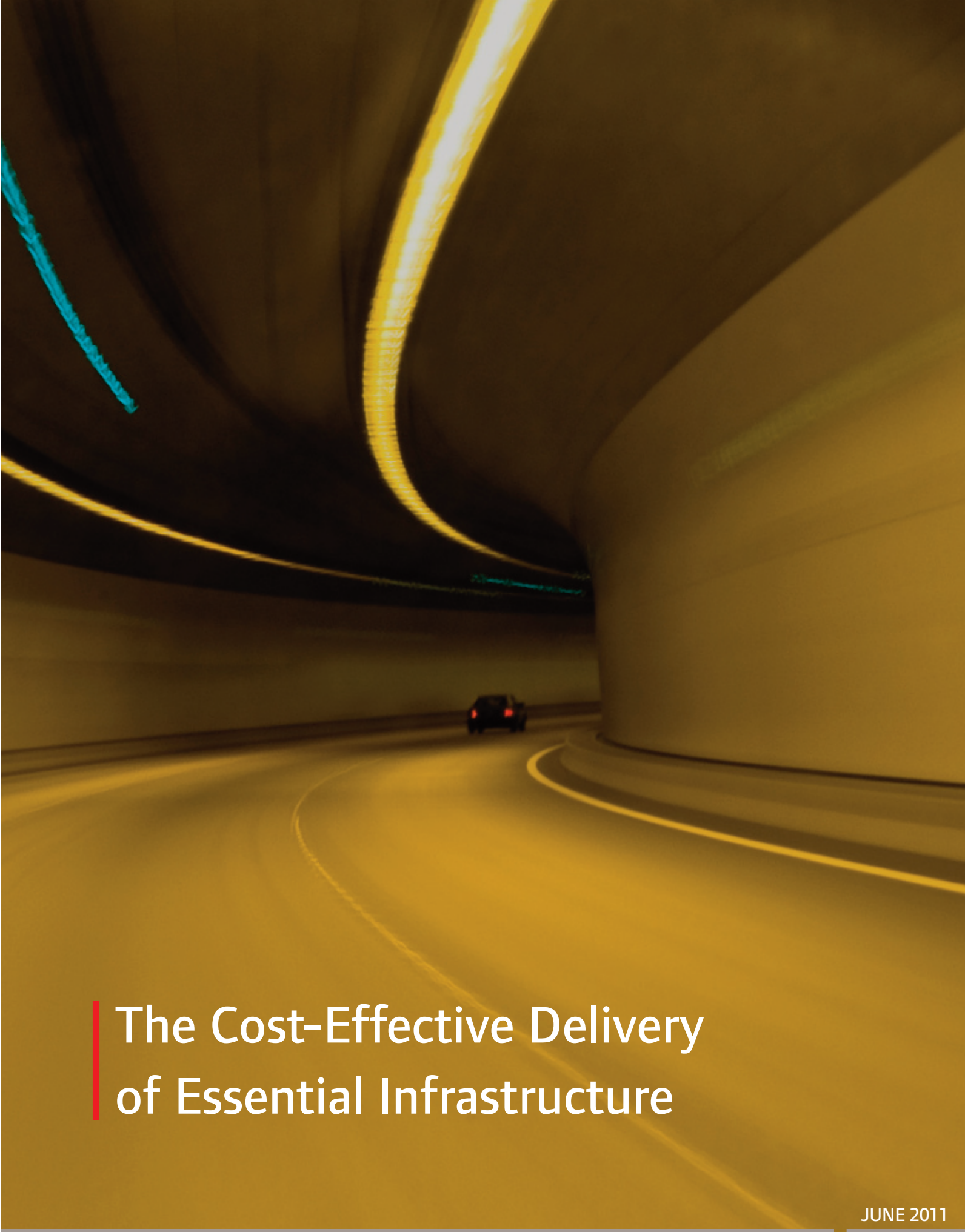

The Cost-Effective Delivery of Essential Infrastructure

JUNE 2011

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1 INTRODUCTION

This report is framed within the context of the current serious economic and social environment on the island of Ireland. It has been prepared by a Taskforce organised by the Irish Academy of Engineering ("the Academy") drawn from the engineering profession on the island of Ireland.

The report follows on from the earlier joint report by the Academy and Engineers Ireland on "Infrastructure for an island population of 8 million people" commissioned by InterTradeIreland and published in February 2010. The focus of the report is on the cost-effective delivery of strategic infrastructure and linear developments. It was finalised in Spring 2011.

Ireland and Northern Ireland are facing two serious problems concerning investment in infrastructure:

- Governments are severely constrained in their ability to invest in infrastructure because of the lack of available capital; and,
- Despite the major investment over the last decade, there is a requirement for sustained investment in critical infrastructure to permit essential economic growth. It is fully recognised at home and abroad by those contemplating investments in business, that the quality of infrastructure is a key determinant in achieving and maintaining competitiveness.

There are extreme pressures on the public finances in Ireland and Northern Ireland. In the context of these exceptional circumstances, much can be done to reduce the cost of effective delivery of essential infrastructure:

- It is clear that non-construction costs of projects, if managed more efficiently and to best practice standards, could significantly reduce the cost of essential infrastructural development. These costs have been reported to be in the order of 35% of construction costs.
- Specific factors which present barriers to development and impact negatively on the cost of major infrastructure projects across the island of Ireland include the cost of land, the planning process and legislation, procurement procedures and institutional arrangements for infrastructure projects. The report makes recommendations in all of these areas.
- Training and skills in the construction industry and private participation in funding and financing can also positively impact on the efficiency of infrastructure development, and recommendations in these areas are included.
- Finally, opportunities for synergies between Ireland and Northern Ireland are examined and recommendations made in relation to cross-border organisations and co-operation, as well as affordable multi-annual budgeting.

The Programme for Government 2011 in Ireland has proposed the preparation of a new National Development Programme 2012-2019.

The UK Government completed its Infrastructure UK National Infrastructure Plan 2010 in October 2010; its Cost Review in December 2010; and its Infrastructure Cost Review: Implementation Plan in March 2011. The Plan sets out a prioritised programme of activities to be overseen by a cross-Government Joint Programme Management Board, while a Charter will issue by the end of May 2011 dealing with priorities and reforms. The recommendations in this report are a contribution to the formulation of such plans and programmes for more cost-effective delivery of essential infrastructure. This is one of the essential prerequisites for the development of a high employment economy and the preservation of national economic competitiveness.

This report contains three sections:

Part 1: Island of Ireland

Part 1 contains an exploration of synergies which might be achieved as a result of co-operation between Ireland and Northern Ireland and a comparison of infrastructural costs between Ireland/Northern Ireland and the rest of Europe.

Part 2: Ireland

Part 2 examines the range of issues impacting on infrastructure development in Ireland and makes recommendations in relation to the cost of land, the planning process, procurement and financing. It also makes a specific recommendation in relation to the establishment of a National Infrastructure Authority.

Part 3: Northern Ireland

Part 3 examines a similar range of issues to Part 2, but with a focus on the Northern Ireland context. It makes recommendations in relation to the cost of land, the planning process, procurement and financing.

2 EXECUTIVE SUMMARY

There are extreme pressures on the public finances in Ireland and Northern Ireland at present, with all significant public expenditure being rigorously assessed and prioritised. Balanced against this, however, is the importance of ensuring ongoing investment in major infrastructure so as to ensure the competitiveness of the island for the future.

While the cost of construction on the island has reduced, largely as a result of tighter margins, a number of other factors[1] contribute disproportionately to the overall cost of infrastructural development. There is an urgent need for these to be addressed.

Addressing inefficiencies and deficiencies related to the cost of land, the planning process and legislation, procurement procedures and institutional arrangements for infrastructure projects is essential in securing the island's competitiveness vis à vis other EU countries. This report makes recommendations in each of these areas and outlines proposals to bring infrastructural development on the island to best European practice.

This report also examines existing skills in the construction sector and current methods of funding and financing major infrastructural projects, making recommendations in both areas. Finally, it looks at cost comparisons of Ireland and Northern Ireland with the rest of Europe and explores synergies across the two jurisdictions which could enhance the island's ability to attract investment and support future economic development.

A summary of the main findings is outlined below.

International Cost Comparisons

International infrastructure cost comparisons for Ireland and Northern Ireland have been examined based on Eurostat and other international surveys. These show recent improvements in cost relativities, undoubtedly due to the current economic cycle, with Irish prices below the EU's 27 countries' average in 13th place. However, the absence of measures to address structural issues affecting costs and competitiveness means this recession-driven reduction will not be sustained.

Cross-border Synergies

Opportunities are identified where savings can be achieved in addressing infrastructure deficits and utilisations, through cross-border synergy in fields such as the single electricity market, transport, environmental services and the avoidance of duplication of services.

The existence of infrastructure deficits, both real and internationally perceived, in both parts of the island has been researched. The IMD World Competitiveness Year Book 2010, for example, ranks Ireland in 31st place. The Institution of Civil Engineers 2010 State of the Nation Infrastructure Report generally graded Northern Ireland as ranking C ("requires attention"). The adverse effects of 'boom-bust' economic cycles on the cost of infrastructure delivery are noted in both jurisdictions. In dealing with the choice of output options the necessity to evaluate whole life costs is emphasised, together with the proper economic prioritising of projects, increased involvement of the private sector and improved competitiveness required to achieve better value for money.

Cost of Building Land

The high cost of building land as a major component of the cost of infrastructure provision is highlighted. Political direction and the necessity for a code of practice in this area are called for to ensure an appropriate balance is struck between the rights of private property owners and the common good. The

1 *For example, the non-construction costs for the Inter-urban Motorway Programme were 25% of the overall project costs (€8 billion, including VAT) of the Programme. Source: F Barry, CEO, NRA – Engineers Ireland Roads & Transportation Society, May 2010.*

possibility of capturing land value for the common good is commended for consideration. Significantly higher land acquisition costs in Ireland (circa €187,000 per hectare) for motorways versus EU norms are instanced.

Public Procurement

The report calls for the introduction of international best practice, to improve public procurement and the establishment of nationally accredited procurement centres of excellence. More innovative and flexible approaches are encouraged for public procurement processes, contract models, early contractor involvement, early planning and scheduling for the establishment of national priorities and transparent risk transfers.

A number of key infrastructure projects in Ireland have, in recent years, encountered major delays in obtaining planning approvals and consents to proceed. In this context a review of the requirements for an effective approval process has been undertaken. This leads to a call for a single permitting authority at national level in line with the recommendation in the European Commission's discussion paper relating to Energy 2020. This Authority would be charged with co-ordinating the main consents required to commence construction. Further comments are included on the need for an appropriate balance in public consultations by means of national guidelines or a code of practice for all stakeholders, levels of designs required and public notices.

The proposed reforms of the planning process for the UK are explained, as they are anticipated to be applied in Northern Ireland. The main change will be the transfer of planning approval decision making to the elected members of the local authorities by 2015.

The necessity for spatial plans, community plans, development control, community involvement and the deferral of a third party appeals process until completion of the transfer of functions to the local authority, are briefly described. A comparative study of the systems North and South of the border, with a view to their possible alignment for cross-border projects, is recommended

Institutional Arrangements

Institutional arrangements for the development of nationally strategic infrastructure and linear development in Ireland are deemed to require a national co-ordinated focus, rather than the multiplicity of agencies currently charged with their delivery. This report calls for the establishment of a National Infrastructure Authority (NIA) charged specifically with the delivery of strategic infrastructure and linear developments. It is recommended that the NIA initially subsumes the National Roads Authority, the Railway Procurement Agency and the procurement of large-scale strategic projects on behalf of the proposed Irish Water body. A lean organisation, with a high degree of outsourcing for programme delivery, is proposed. Potential functions for the NIA are listed in **Appendix 2**.

In Northern Ireland the Strategic Investment Board Ltd (SIB) was established in 2003 and provides for co-ordination across government departments in the delivery of infrastructure. It also provides for the communication of central government plans to a wide variety of stakeholders. Examples of the information available through its website are shown in **Appendix 3**.

Construction Skills and Training

The wide swings in construction activity levels and the necessity to retain capabilities and investment in training and skills are major concerns for the construction industry. Improved skills and training levels are necessary prerequisites for an industry upon which the competitive delivery of infrastructure relies. Investment by Government and the industry itself is called for to secure the competencies, skills and training required for the industry's future well being.

Funding and Financing

In the current recession it is recognised that a much broader menu of funding and financing mechanisms must be deployed. To achieve infrastructure quality comparable with the best in the developed OECD countries, Ireland and Northern Ireland will require continued heavy investment in public infrastructure over the next 20 years. This will require a combination of public and private funding. It is noted that in the UK it is anticipated that 65% of infrastructure will come from the private sector in 2014, 6% from public private partnerships (PPPs) and the balance of 29% from public funds over the next decade or longer. This report proposes that a target is set of half of new infrastructure investment to be sourced from funding by the private sector. Implicit therein will be the introduction of user charging for water, waste, roads and other utilities. Investment by insurance companies

and pension funds must be encouraged and facilitated. Where monopolies may arise, a regulator to protect the public interest is recommended.

Key Recommendations

Arising from the foregoing the report's key recommendations are as follows:

Island of Ireland

1. Eliminate infrastructure deficit by investing in public infrastructure through complementary funding by the public and private sectors (**Sections 11 and 18**)
2. Establish a Joint Infrastructure Advisory Board to co-ordinate cross-border planning, share expertise and promote common practices in areas of procurement and planning. The Board should comprise representatives of the National Infrastructure Authority and the Strategic Investment Board, NI (**Section 4**).
3. Investigate the possibility of establishing an Island Infrastructure Bank to invest in projects having an island dimension. This could be similar to the Nordic Bank between the Governments of Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden (**Section 4**).
4. Develop multi-annual medium-term cross-border infrastructure investment programmes (**Section 4**).
5. Monitor the costs of infrastructure delivery and approaches to procurement in both parts of the island annually and benchmark against international performance to ensure continuous improvement in competitiveness (**Section 4**).
6. Conduct a study of evolving planning systems for cross-border projects with a view to alignment (**Section 4**).
7. Promote the more efficient use of infrastructure in border regions for mutual benefit (**Section 4**).

Ireland

1. To achieve infrastructure quality comparable with the best in the developed OECD countries it is of critical importance that Ireland continues to invest annually over the next 20 years, through a combination of private and public funding **(Section 11**).
2. Establish a National Infrastructure Authority for the delivery of significant linear and strategic infrastructure projects (**Section 9**).
3. Reduce Infrastructure costs to the lower quartile in the Eurozone through improvements in procurement and in efficiency of delivery (**Section 3**)
4. Plan and schedule public procurement within the context of clearly agreed and published national strategic plans and associated multi-annual budgets (**Section 7**)
5. Develop and accredit public procurement centres of excellence as a core function of any centralised infrastructure promotion body **(Section 7**).
6. A single authority should be responsible for granting approval to commence construction of strategic infrastructure (**Section 8**).

Northern Ireland

1. Eliminate stop/start programming of infrastructure; place greater emphasis on the multi-annual long-term plans by the SIB, Northern Ireland with complementary funding by public and private sectors (**Section 17**).
2. Encourage contractors to develop their own in-house trade expertise for the development of training and apprenticeships (**Section 17**).
3. Rigorously streamline the planning approval system and minimise the time required for the process (**Section 15**).
4. Complement public funding on infrastructure with an equivalent amount of private funding using a suitable combination of the funding and financing mechanisms (**Section 18**).
5. A value engineering process to ensure buildability of design and appropriate specification should be encouraged (**Section 14**).

PART 1: ISLAND OF IRELAND

3 INTERNATIONAL INFRASTRUCTURE COST COMPARISONS (IRELAND AND NORTHERN IRELAND)

3.1 Ireland

Eurostat compares the price of civil engineering works (excluding land) in each member state of the European Union on an annual basis. The results of the 2007 survey at the height of the boom showed Irish prices to be the 10th highest in the EU. While they were 75% of those in the UK they were 20% higher than in Germany.

A comparable survey carried out in 2009 in the depth of the recession showed Irish prices had dropped to 13th place and were below the EU average. They were 74% of those in the UK, and had improved to 13% below German levels. **Table 1** shows a comparison of construction industry prices for civil engineering works in Ireland and its main EU competing countries in 2007 and 2009.

A comparison of relative costs of road building in the EU of road costs per km shows a similar picture with Irish costs broadly in line with Germany, France and Scandinavia and about 30% lower than in the UK[2] (**Figure 1**).

Table 1: Comparison of civil engineering construction industry prices in EU 27 countries.

	2007	2009
Sweden	189	155
France	115	129
United Kingdom	163	126
Netherlands	130	121
Germany	103	107
Italy	79	105
Ireland	122	93
Poland	125	87
Spain	90	87
Portugal	85	59

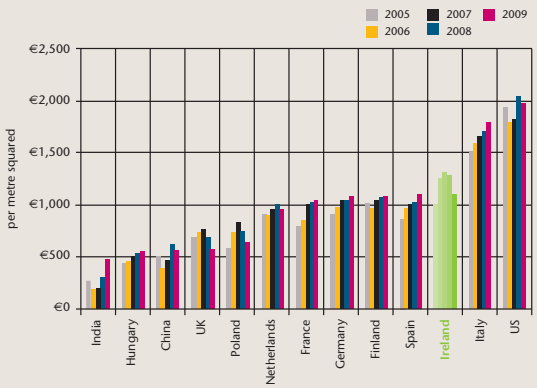
Ref: Eurostat 114/2008; 64/2010 Statistics in Focus

Figure 1: Relative cost of road building in the EU.

Source: Infrastructure Journal Online, online analysis, September 2010

2 *Infrastructure UK. Infrastructure Cost Review, Technical Report, December 2010 (Source: Infrastructure Journal Online, September 2010).*

Figure 2: Cost of constructing a prime industrial unit 2005-2009.



Source: Gardner and Theobald, International Construction Costs 2006-2010

Figure 3: Bruce Shaw tender price and cost indices.

	01	02	03	04	05	06	07	08	09	10
Tender %	6	-2	-4	4	4	3	0	-12	-17	**-5**
Cost %	9	3	3	2	3	3	3	3	-2	**-3**

Source: Bruce Shaw Partnership

The cost of constructing a prime industrial unit in Ireland remained the third highest but broadly in line with Germany, France, Finland and Spain in a benchmarked group of 13 developed countries in 2009. It declined by 14% between 2008 and 2009 (**Figure 2**).[3]

Despite this improvement in the cost of infrastructure, however, The Bruce Shaw Tender Price Index[4] provides a deeper understanding of the change. While the average construction tender price in Ireland in 2009 fell to its lowest level for more than a decade, construction input costs fell only modestly. This indicates a substantial reduction on profit margins (**Figure 3**).

The extent of the improvement in price competitiveness between 2007 and 2009 is, therefore, likely to be temporary. While prices in 2007 were likely to have been inflated due to an overheated economy compared to other European countries, the scale of the relative price fall during one of the deepest recessions in the EU may reflect unsustainable cost cutting.

In view of the exceptionally high rate of unemployment it is critically important to act on the current, possibly transient, competitive advantage by taking additional actions such as streamlining systems and processes and making them more efficient. Analyses in later sections of this report clearly indicate that we have similar problems to the UK where it is stated that "higher costs for UK infrastructure are mainly generated in the early project formulation and preconstruction phases".[5] Lower costs in Ireland must be achieved by improving the efficiency of the procurement, planning and institutional arrangements.

3.2 Comparisons between Ireland and Northern Ireland

As outlined above, the Eurostat civil engineering price comparisons show that prices in Ireland in 2009 were 93% of the EU average and 74% of those in the UK (**Table 2**).

The UK prices conceal regional variations. An indication of costs in Northern Ireland is shown in the EC Harris Construction News Contractor Input Costs for the construction industry, which shows Northern Ireland costs at 76% of UK average costs (**Table 3**).

The comparison, therefore, between civil engineering prices in Ireland and the UK in 2009 showing Ireland at 74% and Northern Ireland contractor input costs at 76% of UK costs in December 2010 suggests that costs are broadly similar in both parts of the island.

3 *National Competitiveness Council, 2010, Cost of Doing Business in Ireland 2010, Volume 1, Forfás.*

4 *Bruce Shaw Handbook 2010.*

5 *Infrastructure UK Cost Review, December 2010.*

Table 2: Percentage of EU average construction prices 2009 – Ireland versus EU and UK.
Ref: Eurostat 114/2008; 64/2010.

Percentage of EU average construction Prices 2009	%
UK % EU	126
Ireland % EU	93
Ireland % UK	74

Table 3: Comparison of contractor input costs for the construction industry in UK, December 2010.
Ref: EC Harris Construction News.

EC Harris Construction News Contractor Input Costs – UK December 2010	UK Av = 100
London	114
South East	108
East Anglia	104
Yorks and Humber	103
South West	101
Northern	100
Midlands	99
North West	99
Scotland	98
Wales	98
Northern Ireland	76

3.3 Recommendations

- Infrastructure costs should be reduced to the lower quartile in the Eurozone through improvements in procurement and in efficiency of delivery.
- The current transient cost advantage should be acted on by taking additional actions, such as streamlining systems and processes so that lower costs in Ireland are achieved and maintained.
- The price competitiveness of construction in both parts of the island should be monitored annually with the aim of continuous improvement

4 COST REDUCTION THROUGH SYNERGY BETWEEN PROJECTS IN IRELAND AND NORTHERN IRELAND

4.1 Background

Infrastructural deficits across the island of Ireland are identified in this report. Some of these are common in both jurisdictions. Co-operation between the different authorities and bodies could lead to cost reduction as a result of the synergies created.

There is significant experience of North/South co-operation in planning, assessment of need and actual delivery of infrastructure on the island of Ireland. Examples include the Single Electricity Market infrastructure; road and rail investments on routes connecting Dublin and Belfast and Dublin and Derry; joint investment by the two governments in the City of Derry airport; and joint implementation of the EU Water Framework Directive on shared river basin districts.

The scope of joint planning/commissioning/funding of projects as well as the possibilities for joint ownership and management of infrastructural projects should be examined. **Section 9** proposes the establishment of a National Infrastructure Authority in Ireland. Once established, formal analysis should be conducted by this Authority and the Strategic Investment Board in Northern Ireland to determine savings which might be effected as a result of cross-border synergies.

This collaboration is similar to that involved in the Trans-European Networks (TENs) which has emerged as a tool of EU Cohesion Policy since the 1980s. The cross-border co-operation behind TENs has had at its core the strategy to open markets and drive economic growth and social well-being through improved infrastructure (transport, energy or telecommunications). On the island of Ireland co-operation has the additional aims of creating synergies and efficiencies in delivery for the mutual benefit of Ireland and Northern Ireland.

The creation of future North/South infrastructure synergies will occur against a background where the two governments have agreed a framework for collaboration on spatial planning. This foresees two levels of engagement at a central and local government level. The latter will be focused on the border region itself.[6] This collaborative approach to spatial planning will also help to ensure that the greatest value and mutual benefit is extracted from investment in shared infrastructure.

4.2 Potential Areas of Co-operation

This report identifies a number of areas where infrastructural deficits exist. Based on these deficits, the following areas of co-operation are recommended:

Island of Ireland

1. Establish a Joint Infrastructure Advisory Board to co-ordinate cross-border planning, share expertise and promote common practice in areas of procurement and planning. This Board should comprise representatives of the National Infrastructure Authority and the Strategic Investment Board, NI.
2. Investigate the possibility of establishing an Island Infrastructure Bank to invest in projects having an island dimension. This could be similar to the Nordic Bank between the Governments of Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden.
3. Incorporate complementary funding by the public and private sectors in infrastructure projects.
4. Develop multi-annual medium-term cross-border infrastructure investment programmes.
5. Monitor the costs of infrastructure delivery and approaches to procurement in both parts of the island annually and benchmark against international performance to ensure a continuous improvement in competitiveness.

6 *DRDNI and DECLG, Spatial Strategies on the Island of Ireland: Framework for Collaboration (Consultation paper, February 2011).*

6. Conduct a study of evolving planning systems for cross-border projects with a view to alignment.
7. Promote the most efficient use of infrastructure in border regions for mutual benefit.

4.3 Specific Co-operation Areas

The following are examples which might be examined for better value for money opportunities, many of which have been outlined in the 'Infrastructure for an Island Population of 8 Million' report, published by the Academy in 2010:

Transport

- Improvements to frequency and speed of service on the Dublin Belfast rail corridor.
- Development of integrated all-island transport provision: road, rail, air, and ports.
- Completion of the motorway/dual carriageway links between the eight main city regions on the island (for example the Cork/Galway/Waterford corridor).
- Expansion of Dublin Airport as a major international hub and development of complementary links with Belfast International.

Environment

- Development of a shared water supply network supplying city regions as the most economic option to mitigate supply shortages.
- Provision of linking water supply mains where possible rather than the construction of a new treatment plant.
- River basin management.
- Development of waste water treatment plants and sewer renewal in border regions in line with EU requirements
- Waste disposal and waste to energy plants in border regions.

Climate Change

- Protection of cities and towns in coastal areas and river basins against flooding and rising sea levels.
- Protection of vital infrastructure from flooding.

Energy

- Enhancement of the electricity transmission grid and interconnection compared with cost of new power generation capacity.
- Gas storage for security of supply on the island.
- Provision of oil distillate at power stations to improve security.
- Upgrading of electricity transmission system (to include interconnectors when/where economically justified).
- Optimisation of economies of development of wind farms.

ICT

- Development and integration of broadband infrastructure.
- Implementation of fibre to home technology to facilitate access to high capacity broadband network.
- Construction of international information highway connections.

4.4 Future Co-operation and Synergies

In terms of cross-border synergies the optimum benefits will be achieved for Ireland and Northern Ireland through a combination of the following:

1. Shared services or further work to avoid duplication of services;
2. Shared infrastructure or the joint planning/commissioning/funding of projects; and,
3. Consortia building and joint contracting.

4.4.1 Shared Services or Further Work to Avoid Duplication of Services

The greatest potential for synergy applies to the avoidance of duplication of facilities in border areas where a single facility could serve the needs of people on each side of the border. A further potential lies in linking existing facilities where there is excess service capacity on one side and inadequate service capacity on the other.

This type of co-operation, which is particularly relevant to the border region, has a long track record where local communities have shared infrastructure (including hospital services) on the basis of a memorandum of understanding between public bodies. A good example of this type of co-operation is Co-operation and Working Together (CAWT), a co-operative cross-border organisation arising from local health authorities and supported by EU funding. Since the

1990s it has been delivering projects in health provision and allowing cross-border access to specialist services such as renal, dental or mental health care.

A further example and a key one for infrastructure relates to water services. Dealing with the EU Water Framework Directive has produced the need for a strategic approach to be taken by the two governments. The 'N/S Share' project, funded under INTERREG IIIA, has become the vehicle for this shared service. Donegal County Council, in co-operation with the University of Ulster and other private sector partners, took the lead and has developed catchment management schemes for the three cross-border river basin districts – the North Western, the North Eastern and the Neagh/Bann.[7]

4.4.2 Shared Infrastructure or the Joint Planning/Commissioning/ Funding of Projects

The lessons of existing cross-border co-operation can be rolled out into the delivery of other infrastructure projects listed above. The Newry/Dundalk A1/M1 road project is an ideal example of this co-operation and offers lessons on financing, timelines and operation for the commissioning of future infrastructure in areas such as transport and energy. A second example of this sharing of infrastructure is the joint ownership/management of either the Dublin/Belfast Enterprise rail service or the electricity interconnectors.

4.4.3 Consortia Building and Joint Contracting

Co-operation on the ground has increased competitiveness in both infrastructure markets, thus putting downward pressures on costs. However, more could be achieved, particularly for smaller firms and specialised niche areas of construction services, including the creation of cross-border networks and consortia of companies.

7 *For more details on this see Tony McNally, 'Overview of the EU Water Framework Directive and its implementation in Ireland', Proceedings of the Royal Irish Academy, Series B, 109/3 (2009).*

PART 2: IRELAND

5 BACKGROUND

5.1 Infrastructure Deficit

Ireland has a substantial infrastructure deficit. This deficit has been commented on in a range of economic reports and competitiveness reviews. It provides the context against which it is critically urgent that action is taken in order to address competitiveness with other countries.

The quality of infrastructure in Ireland is perceived as being considerably lower than the OECD average and particularly below that in our main markets in the US, Germany and the UK[8] **(Figure 4)**.

Infrastructure is considered to include transport, environment, energy and information technology which are essential prerequisites for a competitive economy. An outline of key elements of infrastructure required for an island economy of eight million people was given in a recent Academy report.

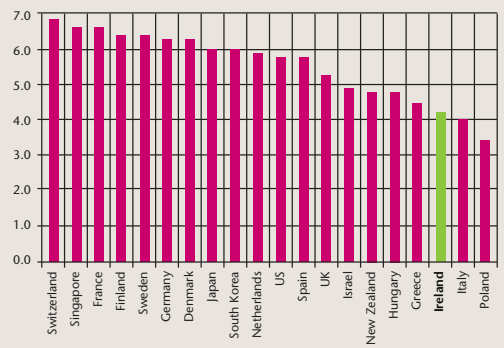
Data from the IMD (World Competitiveness Yearbook, 2010) on the perception of distribution infrastructure shows a significant improvement between 2005 and 2010, but Ireland continues to lag behind competitor countries. (Note: IMD ranking in 2010 for Ireland – 31st.)

Ranking	2005	2006	2007	2008	2009	2010
Ireland	4.48	4.93	4.90	5.96	6.75	7.24

(Scale: 1-10)

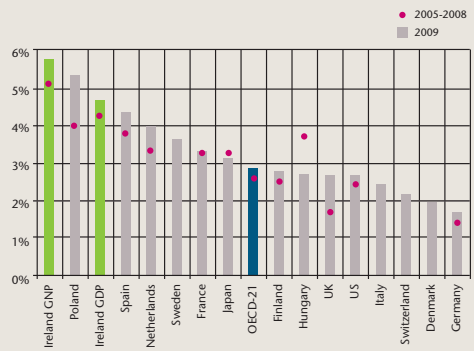
The task of bridging the infrastructure gap with competing countries is daunting. EU15 member states spent 3% of GDP on General Government Gross Fixed Capital Formation in 2009. The National Recovery Plan 2011-2014 agreed with the EU/ECB/IMF plans to allocate 3.5% of GNP in 2011,

Figure 4: Perceptions of overall infrastructure quality.



Ref: WEF, The Global Competitiveness Report 2010-2011, 2010.

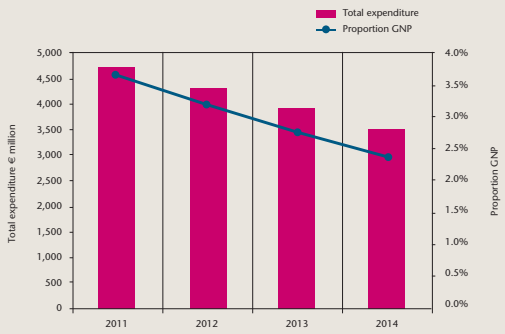
Figure 5: General Government gross fixed capital formation as % of GDP.



Ref: Department of Finance Stability Programme Update, December 2009.

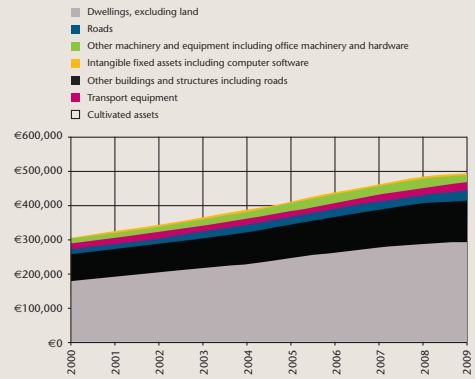
8 *WEF, The Global Competitiveness Report 2010 – 2011, 2010*

Figure 6: Revised Capital Allocations 2011 – 2014.



Ref: The National Recovery Plan 2010-2014 (Nov. 2010).

Figure 7: Net capital stock at year end 2000 – 2009.



Ref: Source NCC.

falling to 2.3% in 2014 (**Figures 5** and **6**). Current and projected allocations of public expenditure alone are unlikely to enable any closing of the infrastructure gap over the four years of the plan.

Ireland ranks above the OECD-25[9] average in terms of both GDP and GNP on this indicator. Capital investment by the State in 2009 amounts to 5.8% of GNP and 4.7% of GDP compared to the OECD-25 average of 2.9%. In cash terms, investment by the Irish Government amounted to €7.2 billion in 2009 compared to €8.2 billion in 2008. This is set to fall to €6.45 billion in 2010 and €5.5 billion for the years 2011-2013.[10]

5.2 International Competitiveness of Infrastructure

The International Institute of Management Development (IMD) World Competitiveness Infrastructure Report ranked Ireland's basic infrastructure in 19th place of 24 EU member states surveyed in 2010.

A survey of executive opinions in Ireland conducted for the World Economic Forum Global Competitiveness report indicated that the inadequate supply of infrastructure was perceived as one of the main obstacles to doing business in Ireland. The primary concerns related to the quality of transport such as roads, railways, ports and air transport.

The Institution of Civil Engineers has prepared a State of the Nation infrastructure report on the UK economy, which includes a commentary on the state of infrastructure in Northern Ireland. Engineers Ireland is currently conducting a similar report in Ireland.

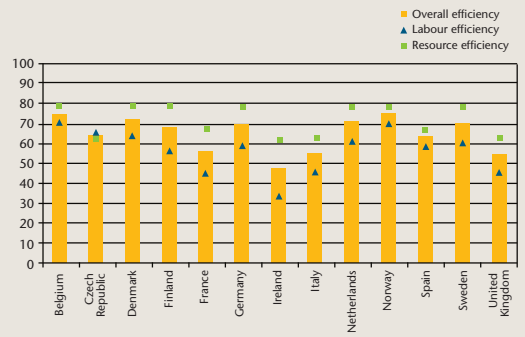
5.3 Impact of Boom-Bust Economic Cycles

The cost of infrastructure provision in Ireland has been heavily influenced by the degree of overheating or recession in the economy. Costs move more out of line with competitors during periods of rapid growth, particularly when accompanied by pro-cyclical budgetary policies. This trend may be corrected during periods of declining output and demand when funding is not available to finance countercyclical measures and to stabilise output. For example, during the boom period of 2006/2007 costs of commercial property increased by up to 20% per annum leading to an average fall of similar magnitude in 2008/2009.

It is critical for sustainable growth that measures are put in place now that will ensure stability in costs; that investment projects yield a positive return on investment; and that the international competitiveness of infrastructure projects is achieved. International comparisons must take into account the impact of economic cycles.

9 *OECD 28 minus Australia, New Zealand and South Korea.*
10 *Department of Finance, Stability Programme Update – December 2009.*

Figure 8: Comparison of indices based on resource drivers and project costs



Source: Bernard Williams Associates.

5.4 Choice of Output Options

Strategic choices, for example in relation to spatial development, density of housing in cities, water supply, interconnection of electricity grids and transport (air, bus and rail), can have a significant impact on the cost of service provision. **Figure 7** shows the evolution of the net capital stock from 2000 to 2009 when there was a disproportionate allocation of resources to residential dwellings.

The objective must be to prioritise infrastructure required to improve the competitiveness of the internationally traded sectors of the economy at the optimum cost.

Note: This indicator measures produced fixed assets, which excludes natural assets such as land, mineral deposits, etc. Fixed assets decline in value over time, due to, for example, wear and tear and obsolescence. Taking this declining value into account, together with retirement of capital, yields the net value of the stock of fixed assets which is shown in the chart.

5.5 Spatial Development and Costs

Infrastructure projects should prioritise those which will yield the greatest cost benefits in improving competitiveness. The Academy Report on Infrastructure indicated that some 85% of the population of the island lives within a 65km radius of the main cities. A Forfás report (National Competitiveness Council's Our Cities: Drivers of National Competitiveness) stressed that the competitiveness of the Irish economy and the growth of employment is dependent primarily on priority being given to ensuring that Irish cities have a world-class infrastructure appropriate to their scale. The provision of high quality infrastructure and the provision of services costs less per capita in areas having a high density of population than in regions where the population is dispersed.

5.6 EU Efficiency Review

A review of construction resource use efficiency and project costs in 13 EU countries published in 2006 by Bernard Williams Association (BWA)[11] for the European Commission ranked Ireland lowest (**Figure 8**).

The highest ranking countries benefited from most of the following factors:

- Extensive industrialisation of the process;
- Total or partial delegation of detailed design to the contractor (e.g., Germany);
- A well-paid, well-trained, industrious workforce;
- Limited scale of sub-contracting;
- Well developed lean construction management; and,
- Single point of responsibility for design and construction.

5.7 UK Infrastructure Cost Review

The UK had also one of the lowest rankings in the BWA report described in the previous section. There are many similarities in the operation of the industry between the UK and Ireland. Differences can be influenced by the mix of construction activity, for example between housing, which has a high propensity to sub-contract, and civil engineering, which has a lower propensity. The findings of the Infrastructure UK Cost Review[12] published in December 2010 are therefore relevant.

The review identified higher costs in the UK than international competitors as being mainly generated in the early project formulation and preconstruction phases. These included factors such as:

- The lack of a continuous pipeline of forward work resulting in stop/start programmes;

11 Benchmarking of Construction Costs in the Member States (Pilot Study).
12 Infrastructure UK Cost Review – December 2010

- Lack of clarity and direction, particularly in the public sector, over key decisions at inception and during design;
- The management of large infrastructure projects within a quoted budget, rather than aiming at the lowest cost for the required performance;
- Over specification and the use of bespoke rather than off the shelf designs;
- Interpretation and use of competition processes not always most effective in producing lowest out-turn costs;
- Companies in the supply chain investing tactically rather than strategically for the market as a whole; and,
- Lack of targeted investment by industry of key skills and capability limiting drive to improve productivity.

5.8 Recommendations

There is an urgent need to close the gap in the overall efficiency and cost of infrastructure provision with our main competing countries. Pressures on Government finances require that much of the financial provision must come from the private sector. Multi-annual plans are required to ensure a sustainable development of infrastructure. Investors in infrastructure require the opportunity to earn, often through user charges, a return which reflects the risks involved.

The following actions can make a significant contribution in remedying the deficit:

- Prioritisation of projects which will provide the greatest benefits to the economy when related to cost;
- Greater involvement of the private sector in the provision of public infrastructure to overcome the funding shortfall;
- More efficient delivery of infrastructure;
- Improved competitiveness of infrastructure provision;
- Better value for money.

Further details on specific areas follow.

6 COST OF BUILDING LAND

6.1 Cost of Land for Infrastructure

The prices paid for the purchase of land and the acquisition of way leaves, especially for linear developments, have formed a major component of the cost of infrastructure in Ireland over the last 15 years. This raises serious questions on the value for money obtained and whether an appropriate balance has been struck between the right to private property and the common good.

The current processes in place for acquiring land are workable, if not always straightforward. In theory land can be acquired compulsorily and the right to enter land and construct works at a fair price is determined at a later stage by the arbitrator. However, experience has shown that failure to negotiate a settlement with a landowner in advance can lead to long and costly delays in the execution of projects, resulting in a trade-off between achieving co-operation and paying a higher price for land or a way leave.

This has led to national agreements being negotiated with interest groups such as the Irish Farmers Association to facilitate access to land and to standardise the level of payment to landowners. However, this involves the payment of a premium which can be significant and is invariably passed on to taxpayers, either as a utility charge, a toll or by means of increased taxes.

6.2 Land Acquisition for Inter-urban Motorways

There are indications that the cost of land for motorways in Ireland is significantly higher than the EU norm. Land acquisition for the recently completed inter-urban motorway system has resulted in a huge transfer of wealth from taxpayers and road users to landowners. Of the €8 billion overall cost, €1.46 billion, or 18.5% of the total, was spent acquiring 7,800 hectares required for 1,000km of motorway.[13] This is equivalent to €187,000 per hectare or €76,000 per acre.

6.3 The Kenny Report

The Kenny Report published in 1974 addressed the issue of how the cost of development land could be controlled. The main recommendation in the report would have given the State the right to compulsorily acquire land in designated areas, defined as lands which in the opinion of the High Court would probably be used during the following 10 years for housing, industry, or for the purposes of expansion or development.

Payment to landowners would be at the existing use value plus 25%. The report said that this was a reasonable compromise between the rights of the community and those of landowners. Much larger premiums over existing use value have been paid to landowners during the current infrastructure programme.

6.4 Recommendations

- Wide variation currently exists in relation to negotiation and payment for the acquisition of land and way leaves. This leads to a high cost component in infrastructure projects, both as a result of prices paid and costs associated with delays and litigation. There is a clear need for a common approach to the acquisition of land or way leaves across the range of national infrastructure.
- Legislation setting up the National Infrastructure Authority (**Section 9**) should include a new code of practice for agreements with landowners for all infrastructure projects. This should include the cost of land and way leave acquisition, access arrangements, accommodation works and reinstatement of lands, on the basis of fairness and value for money. Consideration should be given to a mechanism for dispute resolution including a process for final referral to the Commercial Court.

13 *Fred Barry, CEO, NRA – Engineers Ireland Roads & Transportation Society, May 2010.*

7 OPPORTUNITIES FOR IMPROVING PUBLIC PROCUREMENT

7.1 Existing Situation

Public Procurement adheres to EU Directives and criteria set down by Government for Public Private Partnership (PPP) schemes. However, within these approaches individual Government departments and agencies impose different administrative procedures and requirements for appraisals, sometimes at various project life phases. These vary by programme and often have different purposes.

In many cases, multiple procedural approvals and actions[14] also exist and contribute to significant delays and additional costs. This can be due to the need to comply with the procurement procedures of the procuring public body as well as those of the relevant ministry or agency. It is further aggravated by the fact that some Government departments' project control systems tend to preclude innovations, such as early contractor or supplier involvement, early commercial dialogues, use of schedule of rates contracts (for smaller works) and target cost contracts.

Further inefficiencies in the procurement and delivery of goods and services exist where the procuring public body does not have autonomy as the sponsoring and sanctioning authority. This is further exacerbated by the varying levels of expertise and standardisation of procurement procedures and processes by the different public bodies. Instances of inadequate compliances and standards have been the subject of the Comptroller and Auditor General's Office's reports over many years.

Procurement procedures have traditionally not been designed as a suite to cater for:

- Variations in the scale and size of projects;
- Project location (i.e., greenfield or urban)
- Project type (e.g., fixed operation such as a prison, waste to energy scheme); or, a variable operation such as a water/waste water treatment plant; and,
- Novel design and contract models to be deployed to provide expansion/contraction flexibility (e.g., to cater for climate change resilience).

Current procurement practices tend to treat the standardisation of designs, goods or services as implying a repetitive, cheap product, rather than encouraging the use of generic designs or products. The more widespread use of generic designs has the potential to expedite the development of infrastructure and lower outturn costs, as has been demonstrated in the provision of bridge designs for some of the motorway schemes.

7.2 Strategic Planning and Prioritisation

Two major factors impact on the efficiency of the procurement process:

a) The absence of agreed and published long-term strategic plans and priorities by Government or the sponsoring body; and,
b) The lack of multi-annual budget provisions in many public bodies.

Both of these factors cause delays in the procurement process at both the design and contracting phase, with associated inefficiencies arising from scope changes, variations and additional costs.

In addition, while the National Development Plan (NDP) outlines programmes and schemes for implementation,

14 *Analysis of a typical medium-scale water services capital project in a large local authority reveals that over 270 procedural/approved tasks were required, from project inception to completion. At a notional default value of one day per task, these alone involve over 8 ½ months of a project's time scale. Based on a notional three-day working period per decision task, a possible two years plus of project time can be involved.*

there is a lack of any forward planning, prioritisation and subsequent procurement to support their delivery. This particularly applies to major programmes/projects with an inception to delivery life span of 10-15 years.

The current economic downturn offers an opportunity to reappraise and prioritise both of these issues to ensure that on recovery a portfolio of cost-effectively designed and prioritised programmes and schemes is available for procurement in a pre-planned manner.

7.3 Transparency of Risk Transfer Costs

The public procurement process does not have a transparent mechanism which demonstrates or quantifies the cost of the risk transfer required or being sought in public tendering. The Government appears content to rely on the new Government Conditions of Contract as its main vehicle for implementing the Capital Works Management Framework. As long as this situation persists it will remain a fertile ground for contract disputes and claims between parties. The real cost of risk transfers at procurement stage may not become apparent until these conditions are tested at arbitration, or in the courts, over the next few years.

7.4 Comparisons within the EU

The Bernard Williams Associates (BWA) Final Report on 'Benchmarking of Use of Construction (Costs) Resources in the Member States (Pilot Study)' of March 2006, commissioned by the ECDG Enterprise and Industry Construction Unit, found that out of the 10 EU countries examined, Ireland ranked among the least efficient for resource usage, based on an analysis of resource drivers. While not specifically referring to the procurement process, the study examined projects from inception (ie., procurement) to completion. It specifically identified those highest ranking countries as also having the best trained management systems. Implicit in these findings is that Ireland would benefit significantly from adopting best practices from the highest ranking countries (e.g., Germany, the Netherlands and Sweden), including their procurement practices and processes.

7.5 Recommendations

- There is an urgent requirement for the harmonisation and rationalisation of central Government departmental and agencies' administrative and project management procedures governing public procurement practice. This standardisation should take place within the context of best EU practice and project management procedures. It should also cover approval processes and include a streamlined strategic focus, rather than the existing multiplicity of steps. To ensure best value is achieved an appraisal of whole life costs versus initial price should also be carried out.
- A national working group should be established to ensure international best practice in the procurement of planning, design, construction, operations and maintenance services, thus bridging the gap between the best performing EU countries and Ireland.
- Public procurement for strategic infrastructure and linear development should be conducted by the National Authority, recommended in **Section 9** of this report.

In the case of other projects, the necessary authority should be devolved to the lowest appropriate party. Once strategic national priorities have been set their implementation may also be delegated to the appropriate local level. However, such devolution should only be undertaken where the centralised infrastructure promotion body is satisfied that accredited procurement competence exists within the delegated lower body.

- Where possible, public procurement should be planned and scheduled within the context of clearly agreed and published national strategic plans and associated affordable multi-annual budgets. The current economic downturn provides an opportunity to develop such forward prioritisation and planning.
- Public procurement centres of excellence as a core function of any centralised infrastructure promotion body should be developed and accredited.
- Guidance on permissible and desired early contractor/supplier involvement, which does not compromise competition rules, should also be provided.
- National procurement processes and standards must be developed to accommodate variations in project type, scale, location, purpose and contract models.
- The use of generic design should also be encouraged through public procurement criteria.

- Central Government should retain an audit role rather than a constant presence in the procurement process.
- Bid processes must clearly identify relevant risk transfers and associated costs.
- National training courses and accreditation for people engaged in large-scale public procurement should be put in place. This would ensure a high level of expertise and standards within accredited procurement excellence centres. Accreditation must require that appropriate professional training, and technical, economic and legal (contract) competencies are in place.
- Centres for Procurement Excellence and 'Intelligent Clients' currently in use in Northern Ireland could equally apply to Ireland and could serve to avoid costly overruns, contractual claims and disputes.[15]

15 Note: All of the above may be seen to have equal application, in whole or in part, to general government and public services wider procurement practices.

8 PLANNING CONSENTS AND COMMUNITY ENGAGEMENT

8.1 Introduction

A number of key infrastructure projects have encountered major setbacks in recent years due to extensive delays in obtaining the necessary permits and consents to allow construction. This has resulted in significant cost increases and may indeed have threatened the viability of some projects and consequent employment creation. This raises serious questions about the system currently in place to scrutinise and adjudicate on nationally important projects submitted for approval. The challenge is to transform the approval system into one which is much more effective and can deliver greater certainty of outcome in a consistent, timely and transparent manner.

8.2 Requirement for an Effective Approval Process

Before suggesting actions to improve the system, it is useful to first consider what an effective infrastructure consent regime might contain:

1. For each major infrastructure project, consent from one authority only should be required to allow construction to proceed. That authority should be responsible for managing the necessary inputs from other State bodies.
2. The approval system should be transparent with clearly defined rules and guidelines, which avoids overlapping responsibilities for different approving authorities.
3. The system should provide greater certainty of outcomes and decisions should be consistent.
4. The processes in place should be cost effective for all parties involved.
5. All approvals should be subject to timescales for decisions and inputs by parties and these should be adhered to. Oral hearings should be conducted expeditiously with strict rules on participation.
6. Proper consultation, including community engagement, should be a requirement and should commence as soon as it is intended to prepare an application.
7. Decisions should accord due weighting to the common good, while recognising the need to achieve as broad a consensus as possible.
8. Decisions must comply with Irish and EU legislation.

A number of these features are included in the various approval processes currently in place. However, the fragmentation caused by the separate and parallel processes and the overlap in the issues being examined by different authorities, highlights the need to overhaul the system for approving proposals for essential infrastructure.

8.3 A Single Approval to Construct

It is interesting to note that in a recent discussion paper relating to Energy 2020, the European Commission stated that it is proposing "to introduce a permitting scheme applying to projects of 'European Interest' to improve the current process through, for example, the nomination of a single authority at national level, while respecting safety and security standards and ensuring full compliance with the EU environmental legislation".

The incorporation of the Strategic Infrastructure Division in An Bord Pleanála, arising from the Planning and Development (Strategic Infrastructure) Act 2006, has improved matters. Also, the processing of Integrated Pollution Prevention and Control (IPPC) licences by the Environmental Protection Agency (EPA) is generally satisfactory, as are the processes of the Health & Safety Authority (HSA) and the Commission for Energy Regulation (CER) in dealing with their individual consents. However, the lack of integration of the separate approvals causes major difficulties.

The approach to dealing with foreshore licences and leases has been very poor and there appears to be no likelihood of

an improvement in the short term. For example, it is possible to obtain permission from An Bord Pleanála for a complex project within six months and then to wait two or three years before a foreshore licence or lease is granted to allow construction to proceed. This is totally unacceptable in a modern economy. The Minister for the Environment, Community and Local Government is preparing the general scheme of a Marine (Planning and Development) Bill transferring responsibility for foreshore licensing to the Strategic Infrastructure Division of An Bord Pleanála or, where appropriate, to the relevant planning authority. This is due to be finalised by Summer 2011 after which it is essential that the necessary legislation to effect this change is enacted as a matter of urgency.

An Bord Pleanála will typically be the first body to grant permission for major infrastructure projects. Construction should be allowed to proceed in a timely manner once a favourable decision has been given. However, it is normal for a number of the other bodies to take considerably longer to issue their decisions and they may not necessarily be in full agreement with the Board. The system should be streamlined to make a single authority responsible for granting approval to commence construction (as opposed to operating consents) and also for managing the input from all relevant expert bodies to the approving authority, with strict timescales being adhered to. Where appropriate, the approving authority should be required to rely on the specialist expertise of other state entities that have clearly defined roles and responsibilities in safety, environmental and other relevant areas. These bodies should be obliged to participate fully in the permitting process and to do so in a timely manner. In this context the following quotes from the final report of An Bord Pleanála's inspector on the Corrib gas pipeline project are relevant:

"The contributions of the prescribed bodies have been vital in providing expert opinion and in the assessment of the overall impacts of the proposed development."

and

"Further strategic planning is required if the depths of controversy and conflict seen in the Corrib scheme are to be avoided in future. Standards, strategic development sites, strategic corridors, clear process requirements for all consents, open procedures for decision making, transparency in presentation of projects, these are areas that have led to the depth of conflict and controversy seen in the Corrib scheme."

(It should be noted that while the Corrib gas pipeline was given approval by An Bord Pleanála in January 2011, this did not entitle it to proceed pending receipt of two separate permissions from the Department of Communications, Energy and Natural Resources (DCENR) under S40 of the Gas Act 1976 and Section 13 of the Petroleum Act 1960 as well as a Foreshore Licence from the Department of Environment, Community and Local Government (DECLG).

A listing of the main consents required to commence construction on a range of project types is given in **Appendix 1**.

8.4 Environmental Impact Assessment

The approach to environmental impact assessment is perhaps the clearest illustration of the lack of integration of the various approval processes. For a single project, an environmental impact statement (EIS) may require appraisal by several authorities as part of different consent processes, each with a different timescale and some with no time limits. For example, a project may require:

- Planning approval by An Bord Pleanála;
- Grant of foreshore licence/lease by the Department of Environment, Community and Local Government (DECLG);
- Grant of Integrated Pollution Prevention and Control (IPPC) licence by the Environmental Protection Agency (EPA); and,
- Approval by the Department of Communications, Energy and Natural Resources (DCENR) or the Commission for Energy Regulation (CER).

The EIS is an essential part of the documentation to be submitted with each of these applications. The same situation exists where an Appropriate Assessment is required by the EU Habitats Directive. This is a clear flaw in the system and if confusion and conflict are to be avoided, one 'competent authority' only, i.e., the authority responsible for approval to construct, should be responsible for environmental assessment, with all relevant parties providing their inputs to the competent authority as part of this assessment. This is particularly important in light of the recent decision of the European Court of Justice which found that Ireland has not transposed the EIA Directive properly by failing to clearly allocate the responsibility for assessment of interaction of impacts to one competent authority.

8.5 Consultation

If we are to improve the effectiveness of our planning system it is essential that there is an appropriate balance between the rights of individual citizens and the common good. Public infrastructure delivers a benefit to every citizen, to the economy and to society as a whole.

In programming public infrastructure the requirement of clause 43.2 of the Constitution relating to the "exigencies of the common good" must be fully taken into account in Government policy in legislation, and in planning and judicial decisions. An essential starting point for both public and private promoters of projects is an early engagement with all the stakeholders where the "common good" benefits can be articulated and individual citizens who will be affected by a project are informed fully and invited to participate in the process in a meaningful way. Pro-active consultation must continue throughout the project and be approached on the basis of mutual respect with proper community engagement and regular updates. This will not necessarily satisfy all participants but it is the only way to enable an appropriate involvement of all reasonable stakeholders.

While some state organisations have well developed procedures for proper consultation, there is a wide variation in the approach being adopted across the range of infrastructure projects. To counter this, clear national guidelines or a code of practice should be established to ensure full participation of all stakeholders and consistency in the implementation of the consultation process.

8.6 Some Specific Issues

An area that needs to be examined carefully and should be the subject of new or amended regulations is the level of detailed design required for submission with an approval application. Much of our infrastructure is now tendered on a Design and Build or Public Private Partnership basis to provide better value for money. However, the level of design required to prepare an EIS deemed acceptable by all bodies is such that the flexibility allowed to tenderers to innovate and alter designs is very limited. This often prevents desirable cost reductions from being achieved. Better value for money will be obtained if the process can be amended to accommodate more generic designs with appropriate conditions included to ensure that the final design and construction meets the environmental conditions attached to the approval.

In a similar vein we need to question the approach being used for newspaper and site notices displayed when permission is being sought for major infrastructure projects. The situation that emerged recently where a planning application for an essential cross-border electricity interconnector was withdrawn, presumably on legal grounds, should not have been necessary. The intention of a site notice or newspaper advertisement should be to alert the public about the application, to outline the general nature of the project and to indicate how and where an interested party may obtain further information. The fact that the exact heights of some of the pylons as shown on the notice are inaccurate, while they are shown correctly on the drawings and in the EIS, should not be a cause for withdrawing the application. The existing laws and regulations should be reviewed and any changes or clarifications required should be made to provide a more robust and realistic approach to the content of such notices.

Another area requiring serious attention is the situation where the same controversial safety or environmental issue is raised and argued at length on project after project. One example of this is the concern repeatedly expressed on the effects of high voltage lines on human health. It seems logical that once An Bord Pleanála has made a decision on such an issue, the definitive position should be stated by the Board and the matter should only be re-opened where it is clear that fresh evidence is being put forward.

8.7 Recommendations

- A single authority should be responsible for granting approval to commence construction of strategic infrastructure. Where appropriate, the approving authority should be required to rely on the specialist expertise of other state entities that have clearly defined roles and responsibilities in safety, environmental and other relevant areas. These bodies should be obliged to participate fully in the permitting process and to do so in a timely manner.
- One 'competent authority' only, i.e., the authority responsible for approval to construct, should be responsible for environmental assessment, with all relevant parties providing their inputs to the competent authority as part of this assessment.
- Clear national guidelines or a code of practice should be established to ensure full participation of all stakeholders and consistency in the implementation of the consultation process.

- The approval application process should be amended to accommodate more generic designs including appropriate environmental conditions.
- The existing laws and regulations should be reviewed and amended to provide a more robust and realistic approach to the content of planning application notices.
- Where An Bord Pleanála has made a decision on safety or environmental issues which cross many projects, the matter should only be re-opened where it is clear that fresh evidence is being put forward.

9 INSTITUTIONAL ARRANGEMENTS FOR THE DEVELOPMENT OF INFRASTRUCTURE

9.1 Introduction

Thirty-four local authorities are involved in the provision of infrastructure such as water and non-national roads, and in the granting of planning permission for gas, electricity and telecommunications. In addition, the Department of Environment, Community and Local Government and other departments, as appropriate, are required to give approval for the contractual arrangements and financing of individual projects.

This combination of a large number of local authorities having responsibility for planning, together with a plethora of statutory regulatory agencies, increases the complexity of project planning. It involves a matrix of relationships which leads to delays, lack of clarity in decision making and additional costs. The wide dispersion of authority and responsibility also results in considerable variation in approaches and expertise of different, and frequently under-resourced, contracting agencies. Finally, the retention of responsibility for infrastructure planning and procurement within Government departments can result in competition for and diversion of manpower and financial resources on a day-to-day basis. Time must be allocated to answering a myriad of parliamentary questions on matters of local interest, and unscheduled delays and changes in specifications frequently add to the costs of delivery.

A similar situation existed in relation to national primary roads until 1994. In order to address these issues the National Roads Authority (NRA) was given authority for the programming, overall design, and procurement of inter-urban motorways within the framework of a multi-annual budget. This has enabled it to concentrate on achieving optimal solutions with regard to priorities and the cost of delivery. Decisions on route selection take into account advice from the relevant local authorities following public consultation. Projects are chosen which are of sufficient scale to attract international bidders (usually in association with local companies), and public private partnership (PPP) bids, and which will achieve lowest costs. The increased scale of projects has resulted in a significant reduction in outcome costs and in lower costs of delivery than would otherwise be possible. Evidence of reduced costs of delivery and faster completion times is provided in the annual reports of the NRA. The Authority has developed a depth of professional engineering procurement and programme management expertise which is not available elsewhere in the Irish public sector.

There is a strong partnership arrangement between the NRA and local authorities, particularly in relation to planning and compulsory purchase agreements. Local authorities retain responsibility for the delivery of non-national roads.

The situation with regard to water services (supply and waste water) is similar to that regarding roads prior to the establishment of the National Roads Authority in 1994. A similar national focus, combined with a cross-border approach in relation to river basins, is now required. The EU Water Framework Directive sets out major commitments and the recent EU/IMF Programme for Financial Support for Ireland outlines specific commitments in relation to water services. These commitments require the establishment of a national authority or utility. The Academy welcomes the commitment in the Programme for Government 2011 to establish such a body – Irish Water (IW). It is currently preparing a separate report on water services which will propose in detail what it believes the role and relationship of IW to other stakeholders in this sector should be.

The consolidation of Irish Water in its final state as a self-sustaining stand alone utility will be a complex process and will take a number of years to complete. However, it should be established as soon as possible. In the setting up of Irish Water the Academy is conscious of the need to ensure specialist skills, such as macro-planning, project management of large construction contracts, procurement and PPPs, which

exist elsewhere in the public sector, are not duplicated.

While the NRA/RPA and IW would have overall responsibility for their own affairs, they should be supported by a single National Infrastructure Authority (NIA). The Authority's expertise in macro-planning, project management, PPPs and procurement would be centralised and could be sourced initially from the current NRA/RPA resources and, subsequently, applied across IW and NRA/RPA.

The establishment of a single infrastructure authority would also address the urgent need to rationalise and simplify the number of organisations engaged in the co-ordination, planning and delivery of infrastructure projects and reduce associated costs. Its establishment would address the following issues:

- **The World Economic Forum Global Competitiveness Index** 2009/2010 commented on the perception, albeit from a modest sample of senior executives in Ireland, regarding the wastefulness of Government spending and inefficient government bureaucracy as the second most problematic factor for doing business in Ireland.
- **The BWA Report for the European Commission** in 2006 pointed to the requirement for a single point of responsibility for design and construction to minimise project costs and improve resource use efficiency.
- **The UK Infrastructure Report** pointed to a lack of clarity and direction, particularly in the public sector, over key decisions at inception and design and over specification and the use of bespoke rather than off the shelf designs. These issues are also relevant in Ireland.
- **A 2003 inter-agency NDP submission** commenting on National Project Management stated:
  "The poor administrative arrangements which inhibit good national project management of economic infrastructure delivery under the NDP have been the subject of much criticism and are seen as the cause for significant cost over-runs and time delays to the delivery of economic infrastructure projects. ... It is vital to ensure that the necessary planning and delivery capabilities and coordination mechanisms exist within the public sector for large public infrastructure projects."
- **The 2010 Forfás Report 'Making it Happen – Growing Enterprise for Ireland'** in the section dealing with 'Prioritising Infrastructure Investment to support Enterprise', notes that infrastructure "rollout can be done in a more co-ordinated and joined up manner. This has the potential to deliver significant cost savings, particularly where projects are undertaken simultaneously. A strengthening of existing institutional arrangements to enable the increased sharing of investment rollout plans across government departments and agencies is required." It further notes that while infrastructure alone is not enough to confer competitive advantage, infrastructure deficits can seriously erode productivity and, ultimately, competitiveness.
- **Project management skills:** Infrastructure construction firms in Ireland maintain that there is insufficient internal consideration of projects in public bodies prior to commencing the tendering process. There is also a tendency to send projects out for tender to the private sector prior to proper external consultation regarding the desired project outputs and the overall procurement process.

9.2 Recommendations

In view of the issues described above, the small scale of the Irish economy and the need to obtain the maximum benefit of economies of scale, it is recommended that the NRA/RPA and the proposed new water services utility, Irish Water, be brought together as separate organisations under the aegis of a National Infrastructure Authority. The National Infrastructure Authority would be allocated a multi-annual budget for the delivery of significant linear and strategic infrastructure projects. However, it is noted that it would be particularly important to ensure revenue from water charges accrues solely to Irish Water and is used only for the development, operation and maintenance of water services. The National Infrastructure Authority's brief should initially be limited to transport and water services projects. These are key elements of infrastructure which require a close interaction with local authorities and public agencies.

The National Infrastructure Authority would be a single powerful organisation responsible for the planning, co-ordination, procurement and delivery of major construction and PPP projects leading to simplification of procedures, more timely decision making and better value for money.

It would be a lean organisation with a high degree of outsourcing for programme delivery. Its primary focus would be on planning, funding, programme management, procurement and delivery of major construction and PPP projects. In general it is envisaged that each (transport and

water services) organisation would manage its own affairs, including operations and maintenance functions, except in the case of the major PPP projects mentioned above.

The Authority should be established on an incremental basis initially. Other elements of infrastructure could be added in due course (for example, broadband infrastructure and other linear and strategic infrastructure projects).

10 CONSTRUCTION INDUSTRY SKILLS AND TRAINING ISSUES

10.1 Immediate Issues

Having expanded at an unsustainable rate in the years up to 2007, output and employment in the construction industry has collapsed leading to a loss of many essential skills. Such wild fluctuations in manpower are a disincentive to firms to invest heavily in training to increase medium-term productivity and they encourage a greater emphasis on subcontracting. The health and viability of the construction industry is of key importance in the provision of a sustainable infrastructure at economic cost.

The collapse in private and public sector construction activity will see levels in 2011 reduce to approximately half of the EU average levels, with the following consequences:

- Company failures and high levels of unemployment;
- Export of plant and skills;
- Lack of investment in the industry;
- Reduced training;
- Below cost pricing; and,
- Increased debt and non-payments.

This report concerns itself with the necessity to retain skills and training at sustainable levels.

10.2 Proliferation of Sub-Contracting

There has been a major increase in the use of sub-contractors in the construction industry. This is particularly pronounced in the building sector. In many cases the main contractors have become management contractors and retain virtually no trades or skilled workforce themselves. This multiple sub-contracting acts against management and quality excellence in large, repetitive civil engineering and building works. However, the necessity for specialist, niche sub-contracting (e.g., complex steelworks, etc.) is accepted as a norm in the industry.

The widespread use of sub-contractors has grown out of a rational commercial survival and adaptation mechanism to the industry's market environment. This practice will not change until the market environment changes. That will require the implementation of a long-term, planned, stable and sustainable investment policy by Government. Within that investment policy there must be measures to ensure, not only job creation, but concerted efforts to ensure skills improvements and workforce training in order to increase productivity levels substantially.

10.3 Training and Education

The Expert Group on Future Skills Needs[16] has identified that investment in education and training at all levels must remain a priority and must assist the learner in advancing to employment readiness. They further point out that the return to economic growth will be export led and based on improvements in productivity.

Apprenticeship places have fallen dramatically as a result of the economic crisis. It is estimated that there were 8,000 places in 2006 with approximately 1,000 in 2010.[17]

The Expert Group on Future Skills notes that there has been a drop in those seeking to take up courses in construction-related subjects. While this is understandable, skills and talent will drive the future development of small and medium enterprises, including construction enterprises, in Ireland. While some companies are involved in retraining of staff and realignment of their businesses to new business opportunities (for example, in the green energy sector), it is critical that the construction industry, in co-operation with Government,

16 *The Expert Group on Future Skills Needs, Statement of Activity 2010 – www.skillsireland.ie.*
17 *Creating a Future for Young Job Seekers, National Youth Council of Ireland, 2011.*

develops specific actions to ensure that the skills required for infrastructural projects in Ireland exist into the future.

10.4 Future Direction

The capacity and skills level of the industry increased dramatically over the last 20 years. It has the capacity to tackle very large and complicated infrastructure projects. There is a substantial risk that this capability may be lost if construction activity persists at its current historically low level.

From the perspective of the construction industry the following issues need to be addressed:

- Reliable multi-annual budgets: The Public Capital Programme was reduced significantly from July 2010 to December 2010. It is essential to have reliable multi-annual budgets, which should include complementary private funding, to enable the industry to plan its future and invest in appropriate training and apprenticeship schemes.
- Training: In recent years the industry has drifted more towards sub-contracting so that main contractors engage fewer tradesmen. As such main contractors do not now have the resources and the ability to train apprentices. The Government and the industry need to address this issue and agree how best to maintain an appropriate flow of apprentices, skilled workers and appropriately qualified professionals in the construction disciplines and associated research and development.
- Off-site manufacture: Recent studies by the ECDG Enterprise and Construction Unit found that construction costs are cheaper where off-site manufacture is greatest. There is great scope for improvement here if the industry invests in and deploys the necessary trained resources in its development and implementation.

10.5 Recommendation

Engineering research in Irish economic development was reported upon by the Irish Academy of Engineering in December 2010 (see www.iae.ie). In that report closer linkages between industry, and the engineering schools and technical colleges was encouraged. The construction industry should proactively engage in this liaison and provide the professional on-site internships recommended.

11 FUNDING AND FINANCING MECHANISMS

11.1 Funding Infrastructure Investment

Prior to the recent recession the funding environment has been conducive to funding long-term capital investment, as financial institutions lent long term while being funded through short term borrowings. However, as public finances are likely to be constrained for a number of years, it is essential that alternative sources of finance are investigated with some urgency.

To achieve infrastructure quality comparable with the best in the developed OECD countries it is of critical importance that Ireland continues to invest in public infrastructure over the next 20 years, through a combination of private and public funding,

It is worth noting that in a recent study the Council for Science and Technology (UK) anticipates that 65% of infrastructure will come from the private sector in 2014, 6% from PPPs and the balance of 29% from public funds over the next decade or longer. It is proposed that a target is set to fund half the annual public infrastructure in Ireland by the private sector. This would enable a gradual closing of the infrastructure gap with our competitors.

11.2 Menu of Funding Options

Infrastructure can be funded and delivered in a variety of ways, including:

- Commercially-driven, user-paid infrastructure, for example, unregulated airports and ports where the developer decides what infrastructure is built and when. Any development is then paid for by consumers. Prices are not regulated because competition exists;
- Commercially driven, user-paid but price-regulated infrastructure such as airports, electricity generation and transmission, gas transmission and water. Price-regulated businesses where independent regulators play a role in determining the level and nature of investment;
- Price-regulated business (that is, funded by the taxpayer and users), for example, toll roads and rail, where the regulator sets efficiency targets and prices for the business. In recent years €2 billion has been invested, through PPP programmes, by the private sector in road construction. These roads would not otherwise have been built; and,
- Publicly funded infrastructure such as non-tolled roads. In this case the public authorities decide where they should go, when they should be built and pay for them.

11.3 Examples of Additional Funding Sources

In the current very difficult budgetary situation in Ireland following the ECB/EU/IMF financing package, it is clear that the mix of project financing will change and will include elements of the following:

- Sale of Government equity interest in public utilities to private investors who can then operate the business in normal commercial ways. Funds for expansion can be funded from user charges. This process is normally undertaken at the same time as the appointment of an industry regulator whose role is to protect the public interest (for example, British Gas, Rolls Royce, British Ports, British Airways);
- Reinvestment by Government of capital released by sale of existing State assets in new assets which would reduce the infrastructure deficit and provide a strong cost–benefit return;
- Establishment of a Strategic Investment Bank as proposed in the Programme for Government 2011 – Statement of Purpose;
- The role of the European Investment Bank (EIB) as a source of finance will become much greater. The EIB provides up to 50% of the cost of infrastructure projects and has a long history of financing PPPs. The EIB has financed many public infrastructure projects and PPPs such as roads,

energy, water and sewerage, and education on the island;

- User charges, particularly for water, waste, roads and rents, may supply a significant percentage of cost;
- Investment by insurance companies operating in Ireland. The pension industry may identify matched funding between long-term assets and long-term liabilities;
- International banks;
- PPPs: The financing requirements of Design, Build, Finance and Operate projects would need to be quite large to attract interest from international banks, i.e., in excess of €100m to €200m. The ceiling is usually about €500m. Ownership of the projects normally reverts to the public authority at the conclusion of the operations and maintenance period when the assets are returned in good working order. This currently applies in relation to sections of the inter-urban motorways and could also be applied to water projects. Other examples of this approach are the Alpha Water Treatment PPP project, which supplies 50% of water production in Northern Ireland, and the Omega PPP project, which provides 30% of the waste water treatment;
- Mutual funding model finance: Suitable for a major project that is capital intensive and that has protected income such as through the process of regulation. The assets of a former public utility are vested into a corporate vehicle that is owned and operated by the trustees in the public interest. The new entity is subject to regulation. Funding is totally by debt but is off the Government's books. Examples include Northern Ireland Mutual Energy Holdings, which has a capital of £350m and Welsh Water; and,
- Tender offers for private investment in new infrastructure projects, (e.g., ports, airports, water metering, buildings, water and waste water treatment, etc.). Where monopolies exist a regulator should protect the public interest.

11.4 Recommendation

To achieve infrastructure quality comparable with the best in the developed OECD countries, it is of critical importance that Ireland continues to invest annually over the next 20 years, through a combination of private and public funding.

In view of the intense pressures on public finances, and the need to improve the quality of infrastructure, the overall objectives must be to complement public funding on infrastructure with an equivalent amount of private funding, using a suitable combination of the funding and financing mechanisms outlined above.

APPENDIX 1 – MAIN CONSENTS REQUIRED TO CONSTRUCT MAJOR INFRASTRUCTURE PROJECTS

Project Type (*consents that do not require public consultation)	Consent Authority
Road Projects	
Approval for road scheme, including Compulsory Purchase Order	An Bord Pleanála
Approval of Toll Scheme	Board of NRA
*Consents under Section 50 of the Arterial Drainage Act	Commissioners of Public Works
*Railway Bridge Order, if bridge over railway	Irish Rail
Foreshore Licences, if applicable	Minister for the Environment, Community and Local Government
*Tree Felling Licence, if applicable	Minister for Communications, Energy and Natural Resources
*Licences under National Monuments Acts for archaeological testing and excavation	Minister for the Environment, Community and Local Government
Temporary Effluent Discharge Licence for construction phase, if applicable	Local authority
Rail Projects	
Rail Order, including Compulsory Purchase Order	An Bord Pleanála
*Consents under Section 50 of the Arterial Drainage Act	Commissioners of Public Works
Foreshore Licences, if applicable	Minister for the Environment, Community and Local Government
*Tree Felling Licence, if applicable	Minister for Communications, Energy and Natural Resources
*Licences under National Monuments Acts for archaeological testing and excavation	Minister for the Environment, Community and Local Government
Temporary Effluent Discharge Licence for construction phase, if applicable	Local authority
*Temporary Road Closure Order, if applicable	Local authority
Energy Projects: Offshore Oil or Gas Development	
Planning permission under Planning and Development Act, probably Strategic Infrastructure, including Compulsory Acquisition Orders, if required	An Bord Pleanála
Petroleum lease – plan of development	Minister for Communications, Energy and Natural Resources
Foreshore Licences – for surveys and geotechnical investigations as well as for development	Minister for the Environment, Community and Local Government

Consent under Section 39A or Section 40 of the Gas Act for pipelines	Commission for Energy Regulation or Minister for Communications, Energy and Natural Resources
Dumping at Sea Licence, if dredged material to be disposed of, at sea	Environmental Protection Agency
Consent under Part 8 of Planning and Development Regulations, if road upgrade to be done by local authority	Local authority
*Temporary Road Closure Order, if applicable	Local authority
*Road Opening Licence from local authority, if applicable	Local authority
*Power grid demand connection consent, if grid connection upgrade required	Eirgrid
*Licences under National Monuments Acts for archaeological testing and excavation	Minister for the Environment, Community and Local Government
Temporary Effluent Discharge Licence for construction phase, if applicable	Local authority
Energy Projects: Power Generation	
Planning permission under Planning and Development Act – Strategic Infrastructure	An Bord Pleanála
Consent under Section 39A of the Gas Act for pipeline, if applicable, including Compulsory Acquisition Orders, if required	Commission for Energy Regulation
*Licence to construct generating station	Commission for Energy Regulation
*Power grid demand and generation connection consents	Commission for Energy Regulation
*Notification to HSA under Seveso Directive	HSA
*Licences under National Monuments Acts for archaeological testing and excavation	Minister for the Environment, Community and Local Government
Temporary Effluent Discharge Licence for commissioning phase, if applicable	Local authority
Major Industry: Example Biotech plant	
Planning permission under Planning and Development Act	Local authority and An Bord Pleanala in the event of an appeal
*Notification to HSA under Seveso Directive	HSA
*Licences under National Monuments Acts for archaeological testing and excavation	Minister for the Environment, Community and Local Government
*Power grid demand connection consent, if grid connection upgrade required	Eirgrid
*Licence to construct generating station, if CHP on site	Commission for Energy Regulation
Temporary Effluent Discharge Licence for commissioning phase, if applicable	Local authority

APPENDIX 2 – OUTLINE FUNCTIONS OF THE NATIONAL INFRASTRUCTURE AUTHORITY

- Development of a five-, 10- and 15-year National Plan for strategic infrastructure and linear developments.
- Sanctioning of projects in accordance with Government policy and programmes and ensuring compliance with Irish and EU legislation.
- Accountability for the management of multi-annual budgets for major construction and PPP projects.
- Review and establishment of the business case for each programme incorporating economic, social and regional development with NRA/RPA and IW.
- Achievement of value for money and efficient delivery for major construction and PPP projects.
- Accreditation of procurement teams to achieve best international practice integrating technical, financial and legal competence.
- Organisation of finance including, as appropriate, private funding, user charges and the European Investment Bank. Initiate PPPs where feasible.
- Optimisation of synergies and potential cost reduction (including bundling where appropriate) between transport, water, waste, land use and public building infrastructure in specific geographic areas.
- Liaison with cross-departmental programme managers to ensure synergy with broader public sector projects (for example provision of ducting for broadband telecommunications on the national road network during construction).
- Development of joint projects with its counterpart organisation in Northern Ireland to improve value for money and cost reduction.
- Liaison with "Single Approval to Construction Authority" (**Section 8**).
- Provision of accessible information on current and planned capital investment (similar to Strategic Investment Board of Northern Ireland).
- Liaison with regulatory agencies for operations related to major construction and PPP projects, and with local authorities and other public bodies.

PART 3: NORTHERN IRELAND

12 BROAD APPROACH - BACKGROUND

12.1 Introduction

The Institution of Civil Engineers (ICE) in the United Kingdom published a State of the Nation Infrastructure Report in June 2010. At the same time the Northern Ireland Region of ICE produced its report on the state of infrastructure in Northern Ireland (NI).

In both reports infrastructure was assessed and graded on a five-point scale as follows:

A	Fit for the Future
B	Adequate for Now
C	Requires Attention
D	At Risk
E	Unfit for Purpose

The ICE (NI) assessment states, "We find the overall state of the infrastructure in Northern Ireland is at a tipping point. This is reflected in the award of a Grade C, which signifies the need for investment to enable effective functioning and avoid infrastructure failure in the next five years".

The specific rankings for each category of infrastructure were as follows and compared with the overall UK ranking:

At an overall level Northern Ireland and Great Britain have infrastructure deficits and are graded similarly (C). The sectors which differ in grading are energy, where NI is marginally ahead (in a poorly marked sector), and water, where it is lagging behind. Perhaps significantly, in the latter, water undertakings in England and Wales are with private companies.

ICE's inquiry has found that NI infrastructure currently stands at a crossroads. Major decisions must be taken now to ensure that the energy, water, waste and transport systems continue to function effectively, as well as helping NI to meet emissions targets and adapt to climate change.

For each of the categories of infrastructure which were ranked, the following are abbreviated observations (12.2 to 12.6) from the ICE (NI) report.

12.2 Energy (Ranking: C)

The electricity infrastructure within NI was privatised in 1993. Since then the dominant company, NIE, has demonstrated improvements in key performance indicators, which include efficiencies in controllable operating expenditures and core prices, as well as improvements in customer complaints, all under the watchful eye of the Regulator.

However, the ageing network, parts of which date from the 1930s, and the overall asset base, require significant replacement. To cope with the current and predicted increased demand in the coming years upgraded power stations were connected to the network in the 1990s. Moreover, with EU and Central Government's encouragement, renewable generation is currently increasing. However, there is real concern that the EU targets for the reduction in greenhouse gases by 2020 will not be achieved without significant investment in renewables and the network structure.

Additionally, all of the fuel (predominantly gas), used in the power stations in NI, is currently imported. Despite this, there is no significant storage for security of supply in the region, although consideration is being given for natural deep underground gas storage chambers.

12.3 Transport (Ranking: B)

The transport sector has successfully delivered the procurement and construction stages of the road contracts on the Key Transport Corridors (KTCs) within the Regional Transportation Strategy (RTS). Key transport routes are well served by well-maintained infrastructure across this sector. However, the secondary road network and local public transport require investment.

Consequently, predicted Government funding cuts in this sector will be detrimental to its ability to deliver a sound and effective infrastructure. It will also impact on the ability to

encourage behavioural change to public transport and to stem the chronic deterioration of the secondary roads network.

12.4 Water and Waste Water (Ranking: C)

ICE (NI) believes that although the Department of Regional Development (DRD) Water Service and its successor, Northern Ireland Water Ltd. (NIW), have effected major progress in compliance and have made significant plans for future investment, full compliance with the EU regulations for both water and waste water has yet to be achieved.

In addition, levels of customer service in NI do not yet match the levels enjoyed in the rest of the UK. The recent PR debacle during the severe weather conditions over Christmas 2010 illustrates that much improvement is still required.

Charging for water services continues to be debated within NI. ICE NI believes that if water and sewerage delivery is to improve, a secure charging mechanism must be established. Interestingly, as a result of an innovative procurement strategy over the past decade, 50% of potable water production in NI is now the responsibility of a public private partnership (PPP) concessionaire, under the "Alpha" project. Similarly, 30% of the waste water treatment is now the responsibility of a PPP concessionaire under the "Omega" project.

12.5 Waste (Ranking: C)

The solid waste management sector in NI is evolving to meet recycling targets and diversion of waste from landfill. Accordingly, the percentage of municipal solid waste going to landfill has reduced from 82% in 2004/05 to 68% in 2008/09. Similarly, recycling and composting for municipal solid waste has increased from 18% in 2004/05 to 32% in 2008/09. This has been mainly due to strong education programmes to encourage behavioural change, complemented by the widespread introduction of kerbside collection of recyclables, and kitchen and garden waste.

However, the lack of MBT (mechanical biological treatment) or ER (energy recovery) facilities to date in NI still means that there is an unsustainable reliance on landfill for residual wastes. The current land filling option would appear to be available in the short to medium term, but leaves NI non-compliant with EC Directives, with the consequent environmental and financial impacts.

Therefore, the need to deliver new infrastructure, namely MBT and ER, is driven by regulatory requirements and is most likely to be procured through private finance.

12.6 Flood Risk Management (Ranking: C)

In NI responsibility for flooding issues lies with several government departments: DARD Rivers Agency for fluvial flood emergency response, alleviation and defence; Northern Ireland Water for storm water runoff and out of sewer flooding; and DRD Roads Service for road drainage. Each of these authorities, as well as the "Blue Light" services and, more recently, the local councils, try to provide a co-ordinated emergency response to flooding events.

It is the view of ICE (NI) that a cross-sectoral approach is required. It is likely that the EU Floods Directive will drive the industry in this direction. Individual agencies and departments with responsibility must engage with this process if there is to be genuine improvement in flood risk management.

12.7 Context for this Report

Based on the findings from the ICE reports and the need for development of NI's infrastructure, a supporting framework that will reduce project costs and facilitate development and financing of such projects is required. The purpose of the current report is to outline the major barriers to infrastructure development in NI and to make recommendations on priority actions.

Main areas include:

- Cost of building land;
- Opportunities for improving public procurement;
- Planning consents and community engagement;
- Construction industry skills and training issues;
- Institutional arrangements for the development of infrastructure; and,
- Funding and financing mechanisms.

13 COST OF BUILDING LAND

13.1 Context

The price paid for land required for infrastructure in Northern Ireland (NI) is determined by market valuation, with the public sector guided by valuation assessed by Lands and Property Services (LPS). Negotiations can be protracted by the raised expectations of landowners, particularly evident in both the boom and bust market circumstances experienced in the last 10 years. There are no national agreements.

Disturbance and severance settlements can account for around 50% of land costs, which in recent years have been substantial. Overall, land costs as a proportion of the total cost of providing linear infrastructure are now expected to fall significantly as a consequence of reduced valuations.

13.2 Recommendation

In the difficult years that lie ahead for the NI economy, attention must be directed to capturing land value based on the experience of mainland Britain.

14 OPPORTUNITIES FOR IMPROVING PUBLIC PROCUREMENT

14.1 Introduction

In Northern Ireland (NI), public sector procurement of infrastructure is undertaken by the responsible Department's Agency (e.g., DRD Roads Service for highways, NI Water Ltd for potable water and waste water, Health Estates for hospitals, etc.). The Central Procurement Directorate (CPD) also procures, mostly buildings and other supplies, for those Government sectors that do not have procurement expertise (e.g., Department of Justices, Further and Higher Education, etc.). These bodies are known as Centres of Procurement Excellence (CoPEs) and there are seven of them in Northern Ireland:

1. CPD Supplies & Services Division
2. CPD Construction Division
3. Translink (Railway and Bus Transportation)
4. NI Housing Executive
5. Health Estates
6. NI Water Ltd.
7. Roads Service

14.2 Intelligent Clients

These CoPEs, such as Roads Service and NI Water, are regarded as intelligent clients primarily because they can call on in-house technical expertise. This is particularly important in major infrastructure to ensure appropriate scoping of a project and to provide accurate briefing. However, there is a concern that there could be a trend, similar to Great Britain, towards reliance on external consultants and accountants, focused on fixed price and budget control, to manage procurement procedures for departments. We believe that this would be a retrograde step. The importance of the Intelligent Client concept is essential for the delivery of successful infrastructure.

14.3 Challenges to the Procurement Process

In recent years in Northern Ireland there have been a number of challenges by contractors to the tendering process. This leads to frustration of the procurement process, often with legal advisers involved and delays in the delivery of the infrastructure. This results in unexpected additional costs. In order to overcome this growing trend, CoPEs need to be more thorough in the preparation of their tender documents and the procurement process. The industry also needs to address this issue and co-operate with client bodies to find ways of eradicating this costly trend.

14.4 The New Engineering Contract (NEC)

The adoption of the various forms of the New Engineering Contract (NEC) is now widespread in the public sector in NI and Great Britain. It encourages open book accounting and is a less adversarial approach to contracts. Its record for delivering projects on budget is superior to previous forms. The NEC offers different options as appropriate to any project. Option C, for example, is a Target Price Contract, which can offer an incentive for successful delivery. It can also adopt a pain/gain element when there is an identified risk apportionment.

14.5 Design and Construct

The NI public sector, in keeping with its counterparts in Britain, follows the HM Treasury Guidelines on procurement. This requires consideration of the following forms of contract for infrastructure projects:

- Design and Construct (D&C);
- PFI; and
- Prime Contractor.

Of these, the most widely used is the Design and Construct Form, although it is recommended that projects with cost estimates greater than £50m should be considered for PFI. The Prime Contractor form is rarely used except for substantial Ministry of Defence (MoD) projects.

Design and Construct does have the advantage, to the client,

of the contractor's involvement in the design, thus ensuring not only buildability, but also close scrutiny of the specification. However, the briefing and tender documentation needs to be thoroughly prepared because changes after the contract award can be costly.

Design and Construct procurement can be expensive for contractors because of the tendering team's commitment to design and methodology for pricing purposes. It is usual, therefore, for procurers to limit the number of tenderers to a maximum of five. This presumes that there has been a pre-qualification process, all in accordance with EU procurement regulations.

Early contractor involvement is also a useful initiative to advise on the buildability of a design and the appropriateness of the specification. This usually involves the adoption of a value engineering process to test the necessity of the client's requirements, but with a view to minimising the whole life cycle costs for the project.

14.6 PPP and PFIs

In NI, public private partnership/private finance initiatives (PPP/PFI) continue to evolve in various applications through roads, water projects, schools and hospitals. This form of procurement, or something similar, will continue to be used in the future because the Government will need the private sector to invest in infrastructure. The reputation and functioning of PFI needs, however, to improve to gain the public's confidence.

In our opinion, better management of change control and flexibility to build competition into significant changes that inevitably arise over the life of the project need to improve for PFIs.

Additionally, the cost of tendering for a PFI project is very significant and inevitably adds to the price of the project and subsequent projects for those not successful the first time. Every effort needs to be made by procurement bodies, such as CPD in NI, to try to streamline the procedures and minimise these wasteful costs.

14.7 Recommendations

- There are seven CoPEs in Northern Ireland, including CPD. This arrangement for prioritising projects should remain, although with a closer working relationship with the Strategic Investment Board NI (SIBNI). The Intelligent Clients should continue to co-ordinate their department's procurement of projects with CPD. However, this inevitably demands that CPD develops a world-class procurement advisory expertise in order to provide a much more consistent and effective tendering process across all of the CoPEs.
- The SIBNI, CoPEs and Government's CPD should work together to provide continuity of client side technical expertise and to address the costly trend of challenges to the procurement process.
- The NEC Form of Contract should be used as an appropriate means to administer infrastructure projects.
- Early contractor involvement and/or a value engineering process to ensure buildability of design and appropriate specification should be encouraged.

15 PLANNING CONSENTS AND COMMUNITY ENGAGEMENT

15.1 Major Infrastructure Planning Reform in the UK

Emerging findings from the UK Cost Review attribute higher costs in part to more stringent legal and planning requirements. Attempts to streamline procedures are fraught with contradiction as planning reforms also seek greater community participation.

On December 20, 2010, the UK Minister of State published the Community and Local Government Department's workplan on major infrastructure planning reform. Decisions on infrastructure of national importance will now be taken by democratically elected representatives and not by the Infrastructure Planning Commission (IPC), an unelected quango. The Localism Bill provides for the abolition of the IPC and the creation of a "major infrastructure planning unit" (MIPU) within the Planning Inspectorate.

The original recommendation to establish an independent infrastructure planning commission for England and Wales emerged from the 2006 Barker Review of Land Use Planning. The IPC was established on October 1, 2009, under the Planning Act 2008 to streamline the planning system for nationally significant infrastructure projects (NSIPs). The previous system was seen to lack the discipline of strict timetabling, compounded with overly complex procedures and overlapping regimes.

The coalition Government has now removed its independence, but as MIPU, the IPC remains in business and retains the main elements of the streamlined process. The role of the IPC is usefully set out in its website: http://infrastructure.independent.gov.uk/who-we-are/our-role/. The effectiveness of the MIPU remains to be seen.

15.2 Northern Ireland Planning Reforms

The view from the North is governed by the changes to planning processes in Northern Ireland associated with the dismantling of the Regional Planning Authority in 2011 in preparation for the transfer of planning functions to local authorities. While streamlining planning procedures was the primary concern of the construction and development sector, the main political debate about planning reform in Northern Ireland in recent years has been about community involvement.

The Planning Bill does not bring to Northern Ireland many of the community involvement initiatives being taken forward in other parts of the UK, although it does increase opportunities for the public to deal directly with locally elected representatives who will now have responsibility for most planning decisions.

It does appear that Northern Ireland is running behind Great Britain when it comes to community involvement in planning. It should be noted that while the planning system in Northern Ireland is broadly similar to that in Ireland, there are key differences. The local authority planners in the South have a greater range of executive powers and third parties have a right to initiate planning appeals in addition to applicants. Third party appeals act as a way in which individuals and communities engage with planning decisions and, as a consequence, other opportunities for participation are not as extensive as those currently available in Northern Ireland.

15.3 The Planning Bill 2010

On December 6, 2010, the Minister for the Environment in Northern Ireland introduced a Planning Bill to the Assembly, which was described as a key step in the reform of planning and local government. This had previously been announced the week before with the publication of a Local Government Reform Consultation Paper.

The Consultation Paper contains detailed arrangements for general transfer of powers in 2015. It proposes checks and balances in the spirit of responsible localism, an ethical

standards regime, power-sharing obligations and procedures for handling complaints. It also contains a commitment to pursue community planning through a statute-based community planning process. It is not clear how this will interact with the statutory planning system.

Under the Planning Bill each Council will have to agree a 'Statement of Community Involvement' in plan-making. Plans are to be two-tiered: plan strategies (which may cover more than one council) and local policy plans. On the control side the main innovation is the distinction between major applications (either defined as such in law or decided on at the discretion of the Department) and local developments where decision making rests firmly with the councils. Major cases involve obligatory pre-application community consultation under a procedure that must commence at least three months ahead of submission.

15.4 Development Plans

Spatial planning

The concept of spatial planning has moved the emphasis away from planning as simply regulatory practice narrowly focused on land use, to planning as an activity that is integrated with other local government services and is focused on delivery.

The Planning Bill 2010 sets out the draft legislative framework for new and revised planning procedures to facilitate spatial planning and to bring Northern Ireland into line with other parts of the UK.

A key to the success of a new spatial planning system will be its ability to oversee, direct and often lead the implementation process.

These changes will match reform of the planning system in Ireland that is underway and will also place spatial planning as a core principle in the planning system.

Community plans

The statutory Land Use Development Plan is now seen in Great Britain as just one of the means at the disposal of a local authority to deliver its 'community strategy' or 'community plan'.

Parallel reform proposals are likely to provide district councils in Northern Ireland with a similar power of community initiative underpinned by a statutory basis for community planning.

Legislation is expected to secure long-term commitment to effective partnership working with communities and between local authorities and other key bodies and organisations.

The reform proposals are likely to include the introduction of a new ethical standards regime.

15.5 Development Control

Planning applications

Many of the provisions contained in the Planning Bill consolidate those in existing legislation, but have been re-crafted to facilitate the role of district councils.

New classifications for major and local development have been established. The concept is simple. It amounts to a two-tier planning system with major developments, proposals of regional significance, being dealt with by the Department of the Environment. Local developments will normally be handled by the local authority. The DoE retains important powers of sanction, call-in and action in default.

This retention of the capacity to plan at the level of the region – the transfer of local development planning powers to councils without abandoning the capacity to regionally plan and regulate matters of regional significance – is important. There is concern in England about the dismantling of regional planning under the Localism Bill (see below).

With major applications there is a responsibility for developers to consult with the community at least 12 weeks in advance of lodging an application and to prepare a report that must be submitted with the application.

15.6 Community Involvement

Practice in Great Britain

Effective community involvement is a critical element in any planning system and over the past decades there have been many attempts to improve this aspect of the planning system. This has included statutory defined opportunities for a whole range of stakeholders to make representations on development plans and planning applications.

Over recent years there has also been increasing concern over delays caused by the planning system, which can sometimes be accentuated as a result of participatory procedures.

Third party appeals

An important feature of planning law in Ireland is that it confers rights of appeal on third parties that allow other parties other than the applicant to initiate an appeal on a planning

decision. This has been a long-standing feature of the planning system in Ireland, where anyone who has made an observation on the original planning application can initiate an appeal on the outcome of a planning application, including those awarded permission.

It is currently the view in Northern Ireland that further consideration of third party appeals should be deferred until the full transfer of functions to local government have settled down and the planning system is working effectively.

The Department of the Environment concluded that "there does not appear to be any immediate compelling reason to proceed in the public interest towards making provision for third party appeals in the current round of planning reform proposals".

The system of third party appeals has been operating successfully in Ireland and has been shown to make no significant contribution to the length of time it takes to reach a final decision on a planning application. Local planning authority officials are less inclined to agonise over decisions. For this reason, and because of the strict timetabling required by law, the planning system in Ireland has not suffered the same extent of planning delay that the development industry in the UK (and in Northern Ireland especially) was so concerned about at the height of the property boom.

There are a number of models of third party appeals. These range from a relatively unrestricted nature (such as those available in Ireland) to more limited rights of appeal, where it may be restricted to particular cases. Appeals could be restricted to where a decision departs from a development plan or to those dealing with planning permission for district councils themselves. Alternatively, they could extend the right only to particular parties, for example, statutory agencies or advocacy organisations such as community groups or environmental NGOs.

15.7 Recommendations

- The performance of the Major Infrastructure Planning Unit in England, formerly the Infrastructure Planning Commission, should be monitored. It may provide a model for progressing major infrastructure through the planning system more efficiently, giving it the priority it deserves.
- The two-tier system currently proposed for Northern Ireland has a great deal to commend it. However, there is a need to rigorously streamline the planning approval systems to minimise the time required by its processes.

  The significant changes to planning systems in Great Britain where development plans are seen as just one of the means of delivering community planning integrated across local government services and focused on delivery provide an important example.
- There are significant procedural differences between planning systems operating north and south of the border. These systems should be the subject of comparative study with a view to alignment, particularly for cross-border linear and strategic infrastructure projects.
- The discipline of procedural timetabling in Ireland is an important consideration that should inform discussion of introducing third party appeals in Northern Ireland.

16 INSTITUTIONAL ARRANGEMENTS FOR THE DEVELOPMENT OF INFRASTRUCTURE

16.1 The Strategic Investment Board Ltd., Northern Ireland

The Strategic Investment Board Ltd (SIB) was established in April 2003. It currently employs 37 people. Through the SIB the Executive has the mechanisms and structures required to enable Ministers in the devolved Government to co-ordinate work across departments in order to deliver the new schools, hospitals, roads and other civic infrastructure the region requires for the 21st century.

The SIB has a number of responsibilities:

- It drafts the Investment Strategy for Northern Ireland (ISNI) – the rolling ten-year plan that describes the public infrastructure Government intends to deliver.
- It assists the public sector to deliver large infrastructure projects and programmes of investment – working with departments to help accelerate delivery and obtain better value for the taxpayer by deploying expert advisers into key project management and advisory roles.
- It provides a co-ordinating resource to Government on improved asset management, rolling out a public sector asset database and supporting departments in making effective and efficient use of their property assets.
- It also seeks to encourage reform in the systems and processes for infrastructure delivery and helps build public sector capability by encouraging the development of specialist skills and the use of innovative approaches to procurement.

16.2 The ISNI Information Portal

One of the SIB's roles is to communicate central government plans to a wide variety of stakeholders, contractors and the general public. To help it achieve this, the SIB has developed the ISNI Information Portal (www.isni.gov.uk) – a website providing free access to information on all current and planned capital investment in Northern Ireland.

The deployment of the ISNI Information Portal leads to improved communication between Government and contractors and has come at a critical time for the construction industry and associated service providers. By providing up-to-date information on all projects and tender opportunities in advance of procurement, firms are better placed to respond and plan ahead.

To ensure that the ISNI Portal is as accurate as possible at all times, the website is supported by a secure database that allows civil servants across Northern Ireland to log in and update details relating to their projects. As a result, when members of the public look at the Portal they are seeing the latest information informed by those responsible for actual delivery.

The ISNI Information Portal provides many unique features including:

- Search functionality allowing users to produce summary reports based on criteria that suit their individual needs. The ability to export summary reports to Excel formats for further analysis;
- Detailed project information, including project photography and links to related procurements (see **Appendix 3**);
- Detailed procurement information including the expected (or actual) timeline from pre-procurement through to contract completion (see **Appendix 3**);
- The ability for users to leave feedback or ask questions on specific projects/procurements. All feedback/questions are sent directly to the individual closest to the detail; and,
- An interactive map allowing users to drill down to street level and view individual projects and project-related information on a map (see **Appendix 3).**

17 CONSTRUCTION INDUSTRY SKILLS AND TRAINING ISSUES

17.1 Present Position

According to figures from the Construction Employers Federation, the construction industry in Northern Ireland has an annual total output of £3.4 billion, employs 85,000 people and makes a contribution of 12% to Northern Ireland's GVA. Despite the downturn in construction activity, it therefore remains one of the largest sectors in the Northern Ireland economy.

Official figures published in December 2010 indicate the following points:

1. There are 11,445 construction-related companies operating in Northern Ireland, accounting for 16.7% of the total number of companies. This is second only to those companies in the farming, forestry and fishing sector (23.5% of all Northern Ireland companies).
2. In terms of scale, 99.1% of construction firms employ fewer than 50 staff (78.6% with fewer than five). Less than 1% of companies (approximately six out of 11,445) employ more than 250 staff. The Northern Ireland economy is dominated by micro-enterprises. This is particularly prevalent in the construction industry with a very high number of sole traders or very small firms, which is severely limiting on apprenticeship and training opportunities or capacity.

17.2 Sub-contractors and Capacity Issues

In their report Infrastructure UK was critical of the construction industry's widespread use of sub-contractors as an inefficient use of resources and skills. In practice this has evolved as an industry norm because it is an effective way to counter the risks associated with the wide fluctuations in investment in infrastructure. If there was longer term planning and programming of projects, then contractors would be more confident of developing in-house trades rather than employing sub-contractors.

In leaner times companies have survived either by diversifying or by seeking work outside Northern Ireland. A number of firms have successfully achieved this in recent years, particularly in Scotland and England. However, this success brings with it the risk of export and possible loss of their skilled and trained workforce to these markets.

17.3 Recommendation

Eliminate stop/start programming of infrastructure in order to encourage contractors to develop their own in-house trade expertise by means of training and apprenticeships.

18 FUNDING AND FINANCING MECHANISMS

18.1 Introduction

In recent years, governments across the world have faced increasing demands from the public to invest in public infrastructure, especially utilities, for a variety of reasons: growing populations, ageing infrastructure, rapid rise in consumers' expectations, legal compliance, etc. For many, these calls to invest have proved difficult to meet from traditional sources of public funds and so models have emerged that look beyond the domestic tax base to help finance rapid modernisation.

This can be achieved in four ways:

Option 1 – Borrowing

A sovereign government can borrow from the international money markets to the extent and at a cost that reflects its credit rating in order to finance its investment programme. This borrowing adds directly to the national debt.

Option 2 – Equity Interest

The equity interest (100% or less) that the Government holds in public sector utilities/assets can be 'sold off' to private investors, who operate the business in normal commercial ways. The new owners may bring their own funds (equity) or can borrow the finance necessary to effect upgrades to the infrastructure from banks or other capital providers (e.g., investment funds). This finance is funded (repaid) from charges levied on users and so does not draw on Government funds. Because many former public utilities are what economists call "natural monopolies", a sell-off is normally undertaken at the same time as the creation of an industry regulator. The regulator's role is to protect the public interest and prevent the new owners from exploiting a monopolistic position to the detriment of consumers. Examples include British Telecom, British Gas, Rolls Royce, British Airways, Associated British Ports, and various English water utility companies.

Option 3 – Part Privatisation

Part of the equity can be sold (part-privatisation), which is similar to the above. The extent of retained public interest will determine the accounting treatment of any borrowings – if the Government retains a controlling interest then normally the markets will treat borrowing as additional to the national debt. Examples include DERA, Deutsche Telekom, Aer Lingus.

Option 4 – Mutualisation

The utility can be 'mutualised'. Under this arrangement, the assets of the former public utility are vested into a corporate vehicle that is owned and operated by trustees acting in the public interest. These trustees are not shareholders. The new entity otherwise behaves like a private company and is subject to regulation. The difference is that any profits made are re-invested in the business (e.g., to accelerate the pace of investment in new plant) or returned to customers in the form of lower charges in a future period, and are not distributed as dividends to shareholders as in a normal company. As mutual entities are not controlled by Government, their borrowing is off the Government's books and so is additional to normal government spending. Examples include Mutual Energy, Glas Cymru/Welsh Water.

The principal advantage of an equity sale is that the new equity holders actively 'hunt out' efficiencies and can act as a financial shock absorber when unexpected events occur.

Mutual models have the attraction that the assets are still nominally in the public realm – no sell-off has occurred – and this is an important political consideration.

Because of their perceived special status, mutualised utilities are seen as lower risk investments. For this reason, their weighted costs of capital can be lower than in the case of similar privatised commercial utilities. For example, Mutual Energy is an example of a mutual company that acquires and holds important energy infrastructure assets for the benefit of the energy consumers of Northern Ireland. **Table 5** shows the

scale of the investments that Mutual Energy has taken forward using bond finance in recent years.

Mutual Energy estimates that to date, this has resulted in cost of capital savings in the electricity and gas business of £79m and delivered cumulative efficiency savings of £6.7m. The relative performance (based on investments in Northern Ireland) of the equity model and Mutual Energy is shown in the table below (**Table 6**).

For avoidance of doubt, Option 1 above is not open to the NI Executive as UK national borrowing is undertaken and controlled by HM Treasury. When the Executive does borrow, this must be done under the terms of the existing Reinvestment & Reform Initiative (RRI). Under RRI, the Executive already borrows around £200m per annum from the National Loans Fund to support its infrastructure programmes in ISNI.

Options 2 and 3 do present challenges – mainly the perception of 'selling the family silver' and the anticipation of a negative public reaction to the prospect of a private company charging users for 'public' services currently received free at the point of demand (i.e. paid for from the general tax base). However, Northern Ireland does have precedent for using options 2 and 3. Belfast International Airport was sold in the 1990s and is now successfully owned and operated as a private company.

18.2 Finance vs Funding

There is an important distinction to be made between finance and funding in relation to a debate on how to accelerate investment in our infrastructure.

Finance refers to the initial money required to bring the new/upgraded asset into being. It is similar in concept to the mortgage raised to purchase a new home.

Funding refers to the money required every month/year to service the finance borrowed at the outset.

In Northern Ireland and elsewhere, capital markets have taken a very keen interest in providing finance for infrastructure, especially using such contractual mechanisms as PFI over the last 15 years. Under PFI, private investors have put in some of their own money (equity, typically 5-10% of the total money required) and borrowed the remainder from the commercial banks on 20- to 25-year tenures (debt finance). So getting the up-front finance has not been an issue. Now it is increasingly difficult and expensive to find private debt capital for investment as the banks struggle to rebuild their balance sheets. Some relief has come in the form of the European Investment Bank (EIB), which will finance up to 50%, but the EIB's resources are now pulled towards the newer EU countries. The balance of commercial lending often requires a consortia of banks and the tenures offered are shorter than before.

Table 5: Scale of Mutual Energy investments in recent years.

Company	Activity	Bond	Rate
Moyle Interconnector	500MW DC link Scotland to NI	£135m	2.94%
Premier Transmission	Scotland to Northern Ireland gas pipeline	£107m	2.46%
Belfast Gas Transmission	Phoenix transmission gas pipeline, Island Magee to Belfast	£109m	2.21%

Source: Mutual Energy.

Table 6: Performance of Mutual Energy equity model.

	Equity	Mutual
Efficiency delivered to customers	Electricity: 10% reduction over five years	Electricity: 16% reduction over four years to 2009/10
	Gas: 1% efficiency per annum	Gas: 12% reduction over four years to 2009/10
Weighted Average Cost of Capital (WACC) to customers	Electricity transmission: 4.5% Gas distribution: 7.5%	Electricity: 3.2% Gas: 2.4%

Source: Mutual Energy.

Bond financing is also an option that has been used in Northern Ireland for roads and in the context of mutualised enterprises. With this method, the money is raised directly in the capital markets from investors who buy a bond bearing a fixed rate of interest. These investors are typically investment funds, pension funds, etc. Unlike bank debt, the money is only repayable after the bond period ends (e.g., 20 years). This option is, however, only open to larger amounts and larger projects.

Going forward, national/regional investment plans will benefit from an aggregator. This would constitute a body (perhaps an 'infra bank') who can act as intermediary between a multitude of projects/departments and international institutional finance houses to deal effectively with one borrower and achieve low interest/transaction costs. It is for this reason that interest in infra banks is now high with the most recent one being established by the US State of Virginia.

The problem of how to service such borrowing can be solved in one of two ways:

1. charging users directly; or
2. making the payments from the Government's resource budget.

The first is simple (for example Ireland's toll roads), but is politically charged in regions where this approach has not been used before. The second brings two problems:

- If the Government pays, then the whole borrowing may be seen (from a technical accounting perspective) by the Office of Government Statistics as national borrowing by the back door. In this case, the HMT will take same amount off the Northern Ireland funding block. As a result, the Executive will not get any additional funds, while at the same time having to deal with the political reaction to charging.
- Making payments from the resource budget (used to pay salaries and wages in the public sector) may just transfer the problem from the Executive's capital budget onto its resource budget.

It is vital, therefore, that new projects are carefully considered to ensure that they contribute to a more productive public sector and increase operational efficiency. This could mean that projects would be self-financing and that savings from resource budgets could be used to fund the investment. Poorly considered projects would merely add to the cost base.

As a result of the above, the SIB is now advising all departments to:

1. Develop Strategic Estates Planning models that are capable of simulating accurately the likely impact on overall costs and performance of investments in individual schemes; and
2. Only approve individual business cases if they are consistent with the direction of Strategic Estates planning models agreed.

In this way, the Executive's capital budget will be focused to deliver real productivity gain (either lowering costs, or delivering more for the same cost).

18.3 The Capture of Development Land Value

Relative to the rest of UK, Northern Ireland has shown little interest in capturing the land value created as a consequence of providing service infrastructure and regulating development through statutory plans. For the last 25 years in Great Britain, local authorities have made use of planning powers to extract substantial contributions from developers in cash or in kind for the provision of infrastructure.

18.4 Planning Agreements

A planning agreement (known in Great Britain as a planning obligation or Section 106 agreement) is a well-established means of acquiring developer contribution to the cost of related infrastructure. Policy dictates that contributions in cash or in kind must not exceed what can be reasonably related in scale and nature to the development in question. The English courts, however, have determined that the link to the development needs to be no more than tenuous for it to be a material consideration to which weight can lawfully be given. Planning agreements are rarely used in Northern Ireland compared to other jurisdictions. Elsewhere in the UK local planning authorities systematically negotiate planning obligations to gather contribution to local infrastructure (such as water supply, transport, schools, health centres, flood defences, open spaces, etc.) according to the size of new development being undertaken. In the Republic of Ireland developers of major housing schemes are obliged to provide a proportion of affordable housing.

18.5 Development Tariffs

Strategic tariffs on development have already been used in a number of areas in England to provide a viable income stream to support infrastructure delivery.

Tariff-based approaches have a number of advantages over the current system of negotiating planning obligations scheme by scheme. It is a tax on development, but one that has the potential to provide certainty and transparency to developers, raising contributions from a broader range of developers. It is argued that a tariff scheme would speed up the planning process, reducing the need for negotiation and giving local residents increased confidence in the positive impacts of development.

For a tariff scheme to be fair, however, it has to be based on a proper analysis of delivery cost of infrastructure. The costs have to be calculated in direct reference to development proposals in an adopted development plan and the money raised has to be hypothecated, in other words, pledged to be used for specified purposes.

Under a tariff scheme, local authorities must set out a standard charging schedule in their statutory development plan and use the income to help meet the infrastructure requirements of the area. The income stream can also serve as a powerful lever for long term borrowing for investment in infrastructure. A tariff that is related to local spending needs on infrastructure can recycle the funding from local land value uplift and help to meet the infrastructure burden, which, in turn, helps to enhance conditions that encourage economic growth.

18.6 Community Infrastructure Levy (CIL)

The Community Infrastructure Levy (CIL) is just such a statutory tool that enables English councils to establish what it requires by way of developer contributions for local infrastructure. It was legislated for in 2008.

As stated above, the sums realised are to be spent on infrastructure (e.g., Crossrail funding in London). The primary intention is that the Levy should fund infrastructure to meet the needs of future development provided for in the Development Plan rather than to remedy existing deficiencies.

The authorities entitled to charge the Levy (those who prepare Development Plans) are to provide a draft charging schedule, which is to exist outside of, but alongside, the Development Plan.

The charging schedule is intended to set out amounts for different types of development, being sums to be levied on a square foot basis. Payment is to be made when development commences.

The UK coalition Government proposes to augment CIL, with local development tariffs to improve local flexibility.

18.7 Tax Increment Financing

Tax Increment Financing (TIF) is a means of subsidising redevelopment and community improvement projects in distressed or underdeveloped areas. It is a public financing method for areas where development might not otherwise occur.

In many countries (notably the United States) TIF is used to finance public infrastructure, land acquisition, demolition, utilities and planning costs and other improvements. It creates funding for public projects that may otherwise be unaffordable to localities, by borrowing against future property tax revenues.

The UK coalition Government has decided that local authorities in England should be granted new TIF borrowing powers to drive local investment and economic growth. The intention is that local authorities should use that borrowing to fund infrastructure projects needed to support locally driven economic development and growth.

18.8 Land Auctions

Another measure that could impact hugely on the cost of building land as announced in the March 2011 budget is the intention to experiment with local land auctions. The process under consideration has its provenance in Scandinavia. The process involves landowners submitting sealed bid letters stating the price at which they would sell their land to the council. The council then buys the sites it wants developed, grants planning permission and auctions them off to developers, raising millions in the process.

18.9 Capturing Land Value

Whether Ireland (North and South) ought to embrace a CIL or some other method of capturing development land value is a matter for debate. The idea of the development value created by the actions of the planning authority being shared between developers and the community in proportion to their contribution is attractive, as is the

notion of a levy to fund infrastructure required for future development. The means of doing so, however, is not straightforward. It is complicated, resource-intensive and procedurally sophisticated. It also adds another layer of complexity to already formidable regulatory systems and convoluted procedures for development plan preparation. Nevertheless, as stated above, in the difficult years that lie ahead for the NI economy, attention must be directed to capturing land value based on the experience in mainland Britain.

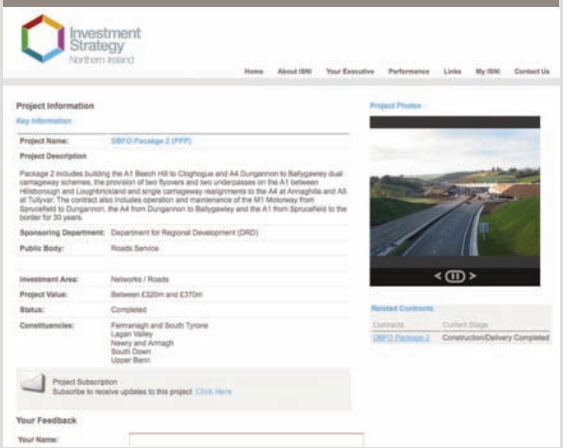
18.10 Recommendation

In view of the intense pressures on public finances and the need to improve the quality of infrastructure, the overall objective must be to complement public funding on infrastructure with an equivalent amount of private funding using a suitable combination of the funding and financing mechanisms outlined above.

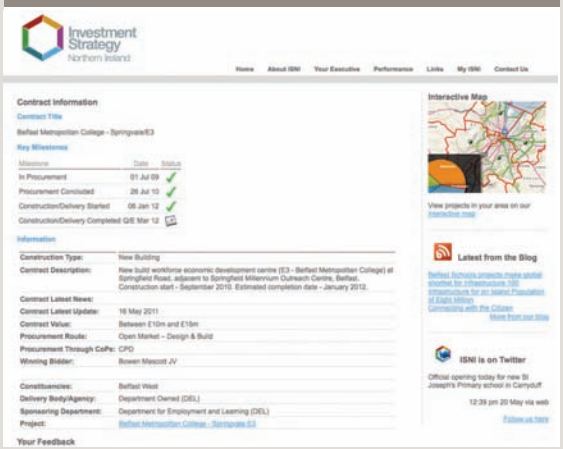
APPENDIX 3 – EXAMPLES OF INFORMATION PROVIDED BY THE STRATEGIC INVESTMENT BOARD, NORTHERN IRELAND

Information portal to keep the public and external stakeholders informed of delivery and future plans.

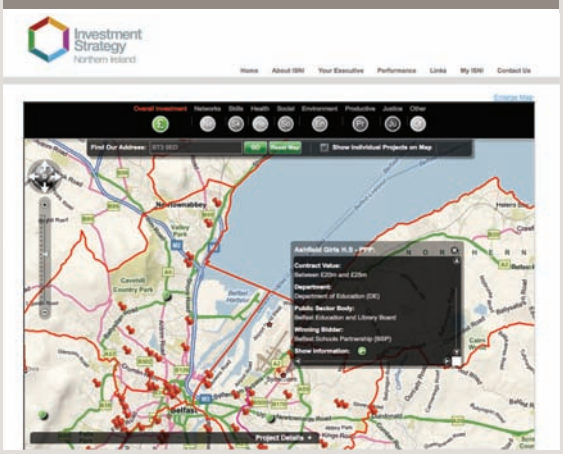
Project Information



Procurement Information



Interactive Map



LIST OF ABBREVIATIONS AND ACRONYMS

CER	Commission for Energy Regulation (I)
CIL	Community Infrastructure Levy (UK)
COPE	Centres of Procurement Excellence (NI)
CPD	Central Procurement Directorate (NI)
DC	Direct Current (Electricity)
DCENR	Department of Communications, Energy & Natural Resources (I)
DECLG	Department of the Environment, Community & Local Government (I)
DRDNI	Department of Regional Development (NI)
ECDG	European Commission Directorates General
EIB	European Investment Bank
EI	Engineers Ireland
EPA	Environmental Protection Agency (I)
EU	European Union
GB	Great Britain
GDP	Gross Domestic Product
GNP	Gross National Product
GVA	Gross Value Added
HMT	Her Majesty's Treasury (UK)
HSA	Health & Safety Authority (I)
I	Ireland
ICE	Institution of Civil Engineers (UK)
IMD	International Institute of Management Development (Lausanne, Switzerland)
IMF	International Monetary Fund
IPC	Infrastructure Planning Commission (UK)
IPPC	Integrated Pollution Prevention & Control (licence) (I)
ISNI	Investment Strategy for Northern Ireland
IW	Irish Water (I)
km	Kilometre
KTC	Key Transport Corridor (NI)
MIPU	Major Infrastructure Planning Unit (UK)
MW	Megawatt
NDP	National Development Plan (I)
NI	Northern Ireland
NIW	Northern Ireland Water
NRA	National Roads Authority (I)
OECD	Organisation for Economic Co-operation & Development
PFI	Private Finance Initiative (NI)
PPP	Public Private Partnership (I)
RPA	Railway Procurement Agency (I)
RRI	Reinvestment & Reform Initiative (UK)
RTS	Regional Transportation Strategy
SIBNI	Strategic Investment Board Ltd., Northern Ireland
TIF	Tax Increment Financing (UK)
UK	United Kingdom
WEF	World Economic Forum

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