and the likely reductions in public service numbers employed. However there may be a need to acquire sites for Garda stations in locations where no other option is available.

11.3.4 Other Areas

Other areas of investment have included allocations to the Zoological Society of Ireland, grants provided for certain refurbishment works and disability access projects. Further efficiencies should be possible in these areas.

11.4 Focus of Medium Term Policy

Based on the foregoing analysis this section sets out the Exchequer Capital Programme for the OPW in the years to 2016.

It is necessary to continue the programme of capital works to maintain the existing stock of office accommodation in order to achieve compliance with health and safety standards and to prevent deterioration in buildings. Investment is also required to ensure that public services such as law enforcement and social welfare can be effectively delivered from fit for purpose State buildings. To this end, the Government plans to invest over €400 million in this area from 2010 to 2016.

As discussed above, there is an important ongoing requirement for flood relief works, and recent events in the south and west have underscored the need for urgent action in this area. This investment will aim to guard against the negative social and economic impacts of flooding. The Government will invest around €480 million in this area over the period to 2016.

There is also a justification for investment in certain cultural projects, historic properties and national monuments in order to maximise tourism benefits and protect Ireland's cultural heritage.

Table 11.2 below presents the capital envelope for the years to 2016.

Table 11.2 Office of Public Works Reprioritised Envelope, 2010 – 2016

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Capital works	88	60	56	57	57	57	57	432
Flood management	59	72	71	70	70	70	70	482
Purchase of sites	5	4	4	4	4	4	4	29
Cultural	5	4	9	9	9	9	9	54
Total	**158**	**140**	**140**	**140**	**140**	**140**	**140**	**998**

Office of Public Works Investment – Summary of Findings

Analysis of spending programmes under the aegis of the OPW has given rise to the following broad findings:

- The OPW has a significant capital programme with the majority of investment concentrated in flood management activities and in meeting building and accommodation priorities
- In recent years a number of important flood management projects were completed and progress has been made in meeting office accommodation requirements. In particular, activity has concentrated on the roll-out of the Decentralisation programme
- Lower tender prices, pursuit of leasing solutions where suitable and increased efficiency in the use of the existing asset base will allow for delivery of a very high level of outputs from a more limited level of expenditure. However new leases will have a current expenditure implication.
- A very significant level of resources will be invested in the flood management programme to militate against the risk of flooding and to prevent the related economic, social and health costs which flooding could cause.

12. Tourism, Culture and Sport

12.1 Overview

In the years to 2016, the Government will invest significant resources in capital spending programmes under the aegis of the Department of Tourism, Culture and Sport. Substantial progress has been made in recent years and the new investments will further develop the stock of capital in the Tourism, Culture and Sport sector. The Box below summarises the Government's approach to investment in this sector.

Tourism, Culture and Sport Investment 2010-2016

In excess of €800 million will be spent over the period 2010 to 2016 on capital programmes administered by the Department of Tourism, Culture and Sport. The main elements of the funding are as follows:

- In the region of €370 million will be invested in sports programmes to support community development and to promote health benefits for the general population.
- In excess of €150 million will be invested in cultural programmes to further develop Ireland's national cultural institutions and to preserve Ireland's national cultural heritage.
- In the region of €190 million will be invested in tourism related infrastructure to promote Ireland as a high quality tourism destination and to maximise the economic contribution of the tourism sector.
- More than €100 million will be invested in film and audio-visual content development and production programmes to ensure existing commitments are met, leverage inward investment, build a new skills base and to promote the film and audio-visual content industries in Ireland.

12.2 Rationale for Investment[64]

Many of the areas of investment encompassed here have public good and merit good characteristics. In addition, specific programme level objectives complement the rationale for public investment.

[64] Strategic objectives stated in this section are drawn from the NDP Annual Report 2007

12.2.1 Sports Infrastructure Programme

The high-level objective for this programme is to support the availability of sporting, exercise and recreational facilities; contribute to a healthier nation and increase health awareness; help build stronger communities; and support employment in the sports sector.

12.2.2 Cultural Infrastructure Programme

The strategic objectives of this programme are to develop cultural facilities and infrastructure throughout the country; assist the tourism industry; support universal access to the arts; preserve the National Collections; and help protect and showcase our cultural heritage.

12.2.3 Tourism Infrastructure

The strategic objective of this programme is to achieve further growth and promote regional development in an important sector that attracts foreign revenue and is labour intensive.

12.2.4 Film Sector

The strategic objective of this programme is to support the development of the film and audio-visual content industry in Ireland, creating employment in this area, developing the indigenous industry as an exporter of cultural product and also attracting inward investment from the international film industry.

12.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand

12.3.1 Sport

Substantial investment has been made in sports infrastructure in recent years. Headline projects for which substantial exchequer funding has been made available include the Aviva Stadium (Lansdowne Road), Croke Park and Thomond Park. Significant investments have also been made in the Local Authority Swimming Pools Programme, while a wide variety of projects have been funded at local and regional level under the Sports Capital Programme, enhancing sports facilities for communities throughout the country.

Sport plays an important role in community development and public health and there is an ongoing requirement for capital investment in this area.

12.3.2 Culture

Alongside its intrinsic value, cultural investment also has a significant economic impact in terms of enhancing Ireland's attractiveness as a destination for overseas visitors and as a destination for high value-added foreign investment. In recognition of this, substantial investment has been made in cultural infrastructure in recent years in areas such as the Wexford Opera House; the Abbey, Gaiety, Gate and Druid theatres; the Royal Hibernian

Academy; the Cork Opera House; the Waterford Theatre Royal; Carlow Contemporary Art Galleries; the National Chamber Orchestra; Comhaltas Ceoiltoirí Eireann facilities and the Ark Children's Cultural centre.

The Renewed Programme for Government includes a commitment to undertake a detailed assessment of the GPO complex with a view to locating the Abbey Theatre there. A feasibility group has been established to undertake this assessment. It is expected that it will be autumn before all of the elements of the feasibility study are fully completed. Continued investment in our national cultural institutions such as the National Gallery, the National Museum and the Irish Museum of Modern Art is also essential to growth in our cultural tourism market. As regards the National Concert Hall, the latest position is that the PPP process for this project is currently at evaluation stage.

12.3.3 Tourism

Ireland has witnessed a significant drop in the number of overseas visitors coming to our shores. Recent data shows a fall in the number of trips to Ireland by overseas residents. The number of visits to Ireland in 2009 was 17 percent lower than the corresponding period in 2007.[65] This trend has intensified sharply in the interim, although much of this is attributable to the closure of airspace in 2010 associated with the volcanic eruption in Iceland.[66]

Tourism remains a valuable internationally traded service however and can again deliver significant value added and employment to the economy. Nonetheless, steps must be taken to reinvigorate this sector. While the opening of the National Conference Centre (to be known as Convention Centre Dublin) later this year will provide a major addition to Ireland's tourism infrastructure, further development of the tourism product is required. The Exchequer Capital Programme therefore provides for a high level of investment in this area into the medium-term.

12.3.4 Film

There has been substantial investment in Film and TV production projects over the last number of years through the Irish Film Board, and continued concentration in this area can build on achievements in recent years. The strategy to develop this sector will be finalised later this year, aiming to double the economic contribution of the sector within five years.

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[65] Calculated from CSO (2010) *Tourism and Travel, Quarter 4* 2009

[66] CSO 2010 *Overseas Travel*, April 2010

12.4 Focus of Medium Term Policy

Based on the foregoing analysis this section sets out the medium-term allocation to the Department of Tourism, Culture & Sport.

There is a continuing need to target investment in key sports projects that support health objectives and community development. Capital grants will therefore be provided to sporting and other organisations for the provision of sports and recreational facilities. The level of investment for the Sports sector is set at €370 million over the period 2010-2016.

It is important to develop, upgrade and enhance our tourism product in order to continuously attract visitors (in particular high value tourists) to Ireland. Thus, substantial funding will be provided to invest in tourism product development bringing investment to over €190 million in the period 2010-2016. This will be focussed on completing the upgrading of major tourist attractions, developing a small number of key iconic attractions, improving infrastructure for recreational cycling, walking and water based activities and heritage attractions. Convention Centre Dublin which is opening later this year will give a boost to business and conference tourism in future years.

A range of small-scale tourism projects will be advanced in all parts of the country. As announced in Budget 2010, funding will be provided for the development of the Kennedy homestead in Dunganstown, Co.Wexford[67]. This will be an important visitor attraction and will boost tourism in the South East of the country.

Culture will continue to be an important area of capital investment. Some €155 million will be invested in cultural infrastructure over the period 2010-2016. Capital investment in excess of €100 million will be provided to the Irish Film Board over the period 2010-2016, enabling the board to meet existing commitments and providing for additional investment to develop the Irish Film Industry and to stimulate inward Film investment.

Table 12.1 Department of Tourism, Culture and Sport Reprioritised Envelope, 2010 – 2016

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
					€ million			
Sports	70	52	52	52	48	48	48	370
Culture	23	23	23	23	21	21	21	155
Tourism	22	30	30	30	26	26	26	190
Film	17	15	15	15	15	15	15	107
Total	***132***	***120***	***120***	***120***	***110***	***110***	***110***	***822***

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[67] This project will be funded through the Office of Public Works Vote.

12.5 Anticipated Outcomes of Investment

This investment will further enhance our cultural infrastructure and help increase the economic value of culture and film activities in addition to the intrinsic benefits of these fields. Our sporting facilities will also be upgraded bringing improved public health outcomes and closer community development.

In relation to tourism investment there should be significant benefits. Overseas visitor numbers are expected to stabilise at 2009 levels and return to growth by 2011. From a 2009 base of 6,450,000, projected numbers of overseas visitors (with at least one overnight) are

- 2013: 7,500,000
- 2016: 8,000,000

Visitor levels on this scale will have significant economic benefits in terms of local economy spending. From a 2009 base of €3.1 billion, anticipated overseas earnings are

- 2013: €4.1 billion
- 2016: €4.5 billion

Programmes under the aegis of the Department of Tourism, Culture and Sport will therefore make a strong economic, social and cultural contribution into the medium-term.

Tourism, Culture and Sport – Summary of Findings
Analysis of spending programmes under the aegis of the Department of Tourism, Culture and Sport has given rise to the following broad findings: ▪ D/TC&S has a significant capital programme aimed at delivering on a range of economic, cultural and social objectives. ▪ Substantial investment over the past number of years has upgraded facilities across the range of sectors and a number of headline projects such as the AVIVA stadium, (Lansdowne Road) and Convention Centre Dublin will deliver substantial benefits into the medium-term and beyond. ▪ Tourism is an important internationally traded service and will require a significant programme of investment over the 2010 - 2016 period. This will support the tourism industry in contributing to national economic recovery and can deliver significant employment benefits in the delivery phase of new works. ▪ In excess of €800 million will therefore be invested in the programmes under the aegis of D/TC&S.

13. Justice and Law Reform

13.1 Overview

Over the years to 2016, the Government will invest more than €700 million in capital programmes administered by the Department of Justice and Law Reform. This investment will be aimed at enhancing the stock of capital infrastructure in this important policy area. The box below present the main element of this investment.

Justice and Law Reform Investment 2010-2016

The Government will spend in excess of €700 million in the years to 2016 in capital infrastructure under the programmes of the Department of Justice and Law Reform. The core elements of the investment will be:

- €250 million to fund significant additional detention facilities to ensure the Prison service and Irish Youth Justice Service can effectively manage custodial sentences for juveniles and adults.
- Over €15m will be invested in State Pathology and Forensic Science facilities over the period to ensure that these key support areas to the Criminal Justice system are modernised and fit for purpose.
- Over €100 million will be invested in courthouses to further modernise the network of physical and IT infrastructure facilities.
- Close to €180 million will be invested in key Garda IT and criminal investigation projects, which will enable the Force to maximise its effectiveness in fighting crime.

13.2 Rationale for Investment[68]

13.2.1 Detention facilities

The Prison Service and Irish Youth Justice Service aim to provide safe, secure and humane custody for people who are sent to prison and juvenile detention facilities. To this end, detention facilities are required to accommodate people with custodial sentences. By implementing custodial sentences, investment in detention facilities protects members of the public from theft and injury, both of which have negative economic and social consequences. Associated positive externalities which reinforce the rationale for investment in this area include the impact of detentions on reducing re-offending and deterring crime.

[68] Strategic objectives stated in this section are drawn from the NDP Annual Report 2007

Additionally, the development of adult custodial facilities at Thornton Hall and Kilworth will provide the Prisons Service with the quantity and quality of prison spaces required in a contemporary society.

13.2.2 Courthouses

By supporting the enforcement of the law by the judiciary, the Courts Service through its investment in courthouses is involved in helping to provide a public good.

Such investment in courthouses over the period will be further enhanced by the identification and development of courthouse PPP bundles where appropriate.

13.2.3 Garda IT/administration

The Gardai Siochána delivers a public good as it provides policing services to all citizens. A degree of capital investment is required in the delivery of this goal.

13.2.4 Other capital spending programmes

The main functions of the new PRA are to manage and control the Registry of Deeds and the Land Registry and to promote and extend the registration of ownership of land. The PRA is an Institutional structure which is required to support the registration of real property rights and interests.

State Pathology and Forensic Science facilities need to keep pace with societal and technological changes. The provision of modern fit for purpose Pathology and Forensic Science facilities are key technological and scientific aids in the fight against crime. Included in this is the development of a National DNA database which is increasingly a requirement in the investigation and successful prosecution of criminal activities.

13.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand

13.3.1 Overview

Substantial investment in the programmes under the aegis of D/JLR over the past number of years has improved the quality and quantity of infrastructure. The table below shows spending by programme since 2004.

Table 13.1 Department of Justice, Equality and Law Reform Capital Expenditure by Programme, 2004 - 2009						
	2004	2005	2006	2007	2008	2009
Programme			*€ million*			
Detention centres	37	69	102	46	41	47
Courthouses	25	26	30	35	35	30
Garda IT/admin	15	29	46	42	62	45
Justice IT/admin	25	16	7	6	6	12
Other	2	4	3	4	5	3
Total	**104**	**144**	**187**	**133**	**149**	**138**

13.3.2 Detention facilities

Recent years have seen an improvement in, and expansion of, prison estates including investments at Portlaoise, Wheatfield and Limerick facilities. There is an ongoing requirement for investment in detention facilities however, in order to address shortages in capacity and to refurbish existing facilities. Additionally, the construction of a security wall, site services and a Garda station on the Thornton site and initial site works at the Munster prison in Kilworth are high priorities

13.3.3 Courthouses

Investment by the courts service has resulted in the modernisation of courthouses and the implementation and upgrading of IT systems. New courthouses have also been constructed at Ardee and Blanchardstown. In order to complete the programme of investment in courthouses, further investment is needed for new facilities in regional locations and in order to renovate existing facilities.

13.3.4 Garda IT/administration

The main focus of investment has been the upgrade of Garda ICT and communications over the last five years. The provision of appropriate support facilities underpinning the modernisation of Gardaí operations will require continued investment. This will include projects such as the National Digital Radio Project (NDRP) which will offer Gardaí a new range of services and advantages over the existing, analogue radio system.

13.3.5 Other capital spending programmes

The Property Registration Authority has invested in e-government and mapping/copyright projects. Minor investment projects in the e-government area will be required over the medium term. This will include project such as the digital mapping initiative. Such investment will contribute towards the achievement of PRA objectives and the enhancement of service for customers.

13.4 Focus of Medium Term Policy

Based on the foregoing analysis table 13.2 sets out the Public Capital Programme for spending under D/JLR.

Table 13.2	**Department of Justice and Law Reform Reprioritised Envelope, 2010 – 2016**							
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Detention facilities	34	36	36	36	36	36	36	*250*
Courthouses	41	12	12	12	12	12	12	*113*
Garda IT & admin	28	25	25	25	25	25	25	*178*
Justice IT & Admin	7	6	6	6	6	6	6	*43*
Other Programmes	13	11	11	11	11	11	11	*79*
Total	**123**	**90**	**90**	**90**	**90**	**90**	**90**	***663***

Justice and Law Reform Investment – Summary of Findings

Analysis of spending programmes under the aegis of the Department of Justice and Law Reform has given rise to the following findings

- The core areas for investment include detention facilities, courthouses, Garda IT projects, departmental IT/administration, pathology and forensic science infrastructure.
- Significant progress has been made in advancing the areas supported by these Programmes
- While there has been very significant investment in capital and an improvement in the quality and quantity of infrastructure, there is scope for further improvement in the stock of capital in this sector.
- There are a number of factors driving a continued need for investment in JLR including the need to continue the modernisation of the prison estate, the importance of ensuring that An Garda Síochána is equipped with the necessary IT infrastructure and the necessity of upgrading the network of courthouses nationwide to meet law enforcement requirements. It is also important that resources are allocated to IT projects underway at the PRA and the D/JLR in order to bring these projects to completion.
- There should be enhanced opportunities for achieving value for money in public procurement, and this will allow for delivery of a substantial level of infrastructure investments at lower prices.

14. Community, Equality and Gaeltacht Affairs

14.1 Overview

In the years to 2016 the Government will invest in capital programmes under the aegis of the Department of Community, Equality and Gaeltacht Affairs. This will build on the progress achieved in these spending programmes over the past decade and focus on targeted infrastructure.

Community, Equality and Gaeltacht Affairs Investment, 2010-2016

In excess of €460 million will be invested in the years to 2016 in capital infrastructure under the programmes of the Department of Community, Equality and Gaeltacht Affairs. This investment will primarily support

- rural development with increased funding for EU LEADER projects; and
- community development;

14.2 Rationale for Investment

14.2.1 LEADER

The LEADER programme provides grants (funded by both the Exchequer and the EU) to rurally based groups to implement multi-sectoral business plans to enhance economic diversification and improve 'quality of life' in local areas. It focuses on investment in rural tourism, enterprise, diversification from farming and development of local infrastructure and services important to community development. The Programme concludes in 2013 with expenditure allowable until 2015 under the N + 2 rule.

14.2.2 Údaras na Gaeltachta

Investment under this programme is designed to develop the Gaeltacht economy so as to facilitate the preservation and extension of the use of the Irish language within the Gaeltacht. Investment seeks to further develop the infrastructure required to attract modern enterprises and underpin viable and sustainable Gaeltacht economies.

14.2.3 Clár

Clár is designed to target investment in rural areas of greatest population decline It provides 'leverage funding' for small-scale infrastructure in depopulated areas for which there is not deemed to be a compelling economic justification or business case by funding agencies.

14.2.4 Islands Infrastructure

The aim of this programme is to provide infrastructure to offshore Ireland. Primarily, pier construction, other transport and tourism facilities are prioritised under the programme. Funding is also available for social, health and educational facilities.

14.2.5 RAPID/ Drugs Initiative

RAPID (Revitalising Areas by Planning Investment and Development) provides investment for small scale projects aimed at improving quality of life in areas of high urban poverty and social disadvantage. The Programme seeks to ensure that priority attention is given to the 51 designated areas by focusing State resources available to best effect. The National Drugs Strategy aims to mitigate the effects of drug addiction in society.

14.2.6 Waterways

The strategic objective of this programme is to maintain and restore Ireland's inland waterways, providing recreational access along routes of waterways, thereby hoping to attract overseas visitors and stimulating business and regeneration in these areas.

14.2.7 Other capital spending programmes

A number of smaller programmes complete capital expenditure under the aegis of D/CE&GA namely:

- Western Investment Fund;
- Gaeltacht housing and improvement schemes;
- Rural recreation and Development Schemes;
- EU co-funded PEACE Programme;
- Small Grants for the Community and Voluntary Sector.

14.3 Assessment of Sectoral Capacity and Anticipated Medium-term Demand

14.3.1 LEADER

This programme continues to attract considerable co-funding from the EU and promotes rural economic development and employment. For these reasons, further investment in the programme is warranted for the remainder of its operational timeframe.

14.3.2 Clár

It is imperative that all capital investment yields maximum value for money and has the widest possible impact in terms of expansion of infrastructure. For this reason, there is only marginal justification for continued spending under the Clár programme as resources can be expected to have greater impact if invested through other programmes. For this reason continued high levels of investment are not sustainable or appropriate in the current economic context.

14.3.3 Islands Infrastructure

Since 2008 much of the allocation for this programme was used to develop Cill Rónáin Harbour on Inis Mór. This has provided the island with excellent harbour infrastructure, including separate Ro-Ro and passenger boarding facilities and a major breakwater protecting the harbour.

In future, investment in communications, health and educational facilities for the islands should be the responsibility of the relevant departments, where necessary in consultation with D/CE&GA.

14.3.4 RAPID/ Drugs Initiative

These programmes, in particular the drugs programmes, have the important objective of reducing anti-social behaviour, crime and improving public health outcomes. As well as profoundly affecting quality of life in disadvantaged areas drugs misuse also has significant negative economic impacts. Continued investment in this programme will be required into the medium-term.

14.3.5 Waterways

This programme supports the maintenance and upgrading of existing inland waterways. As these attract tourism and support local employment, it is recommended that a level of investment continues into the medium-term. There is a Government commitment to the restoration of the Ulster Canal. Where possible, Waterways Ireland's own resources will be used in advancing this work. In the absence of readily available exchequer funding, the sale of other assets may be considered where appropriate, subject *inter alia*, to value for money considerations.

14.4 Focus of Medium Term Policy

A number of investment programmes under the aegis of D/CE&GA fund investment which is analogous to mainstream investment programmes in larger Departments. For instance, Clár funds the same type of infrastructure as the Department of Environment, Heritage and Local Government; Údarás na Gaeltachta – amongst other things - provides enterprise supports similarly to other enterprise, agencies, such as Enterprise Ireland and the IDA. In future, any residual or ongoing investment needs should be funded by the Government Department with primary sectoral responsibility, in consultation with D/CE&GA where appropriate.

In order to provide for pressing economic and social priorities in other areas of capital spending there will be a reduction in funding to programmes under the aegis of this Department in the years to 2016. Ongoing investment will largely focus on the EU LEADER programme. Table 14.1 below sets out the total level of investment in the years to 2016.

Table 14.1 Department of Community, Equality & Gaeltacht Affairs Reprioritised Envelope, 2010 – 2016

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
				€ million				
Capital Investment Programmes	**105**	**86**	**86**	**86**	**40**	**30**	**30**	**463**

Department of Community, Equality & Gaeltacht Affairs – Summary of Findings

Analysis of the programmes under the aegis of the Department of Community, Equality and Gaeltacht Affairs has given rise to the following broad findings:

- There has been very significant investment in Community, Rural and Gaeltacht infrastructure over the past number of years, supporting the development of community and rural life and contributing major new infrastructure to the islands.
- In some instances however, the continued investment on the scale pursued to date may not represent the best allocation of resources given affordability constraints and pressures elsewhere.
- Investment will continue in a number of important areas, however there will be a reduction in capital expenditure under the aegis of this Department into the medium-term.
- A number of investment programmes under the aegis of D/CE&GA fund investment which is analogous to mainstream investment programmes in larger Departments. In future, any residual or ongoing investment needs should be funded by the Government Department which has primary sectoral responsibility, in consultation with D/CE&GA where appropriate.

15. Other Exchequer Capital Investment

15.1 Description of investment

Spending through the Departments of Foreign Affairs, Finance[69] Social Protection and Defence completes the capital investment programme. Capital investment in these Departments is mainly for administrative purposes. This includes expenditure on premises, furniture and fittings, office machinery and IT systems. Allocations for programme expenditure in the Department of Defence such as investment in military barracks, buildings and military communications equipment are also included here.

Unlike most Departments whose building costs are met by the Office of Public Works, the Department of Foreign Affairs incurs premises costs, arising from the purchase and maintenance of embassy properties abroad. The Department of Social Protection also had once-off office premises costs of €3 million in 2009 in order to upgrade local offices to meet the increased pressures arising from a significant rise in unemployment.

15.2 Medium-term Funding Allocations

Investment through these programmes will be important over the medium-term. For example ICT systems are critical for the efficient running of the Revenue Commissioners and Social Protection. Other areas of investment are less urgent priorities given the pressures on the public finances. Table 15.1 sets out the medium-term allocations to the relevant Departments.

Table 15.1 Other Exchequer Capital Investment, 2010-2016

Department	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
				€ million				
Defence	16	13	14	14	14	14	14	*99*
Finance	6	5	5	5	5	5	5	*36*
Foreign Affairs	10	4	4	4	4	4	4	*34*
Social Protection	10	7	7	7	6	6	6	*49*
Total	**42**	**29**	**30**	**30**	**29**	**29**	**29**	***218***

[69] Excluding OPW investment, detailed in Section 11.

16. Conclusion – A New Direction in Infrastructure Investment

16.1 The Need to Reappraise Investment Priorities

As set out in Section 2, the environment in which we appraise, plan and deliver infrastructure has undergone significant transformation. These developments can be summarised as follows:

- The challenging fiscal position means that investment on the scale previously envisaged will not be possible;
- Similarly however, the contraction in economic activity means that there will be a lower demand for infrastructure in the economy than previously anticipated;
- The cost of investing in infrastructure has fallen markedly and so a very high level of capital stock can be delivered from a lower level of exchequer investment; and
- The economy is undergoing a structural transition which will have implications for the type of infrastructure required into the medium-term.

These four broad considerations set the parameters in which this Review was conducted. Within this framework, the foregoing analysis has sought to identify the optimum level of investment and the sectors in which this investment will take place in order to:

- Contribute to economic recovery;
- Support employment;
- Deliver important social infrastructure; and
- Develop a low-carbon, Smart Economy.

Accordingly this analysis has given rise to changing priorities in infrastructure policy.

16.2 A New Direction in Infrastructure Investment

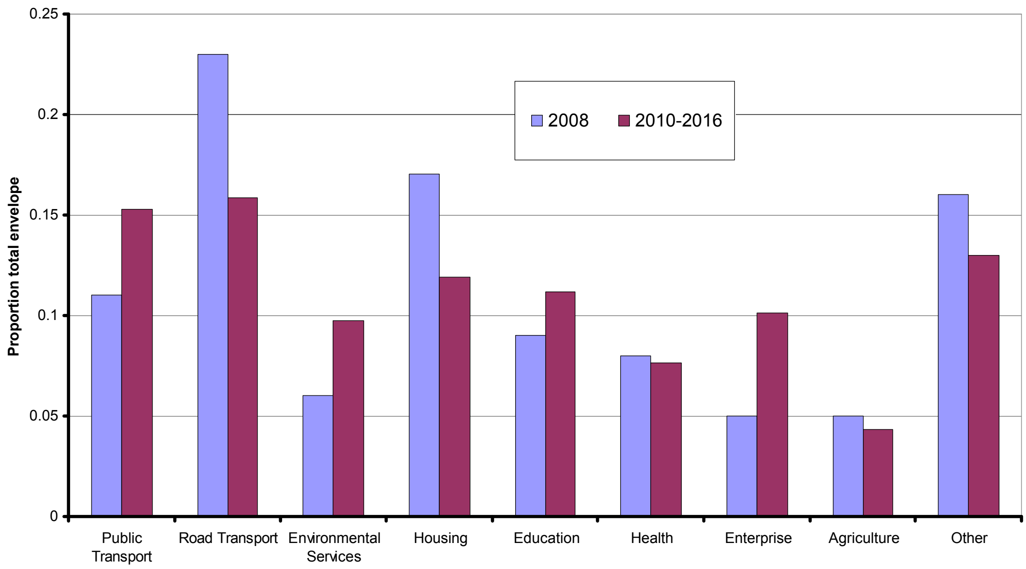
Exchequer capital investment was increased four-fold in the decade to 2008 and grew from 3.4 per cent of GNP in 1997 to 5.6 per cent in 2008. This investment delivered. Across a range of sectors, the infrastructure deficits which previously characterised the Irish economy were substantially addressed. Given the achievements of this investment and the changing structural composition of the economy, a new direction is needed.

The box overleaf identifies the areas where it is considered that the return on scarce public resources can be maximised.

Retuning Capital Investment for Growth
Based on the foregoing analysis, the following areas are prioritised in the Public Capital Programme ▪ *Strategic STI investment at the core of the smart economy* ▪ *The Enterprise Development Agencies* ▪ *Water services investment* ▪ *Key strategic transport infrastructure* ▪ *Primary and secondary school investment* ▪ *Energy efficiency supports* ▪ *Health capital investment* ▪ *Funding to boost the tourism sector* ▪ *Regeneration of Local Authority Housing, including major projects in Limerick and Ballymun*

Significant savings can be realised over the course of the capital envelope owing to lower demand for investment and lower tender prices. The shifting focus of infrastructure investment is illustrated in Figure 16.1, comparing sectoral allocations in 2008 - when capital investment peaked – to medium-term allocations in each area.

Figure 16.1 Changing Infrastructure Investment Priorities



Among the key trends discernable from the new direction in infrastructure policy are:

- A move away from road transport in favour of public transport, reflecting the fact that the motorway network between Dublin and the main regional centres is substantially complete and a high-level policy shift in favour of public transport;

- A very significant increase in the focus on water services investment (included above in 'environmental services') driven by the need to address remaining deficiencies in water infrastructure in key urban areas and the need to meet pressing environmental targets;
- A reduction in the allocation to housing programmes owing to the major changes in that sector; and
- A doubling of the share of total investment delivered through the Enterprise Development Agencies demonstrating the commitment to realising the goals of the Smart Economy and the need to return to sustainable employment creation.

These policy shifts are fully consistent with the Renewed Programme for Government and the goals of the Smart Economy Framework.

The Gateways Innovation Fund will also be re-established with an indicative level of funding of €200 million from 2012. The objective of the Fund will be to stimulate and support innovative and locally co-funded projects that will prioritise Gateway development in line with the NSS.

16.3 Outcomes of the New Direction in Infrastructure Delivery and Short-term Outputs

16.3.1 Key Outcomes

Sections 4-15 of this report detailed the very significant outcomes and broader impacts of this investment anticipated over the medium-term. Among the highlights of the programme of investment are:

- Substantial employment creation through the Enterprise Development Agencies;
- Reduced journey times on our major inter-urban road routes;
- A modal shift towards public transport over the medium-term;
- Significant progress in meeting social housing need;
- Progress in making the final steps to full compliance with water services standards;
- Expansion of our schools and third level capacity to satisfy demographic demands;
- Major enhancements in our innovation infrastructure and further development of the stock of human capital required to make the Smart Economy a reality;
- The achievement of untapped economies and environmental benefits through the National Retrofit Programme;
- Enhancement of our communications infrastructure;
- Improved health sector infrastructure; and
- An enhanced tourism product offering.

16.3.2 Key Projects in the Short-term

These outcomes will be delivered through a multitude of projects across the various sectors. Many of these projects are already underway or will be underway shortly. In the short-term key projects include:

- The completion of motor-way connections between Dublin and the main regional centres;
- The completion and opening of Convention Centre Dublin;
- Progress on the remaining stages of the Ballymun Regeneration and the initiation of Phase 1 of Limerick Regeneration;
- The commencement of Metro North and DART Underground, subject to Government decision;
- The suite of projects nationwide contained in the *Water Services Investment Programme, 2010 – 2012*; and
- A range of small scale tourism projects also on a nationwide basis.

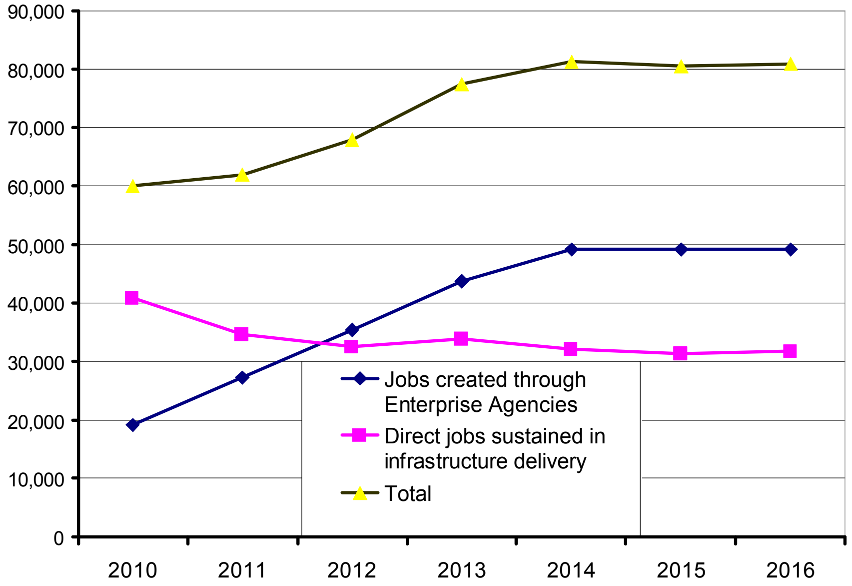
These and many more infrastructure development projects will assist in smoothing the contraction ongoing in the construction industry and assist in maintaining necessary expertise in infrastructure delivery. The establishment of the Innovation Fund will also give a boost to progress towards the Smart Economy.

16.4 Anticipated Employment Impacts

Along with the need to restore the banking system to health and stabilise the public finances, unemployment is the key challenge facing the Irish economy. A core informant of the present review has been the need to re-orient infrastructure policy to assist in unlocking productive capacity in the economy and restoring competitiveness. Through improving the framework conditions in which the enterprise base operates and providing direct support through the Enterprise Development Agencies, capital investment can have its most lasting impact on employment creation. There will also however be valuable ancillary benefits of direct employment in the delivery phase of infrastructure.

Using information provided implementing Departments regarding the employment intensity of infrastructure delivery in different sectors, and estimates of anticipated enterprise sector job creation provided by the Development Agencies, Figure 16.2 shows the potential employment benefits associated with medium-term infrastructure policy.

Figure 16.2 Profile of Employment Created or Sustained through Public Capital Programme



Sources: Implementing Departments and Agencies

Enterprise sector job estimates are based on a level of direct job creation plus additional indirect employment supported through multiplier effects in the local economy. Enterprise Agency analysis anticipates total job creation of 273,000 in the years to 2016 as a result of enterprise investment programmes. While much of this job creation will occur later in this period, there will be significant employment benefits in the short term.

Estimates in relation to direct jobs sustained in the delivery of infrastructure are based on the level of funding across the main sectors in the years to 2016 and estimates of labour intensity in each sector provided by the implementing Departments and Agencies.

As is evident from Figure 16.2, the construction-related employment to be sustained is front-loaded. This will assist in easing the difficult contraction in the construction industry and smooth the transition to more sustainable employment creation in the export-oriented sector of the economy where anticipated employment is back-loaded.

16.5 Conclusion: Infrastructure to Foster Recovery

The net effect of the Infrastructure Investment Programme in the years to 2016 is a refocused set of priorities which can enable economic recovery, deliver much needed social infrastructure and assist in the important transition to a low carbon economy. The focus is on the outcomes that this investment can bring. Taken together, the elements of this new policy focus represent an appropriate and focused configuration of investment to enable a return to enterprise-led growth and sustainable employment creation.

Appendix A Outline of Multi-Criteria Analysis Framework

A.1 Background

A straight forward MCA framework assisted in arriving at the revised capital investment priorities contained in the Capital Review.

Assessing the potential benefit of investment across such a broad range of programmes is not an exact science however, and so this analysis should be considered as an aid to the decision-making process which must be combined with other research and analysis in arriving at proposed Departmental allocations.

A.2 Evaluation criteria and scoring system

There are seven basic evaluation questions which arise directly from the criteria which underpin this Review. The merit of a spending programme is assessed against these criteria in the general form 'high/medium/low'. In some cases the gradings take a binary form, e.g. a programme either is or is not required for EU compliance purposes.

These qualitative assessments are then converted into quantitative values. In some cases a negative mark is recorded if a policy goal is impeded by a particular programme – for instance if a spending programme is likely to give rise to a requirement for significant current expenditure in the future. Tables A.1 and A.2 show the evaluation criteria and the scoring system for each.

Table A.1	Economic Infrastructure Evaluation Criteria and Scoring				
Criteria	**Scoring**				
	2	1	0	-1	-2
Rationale					
Is there an economic justification for investment in this area? (pass/fail)					
Economic return					
Will the investment provide a high economic return in terms of enhancing national productivity and competitiveness?	High	Medium	Low		
Green/Smart Economy					
Does the investment contribute to the development of the Green and/or Smart Economy?	Contributes		Neutral		Detracts
Employment					
Does the investment support employment?	Significantly	Reasonably	Negligibly		
National Spatial Strategy					
Is the investment consistent with the NSS?	Consistent		N/A		Inconsistent
Compliance / environmental requirements					
Is the investment required for legal compliance or meeting environmental targets?	Yes		No		
Future cost implications					
Will the investment necessitate additional future current expenditure?			No	Some	Significant

Table A.2	**Social Infrastructure Evaluation Criteria and Scoring**				
Criteria	**Scoring**				
	2	1	0	-1	-2
Rationale					
Is there an economic justification for investment in this area? (pass/fail)					
Compelling case					
Does the investment deliver high socio-economic return /is there a compelling or unavoidable case ?	Very strong	Strong	Uncertain	Weak	Very weak
National Spatial Strategy					
Is the investment consistent with the NSS?	Consistent		N/A		Inconsistent
Employment					
Does the investment support employment?	Significantly	Reasonably	Negligibly		
Future cost implications					
Will the investment necessitate future current expenditure?			No	Some	Significant

A.2 Other analysis

As noted, the task of prioritising across such diverse investment areas is not an exact science, and so this multi-criteria assessment should be viewed as an aid to decision-making. In order to arrive at recommended allocations it is necessary to consider what will be the medium-term demand for capacity across each sector and what outcomes are required to be delivered over the medium-term.

The types of factors that were considered as part of this analysis include:

- Achievements of investment to date – e.g. capacity of the road network, extent of compliance with EU water directives, number of science PhDs in the workforce etc;
- Factors driving medium-term demand for investment – e.g. demographic pressure on schools; a growing EU environmental compliance burden;
- The type of capital stock required for the smart economy – e.g. faster and more ubiquitous connectivity, higher proportion of doctoral education;

- Changes in the price of procuring capital infrastructure – tender prices are 30 percent lower than at the peak of the market.

From the analysis detailed above, the specific enhancements in capacity required in each priority area were identified and allocations proposed accordingly.

Appendix B Programme Level Allocations

The following tables reproduce the programme level allocations contained in Sections 4 – 15 of this Review

Department of Transport Reprioritised Envelope, 2010 - 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Public Transport	615	540	560	975	1,055	1,005	1,005	*5,755*
Roads	1,414	1,150	920	720	620	570	570	*5,964*
Other Programmes	52	50	70	70	70	70	70	*452*
Total	**2,081**	**1,740**	**1,550**	**1,765**	**1,745**	**1,645**	**1,645**	***12,171***

Department of Environment, Heritage and Local Government Reprioritised Envelope, 2010 - 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	Total
	€ million							
Housing	880	684	690	590	547	547	547	4,485
Water Services	508	491	478	578	471	471	471	3,468
Environment	35	7	8	8	8	8	8	84
Waste Management	4	14	15	15	15	15	15	105
Local Government	35	27	29	29	29	29	29	205
Heritage	30	27	29	29	29	29	29	205
Other / Misc	17	3	1	1	1	1	1	5
Total	**1,509**	**1,253**	**1,250**	**1,250**	**1,100**	**1,100**	**1,100**	**8,562**

Department of Education and Skills Reprioritised Envelope, 2010 – 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Primary	307	272	267	267	267	267	267	*1,914*
Second-level	200	179	174	174	174	174	174	*1,249*
Higher education	132	86	87	77	72	82	117	*653*
ICT (Schools)	43	37	37	37	37	37	37	*265*
Other programmes	24	20	20	20	20	20	20	*144*
Total	**706**	**594**	**585**	**575**	**570**	**580**	**615**	***4,225***

Department of Enterprise, Trade and Innovation Reprioritised Envelope, 2010 - 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
STI Programmes	288	333	354	361	367	365	333	*2,401*
IDA Grants	86	86	86	86	86	86	86	*602*
Enterprise Ireland	78	76	89	92	91	83	80	*589*
Other Programmes	29	28	28	28	28	28	28	*197*
Total	**481**	**523**	**557**	**567**	**572**	**562**	**527**	**3,789**

Department of Health and Children Reprioritised Envelope, 2010 - 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Acute Hospitals	240	231	275	291	262	167	167	1633
PCCC	164	104	60	44	73	168	168	781
ICT	40	40	40	40	40	40	40	280
Childcare	32	10	10	10	10	10	10	92
Other Programmes	15	15	15	15	15	15	15	105
Total	**491**	**400**	**400**	**400**	**400**	**400**	**400**	**2,891**

Department of Agriculture, Fisheries and Food Reprioritised Envelope, 2010 - 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Ag and Food dev	274	198	40	40	40	40	40	*672*
Forestry	104	89	84	84	84	84	84	*613*
Fisheries	18	17	17	17	17	17	17	*120*
Other	34	46	29	29	29	29	29	*225*
Total	**430**	**350**	**170**	**170**	**170**	**170**	**170**	***1,630***

Department Communications, Energy and Natural Resources Reprioritised Envelope, 2010 - 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Energy programmes	100	100	136	136	136	136	136	*880*
ICT	60	60	40	40	40	40	40	*320*
Other programmes	12	10	10	10	10	10	10	*72*
Total	**172**	**170**	**186**	**186**	**186**	**186**	**186**	**1,272**

Office of Public Works Reprioritised Envelope, 2010 – 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
	€ million							
Capital works	88	60	56	57	57	57	57	432
Flood management	59	72	71	70	70	70	70	482
Purchase of sites	5	4	4	4	4	4	4	29
Cultural	5	4	9	9	9	9	9	54
Total	**158**	**140**	**140**	**140**	**140**	**140**	**140**	**998**

Department of Tourism, Culture and Sport Reprioritised Envelope, 2010 – 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
					€ million			
Sports	70	52	52	52	48	48	48	370
Culture	23	23	23	23	21	21	21	155
Tourism	22	30	30	30	26	26	26	190
Film	17	15	15	15	15	15	15	107
Total	***132***	***120***	***120***	***120***	***110***	***110***	***110***	***822***

Department of Justice and Law Reform Reprioritised Envelope, 2010 – 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
				€ million				
Detention facilities	34	36	36	36	36	36	36	*250*
Courthouses	41	12	12	12	12	12	12	*113*
Garda IT & admin	28	25	25	25	25	25	25	*178*
Justice IT & Admin	7	6	6	6	6	6	6	*43*
Other Programmes	13	11	11	11	11	11	11	*79*
Total	**123**	**90**	**90**	**90**	**90**	**90**	**90**	***663***

Department of Community, Equality & Gaeltacht Affairs Reprioritised Envelope, 2010 – 2016								
	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
				€ million				
Capital Investment Programmes	**105**	**86**	**86**	**86**	**40**	**30**	**30**	**463**

Remaining Departments' Capital Envelopes, 2010-2016								
Department	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*Total*
				€ million				
Defence	16	13	14	14	14	14	14	*99*
Finance	6	5	5	5	5	5	5	*36*
Foreign Affairs	10	4	4	4	4	4	4	*34*
Social Protection	10	7	7	7	6	6	6	*49*
Total	**42**	**29**	**30**	**30**	**29**	**29**	**29**	***218***