

The background is a vibrant blue with a complex, layered design. It features several overlapping, wavy, ribbon-like shapes that create a sense of movement and depth. Overlaid on these is a grid of semi-transparent diamond shapes, which together form a subtle, geometric pattern. The overall effect is modern and dynamic.

Infrastructure

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Article 18: Strategies for Telecommunications Infrastructure Development in Northern Ireland

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INTRODUCTION

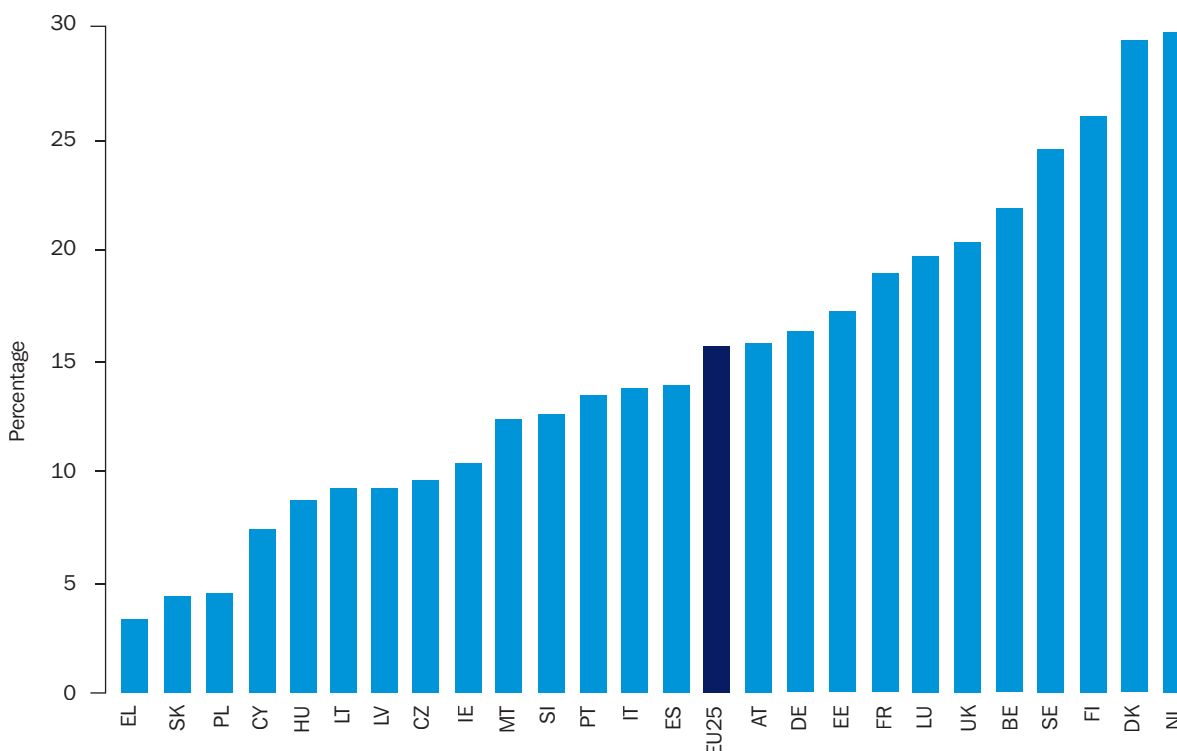
The growth of broadband has exceeded expectations. At the start of 2007, BT announced¹ that it reached its 10 millionth customer some 12 months ahead of its initial predictions. It is estimated that there are some 13 million broadband accounts in the UK alone and more locally the number of broadband accounts has grown from 60,000 in 2004 to over 260,000 in 2006. According to research undertaken by NISRA on behalf of DETI across NI some 42% of households have a broadband connection. The following chart (Fig. 1) shows the penetration rate for broadband lines measured as the total number of broadband lines divided by the total population. The broadband penetration rate varies

significantly across Member States ranging from 3.3% in Greece to 29.8% in the Netherlands². Applying this approach to NI reveals that the broadband penetration rate would be 17.8% which positions the region somewhere between Estonia and France.

Moreover we are observing significant shifts in the way communications products are sold to customers. At the domestic and residential level many companies are offering converged services of broadband, telephone and mobile. Media companies³ are now moving into the telecommunications arena, and telecommunications companies are merging to provide what are termed quad-play services (TV, telephone, broadband and mobile)⁴.

EU Broadband penetration rate, 1 October 2006

Figure 1



Source: European Commission, 2007

The telecommunications companies continue to focus on the SME market as well offering various packages to assist them control landline and mobile phone costs.

Whilst these issues are important for many existing SMEs to compete effectively, the availability of world class telecommunications services provides new opportunities for new businesses.

In this article we explore trends in the telecommunications market and the likely impact for NI. Some of the options that should be considered for the development of the telecommunications infrastructure to ensure that NI can maximise opportunities to trade are also discussed. Consideration is also given to what is likely to be required for new businesses operating in an online high bandwidth marketplace.

NI ADVANTAGE

Currently NI benefits from having a world class telecommunications infrastructure. A strategic investment in core infrastructure in the 1980's, and continued investment by the telecommunications industry, has meant that many parts of the region are well served by telecommunications services. An article in the previous edition of the bulletin indicated the infrastructure available⁵. NI's telecommunications infrastructure is one of its key strengths and many local companies such as Northbrook and Singularity use it to support operations in North America and India. Likewise multinational companies such as Nortel, Bombardier, Seagate and Citigroup take advantage of the good communications to run business units to support their wider group objectives.

The NI Assembly recognised the importance telecommunications can make to the economy of

the region and Government⁶ set out its intention to "ensure that access to e-business opportunities is available to all areas and all sections of our community".

To achieve this objective DETI entered into a contract with BT for the delivery of broadband services to 100% of NI⁷ which was achieved in December 2005⁸ making NI the first region in Europe where availability was so pervasive.

CONTRIBUTION OF TELECOMMUNICATIONS TO ECONOMIES

The contribution of telecommunications to economies is difficult to measure. On the one hand telecoms services are merely an enabler to assist business to perform its task more efficiently and effectively and on the other they are the *raison d'être* for some companies' business model e.g. iTunes, Amazon. More locally, companies such as Performancealloys.com in Antrim and Chain Reaction Cycles based in Ballyclare have taken advantage of good communications to run successful specialist niche e-retailing operations.

In the year to end December 2003, UK customers spent over £13 billion on fixed line telephony and the number of fixed exchange lines stands at 34.6 million⁹. The UK has also one of the most competitive mobile phone markets in the world and there are some 65.5 million mobile phone users in the UK.

Total retail revenue in the UK communications sector reached £50 billion in 2005¹⁰. Business activity that is largely dependent on the radio spectrum contributes £37 billion, or 3 per cent, to the UK's GDP. This means that uses of spectrum account for nearly one pound in every 30 generated by the UK economy¹¹.

The European Commission¹² estimates that revenue from online content will reach €8.3 billion by 2010 in Europe, a growth of over 400% in five years. It adds that for the most advanced sectors, online content will represent a significant share of total revenue: about 20% for music and 33% for video games. One of the drivers of this growth has been the spread of broadband, the roll-out of advanced mobile networks, and the massive adoption of digital devices. It suggests that mass market online content distribution is becoming a reality, creating unique opportunities for Europe.

Whereas the dominant global industries of the past focused on manufacturing industry, the key corporations today are increasingly active in the fields of communications, information, entertainment, leisure, science and technology. The 1998 White Paper 'Our Competitive Future' showed that knowledge, creativity and skills were changing the way that firms competed and the sources of comparative advantage between nations. It defined the knowledge driven economy as 'one in which the generation and exploitation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge: it is also about the more effective use and exploitation of all types of knowledge in all manner of economic activity.'

OPERATING ENVIRONMENT

The UK has one of the most open and competitive telecommunications environments in the world. Its liberal telecoms regime has provided consumers with access to leading-edge technology and has attracted the majority of telecommunications operators, service providers and manufacturers.

Over the last two decades the Government has opened up the market to competition, moving away

from the dominance of British Telecom (BT) to new fixed and mobile operators.

A further substantial step towards full deregulation took place in July 2003 with the Communications Act. This Act moves the UK away from a licence-based system to one where companies are operating under a "general conditions of entitlement" regime. These general conditions constitute a set of rules that operators are obliged to comply with. This was as a result of the UK's implementation of the new EU communications regime.

Prior to July 2003 any company operating in the UK had to do so under the appropriate telecommunications licence. That process required most companies to apply to the Department of Trade and Industry (DTI) for a licence before being able to operate and supply telecommunications services to consumers which was time consuming. This was replaced by a general authorisation regime. The main benefit is that the market can adapt to provide the appropriate telecommunications goods and services to the market thus the barriers to entry and time to market for entrepreneurs are reduced.

UK CONTEXT

Many public policy makers believe that telecommunications infrastructures contribute to the wider economic growth. Already there have been several interventions into the market to provide higher bandwidth services. These have been based on a number of rationales such as market failure, equity and social inclusion objectives, as well as regional competitiveness. However such intervention risks distorting competition which could duplicate private sector investment or deter the private sector investing over the longer term. Such distortions should be avoided.

Currently many economies believe that the market is best placed to assess the most efficient outcomes for the supply of goods and services. Consequently the market will react to any new or improved information and adapt its production decisions accordingly.

MARKET FAILURE

When looking at telecommunications markets it may be the case that specific telecommunications deployment may only occur to specific areas. A view may be taken that this is market failure. Some suggest that in the strict economic sense this is not strictly market failure just that the cost of delivering a particular telecommunications service exceeds the price customers are prepared to pay for it. Suppliers often argue that such investment is not efficient and that the return on investment is not within acceptable timelines.

One test for market failure in the provision of broadband services is where one provider has sufficient market power such that it restricts or limits output in order to maintain or increase prices in such a way to increase its profits. In this instance it is anticipated that the telecommunications regulator would step in and reduce the barriers for entry to competitors through some mechanism that permits them access to infrastructure. The regulator may even try to predict this type of failure through the implementation of ex ante regulation.

Most regulators currently adopt a national perspective to telecommunications regulation and regions often successfully argue that while the provision of access to infrastructure is one way to improve supply of services it may only occur in certain parts of the country. Consequently care should be taken to minimise any regional variations that could emerge. Separation of a region will mean that it would not benefit from wider national

behaviours as the suppliers to the wider national market may regard the regional market as different. Experience from other sectors such as the retail sector in NI would suggest that anything that differentiates a market from national norms may reduce the willingness of investors to enter a regional market.

DISTRIBUTIONAL POLICIES

Even where the market delivers services efficiently it may be decided by policy makers to intervene to address distributional concerns. This encompasses both social equality and social inclusion. To assess distributional concerns two tests must be applied. The first is a comparative test where an assessment is made to decide if as a result of the intervention services that are currently widely available across the country will become available to the region. The second is a commercial test where even if there was a sufficient demand for services an assessment should be made as to whether the commercial sector would ever make the necessary investment to enable it to provide the services to the region. If the answer to the first test is yes and the second test is no then there may be a case where the market will not deliver some services to customers in the region and further investigation is required.

INCREASING COMPETITIVENESS

Many regional authorities have as one of their objectives to promote economic development in the region and increase the competitiveness of the region. This can be achieved through the early or strategic investment in infrastructure. Indeed many EU initiatives in NI have been based on this approach.

The benefits of making investment in infrastructure including telecommunications introduces a number of risks which need to be considered including

distorting competition; deployment of technology that becomes obsolete; duplicating investment; introducing other transient benefits; and not standing up to a public value test. Each of these is considered further below.

Public schemes aimed at improving competitiveness of a region may risk distorting competition more than schemes aimed at achieving distributional objectives. It may be the case that the market may decide eventually at a future time to commercially deploy suitable infrastructure. The scheme could therefore distort incentives for future efficient investment by the market. Of course a decision has to be made as to what that future time is. Clearly if the infrastructure was to be deployed in 2-3 years then the case for the scheme is weaker than if, based on the information available, the infrastructure were to be deployed in 8-10 years.

Investing in advance of the market also increases the risk of technological obsolescence, where the public sector scheme may choose to deploy a specific technology which is superseded by later market led developments

Schemes to increase regional competitiveness in the short term may result in infrastructure investment that would anyway have been made by the market in due course, or act as a substitute for existing broadband infrastructures. In both cases, public intervention may not result in the most efficient outcome. Avoiding this situation requires a good understanding of how demand for higher bandwidth services may differ from existing broadband services, and where the market is and is not likely to deploy infrastructure. Both of these are relatively difficult to assess in advance especially as much of the information required to make these decisions is based on data taken from a national or international perspective.

Competitive benefits achieved from the acceleration of higher speed network in a particular area may be transient. It may be the case that subsequent commercial or public sector deployments in broadband infrastructure in other regions will erode the competitive advantage gained from the scheme.

COMPLIMENTARY INITIATIVES

In the final risk assessment if the scheme delivers services that are not widely available elsewhere in the UK, demand by consumers or businesses for the new services is likely to be hard to determine. Consequently one usually observes other support schemes that seek to promote these services.

For example Invest NI (the regional economic development agency for NI) is seeking to develop ICT skills proactively within NI business. The E-process Initiative has been designed to encourage and develop the sophistication of ICT within small and medium sized enterprises. It is one of a range of services from Invest NI's eBusiness team. The initiative achieves this by identifying ICT improvements within Invest NI's client companies which can be exploited to improve competitiveness and increase productivity. Having identified the improvements the eBusiness team can offer practical assistance in the use of IT that improves the capability of businesses to operate more effectively and remain competitive¹³.

INTERNATIONAL PERSPECTIVE

As mentioned previously the information available may be from an international perspective and overseas demand for these types of service is not always a good indicator of likely demand in the UK. Similarly, it may be hard to determine the level of interest from the providers of new applications that the new infrastructure may enable. In the absence of proven demand from customers or application

providers, it is more likely that the investment may not be efficient.

All of these risks can be mitigated to some degree by ensuring that any intervention is targeted at a specific region or set of customers. The outcomes and impacts of such schemes are easier to assess and manage than larger, more general interventions.

STRATEGIES FROM OTHER AREAS

It is helpful to understand the perspectives taken by other regions in seeking to address telecommunications infrastructure matters. This article considers schemes from several areas of the world.

ROI

The Irish government decided to develop a series of Metropolitan Area Networks (MANs) to enable telecommunications companies to provide cheap 'always-on' high-speed access to the Internet in towns and cities across Ireland. These MANs were viewed as a vital tool for industry and business to be efficient and competitive. It was also envisaged that the MANs would be invaluable for educational institutes, health and research bodies and private consumers. The MANs would facilitate new entrants, new services and more competition for broadband throughout the ROI.

The MANs are publicly owned and allow all telecommunication operators open access to the networks. They are fibre-based and technology neutral resilient networks, which will ensure adequate capacity for generations to come. There are some 27 MANs and are independently managed for the State by e-Net, who was awarded a 15-year services concession contract in June 2004.

E-Net operates as a wholesaler of access to the MANs and offers a full suite of products including ducting, sub-ducting, dark fibre, high level managed capacity, co-location facilities and relevant auxiliary services.

There was €80 million set aside for the 27 phase 1 MANs. The success of the phase 1 of the MANs has led to a second phase, with funding of €80 million earmarked for the phase 2 MANs. They will be built in over 90 towns with a population in excess of 1,500 people that had no existing DSL broadband. The phase 2 MANs are expected to be completed during 2007.

SINGAPORE

The Singapore government has decided to invest in a new wireless access initiative as part of the government's broader iN2015 plan, a ten-year "infocomm master plan" designed to "propel the nation into 2015 and beyond." The objectives of the plan include tripling infocomm (computer and network related product) exports to about \$38.5 billion, creating 80,000 new jobs, getting 90% of homes using broadband and ensuring that every home with a school-age child has a computer.

The government will provide S\$30m (US\$20m) of the estimated S\$100m cost of setting up the network, which will cover the central business districts, the prime shopping area and the Housing and Development Board (HDB) town centres, extending broadband access beyond homes, offices and schools.

The rest of the money will come from three telecom operators - SingTel, iCell and QMax - which have been selected by Singapore's Infocomm Development Authority to provide coverage under the 'Wireless@SG' programme. IDA is a government agency charged with growing Singapore into a dynamic global infocomm hub.

The three operators will bump up the number of wireless hotspots in the high-traffic areas from the current 900 to 5000 over two years, to make wireless broadband a ubiquitous access mode by September 2007.

The government has stipulated that service providers must offer a low- or no-price plan with at least 512 Kbps connectivity.

In addition to this 'basic tier' service, there will be a 'premium tier' for those wanting greater bandwidth or connectivity options with higher quality of service, and the operators will also offer their own value-added services such as video conferencing, online computer gaming and location-based services.

NETHERLANDS

The city of Amsterdam has begun to deploy a citywide fibre network that combines city governmental and business interests in an effort to roll out services that range from TV and telephone to home care and education.

The network called Glasvezelnet Amsterdam (GNA) is a private and public collaboration aimed at providing a combination of telephony, TV and Internet access at competitive prices. Glasvezelnet's goal is to cover some 450,000 Amsterdam citizens before 2010. GNA is made up of investors from the Municipality of Amsterdam who own one third of the shares, five housing corporations who between them own one third of the shares and investors who own remaining shares.

The network in Amsterdam is structured in three separate layers:

- Infrastructure: GNA will commission the

construction of the passive network and own the fibre infrastructure in the local loop.

- Exploitation: a wholesale provider who will rent the infrastructure from GNA and will activate the local loop.
- Services: The network will be made as open as possible (within practical and economical limitations) for service providers. These could include commercial, non-profit, public services, large or small, traditional or very innovative. The service providers are able to purchase transport capacity at non-discriminatory conditions to deliver services to their customers.

Whilst there has been concern about state aid it is argued that the shareholders of GNA invest under the same conditions as a profitable business with an acceptable risk/reward-relationship. The investment of the Municipality is therefore according to the Market Economy Investors Principle (MEIP). Informal contacts with the European Commission by GNA on the criteria and conditions regarding the MEIP convinced them that this is acceptable.

SOUTH YORKSHIRE

In the South Yorkshire region of England the four local authorities are working together to procure a Business Partner, in conjunction with Service Providers, that would deliver a wholesale, carrier-class network that enables IP-based services to be provided to residents, business and the public sector throughout South Yorkshire¹⁴. The project will enable Service Providers to offer new services in a way that existing infrastructure in the region is unable to deliver.

As the platform will be wholesale Service Providers will have access to a carrier class core and access network at published open book rates. The aim is to

create a low overhead infrastructure that produces an incentive for service providers to utilise the platform.

The consortium embarked on an open negotiated EU procurement process in September 2005 and final applications were submitted in May 2006.

The consortium was aware that there was likely to be State Aid issues and sought approval from the European Commission. The approval was granted in November 2006¹⁵.

POSSIBLE APPROACHES

The Government's strategy for economic growth in NI is aimed at creating a knowledge based, innovative and business friendly region with a highly skilled, flexible workforce generating a high quality of living, sustainable communities and lifetime opportunities for all throughout the entire region.

¹⁶The Northern Ireland (NI) European Regional Development Fund (ERDF) programme will support the regional strategy by promoting investment in research and technological development and encouraging enterprise and entrepreneurship in an overall context of sustainable development.

With regard to ICT the programme will work with the private sector to upgrade NI's existing first generation broadband infrastructure to one of the world's first and most widely accessible next generation, high speed, telecommunications systems, with equitable access to broadband services at equitable prices by 2011.

To achieve this objective it will be necessary to identify those areas of NI where it is unlikely such services will be deployed and take steps to make them available in such a manner that a consumer can take advantage of competitive markets. This

suggests that a mechanism should be devised that is attractive at the wholesale level but has safeguards in place to deliver consumer services.

Furthermore the EU programme also recognises that there must be some support mechanisms in place to provide ICT support for SMEs in rural areas of NI with particular focus on the west of the province. This support will be provided by establishing at least two ICT/telecommunication demonstration centres by 2008 and support mechanisms for SMEs, especially micro-SMEs, during the period of the programme. The support mechanisms are also likely to include ICT advisers and schemes to support broadband demonstration projects in NI.

As well as considering steps to improve telecommunications services within NI, consideration is being given to improve the linkages of regional networks with international networks. Again the European Union has a Structural Funds Programme which seeks to address the economic and social problems which result from the existence of borders. The overall theme of the Programme is to strengthen and deepen cross-border cooperation with an emphasis on supporting strategic plans and projects which will maximise the impact of the funds throughout the eligible area¹⁷. One project under consideration is to improve international telecoms connectivity to NI and in particular the NW of the island. Such a project if implemented would increase the telecommunications resilience for the island, secure supply of international telecommunications for the island, and create an independent ring network between Ireland and North America.

CONCLUSION

Today we are witnessing convergence in the

communication and media industry with companies offering converged services of television, broadband, telephone and mobile. A strategic investment in NI's core telecommunications infrastructure in the 1980's, and continued investment by the telecommunications industry, has meant that many parts of the region are well served by telecommunications services.

Many public policy makers believe that telecommunications infrastructures contribute to the wider economic growth. Already there have been several interventions into the market to provide higher bandwidth services. The UK government has put in place a framework so that the barriers to entry and time to market for

entrepreneurs are reduced enabling them to provide the appropriate telecommunications goods and services to the market. Intervention through the use of public funds can be valid if it tackles issues such as market failure, increasing competitiveness or address distributional inequalities.

Expanded telecommunications / broadband infrastructure will continue to play an important role in NI's future economic development. It will provide opportunities for NI companies to develop and supply new services over these new communications channels. The current approach has been to focus on exploring ways of increasing broadband speeds across NI; and considering the impact a direct international telecommunications link would have on the local market.

Notes

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Article 19: Sustainable Regeneration for the Whole Economy

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INTRODUCTION

Unlike other Government priorities such as health and education, Urban Regeneration is not the provision of a single-issue service to citizens. Rather it aims to redress the physical and economic decline and deprivation found in urban areas and communities, where mainstream Government services cannot, on their own, turn back the tide of urban decay and historical under-investment. Urban Regeneration sets physical development firmly in the context of the communities living and working in and around a given geography and works to address the social issues contributing to and arising from deprivation. Urban Regeneration draws on and targets the efforts and resources of all stakeholders, applying a multi-disciplinary and multi-lateral approach to addressing the complex problems and substantive needs of urban geographies.

In April this year, the Laganside Corporation stood down after 18 years of leading the regeneration of Belfast's waterfront. Even the most cursory comparison of today's Belfast with that prior to 1989, would reveal a striking difference in environment, public mood and economics. Unsightly wastelands and a polluted Lagan river have been replaced by a modern, high quality environment confident of its future, where people are pleased to work, live and relax. And this is a success story not just of a re-born Belfast but of cities and towns across NI.

The NI economy has experienced significant progress over the last decade. Employment has grown at an unprecedented pace, with more than an additional 100,000 jobs in the economy than ten years ago. The net increase in employee jobs in NI over the last decade is 19.9%, and is higher than the UK rate of 12.8%. At the same time, the

unemployment rate of 4.3% has more than halved over the last decade and compares favourably with the corresponding UK average of 5.5%.

Such a considerable sea change did not happen by accident. Indeed it is the product of a number of contributing factors, not least of which has been the ongoing Peace Process and the inward investment that has been attracted as a result. There is a new-found confidence in NI that presents a significant opportunity for real economic growth.

However, the wider socio-economic picture is mixed. The take-up of Incapacity Benefit is considerably higher than the UK average (9% of NI population compared to 6% in the UK), and 16% of the population claims Disability Living Allowance compared to 9% UK average¹. Average gross weekly earnings by region for full-time employees, April 2005 show NI at £387 compared to UK average of £431². Clearly, without targeted intervention, the gap between those benefiting from new investment and those less well off is likely to grow.

Whether under Devolution or Direct Rule, Government has sought to give the strongest lead to the renewal of cities and towns, both by encouraging the investment of the private sector and financing and subsidising the necessary physical and societal infrastructure required for the growth of communities and the shared economy.

BUSINESS AND THE MARKET

The fact that businesses can have a very significant impact on geographies is undoubted. The employment opportunities created by entrepreneurship and inward investment are essential to the development of any community. Likewise, socially-responsible companies who invest in the area can make a positive impact on the

lives of all those in the wider community, the local environment and sense of well-being. However, while cities and towns may hold substantial potential for economic development, this potential is not necessarily always recognised or realised without further intervention and incentive. A purely market-based approach to urban policy - where the private sector is seen as primarily responsible for driving progress - is insufficient. In many cases there has been market failure and areas of persistent deprivation often do not attract sufficient investment without focused attention being paid to the issues faced by specific communities, geographies and demographics. Government therefore has the responsibility for taking initiative and steps which other partners are unable or not-yet-prepared to take. By laying the foundations for sound development, and applying “cement” to the various “bricks” which together form renewed settlements, the role of Government is to catalyse and optimise as far as possible the potential for urban communities to thrive.

Such was the case for Laganside. At a time when there was poor market confidence in Belfast, the former Department of the Environment (latterly the Department for Social Development) (DSD) sponsored the redevelopment of the banks of the Lagan near the City Centre. A new artificial weir near the mouth of the river has mitigated against the tidal effects of the river, helping to address the exposure of riverbeds that were foul-smelling. Thanks to this and other efforts, Laganside is now an attractive and integral part of NI’s capital. Along its banks, the Waterfront Hall, the Odyssey complex, Clarendon Dock and Lanyon Place provide a new vista and space for living and working. Laganside has been a remarkable success, providing the confidence and environment for the creation of 14,500 jobs, a world class concert

hall, successful business districts and landmark buildings and leisure facilities.

While £200m has been contributed from the public purse to the Laganside project, private investment has exceeded £800m and the overall investment is now expected to reach levels where £6 of private money has been invested for every £1 spent by the Government. It must be realised that investment in key areas such as this not only addresses specific urban decay in a given ward or local area, but rather it can have a series of knock-on effects for the wider town, city or region. In this case, there is no doubt that the results of initiatives such as Laganside have contributed greatly to the wider economic climate.

Prior to the Laganside Corporation being set up, there was no investment in this area and it was a derelict brown field area. The corporation realised that, as with many other European cities, the river, which had largely been ignored, could be an asset to the city. The creation of the Lagan Weir was the first step in the regeneration of the area and then they set about creating an infrastructure and attracting investment, and in doing so made the river area an attractive place to both live and work.

While it does not necessarily follow that the significant investment we have seen in NI would not have occurred were it not for initiatives such as Laganside, it is clear that they have successfully contributed to its overall regeneration. Being at the heart of the city, which is seen as shared space and not partisan or sectarian, such investment can benefit and be felt by members of all communities. Landmark projects such as this also have a significant impact on the overall tourism product of a city or region. That Belfast now has its own state of the art concert hall and public arena enables

both the city and the region to take their place in the wider European family.

Regeneration potential is not confined solely to Belfast. The North West Development Office has been working in Londonderry for the past 25 years to regenerate the City. More recently, ILEX was formed, a wholly Government-owned urban development and regeneration company for Derry City. It is the only such company in NI, created to promote the social and economic reinvigoration of the Derry City area. It works at “arms length” from its parent Government Departments (the Department for Social Development and the Office of the First and Deputy First Ministers), operating like a private sector firm, yet it has the stability to call on the Departments for support and endorsement of its regeneration projects and to have their statutory powers to assist its work.

Private investors have also identified growth opportunities in many of NI’s regional cities and towns, particularly in large market towns such as Ballymena, Enniskillen and Omagh and in along the Belfast/Dublin corridor, including Lisburn, Banbridge and Newry.

CITY AND TOWN TRANSFORMATION

The absence or deterioration of urban infrastructure stunts economic development. However, NI is seeing unprecedented investment in infrastructure at all levels. Roads, public transport, water, sewerage, schools, hospitals and social housing are all among the key elements of regional and local infrastructure that are seeing widespread transformation.

As a policy area, Urban Regeneration emerged out of the discipline of urban planning, recognising that the problems of blighted areas impact not only on

the local community and economy, but the wider city or town. Thus we have seen countless initiatives to improve the physical, built and landscape environment of previously run down urban areas. It has largely been possible, with appropriate use of government vesting and planning powers, to turn almost uninhabitable areas into places where people are keen to live and work. But it is vital that a strategic approach is taken. Thus, as Urban Regeneration has developed, there has been a progression away from reactionary investment to the development of more holistic masterplans for individual areas and their hinterlands.

Masterplanning is already being applied to Belfast, where further developments building on the success of Laganside are being carefully planned over the next 10-15 years. The regeneration policy for Belfast has 5 key themes - Retail, Tourism, Office, Public Realm and Connecting Communities. The framework for delivering this policy focuses on completing the last remaining legacy projects within Laganside, the new Victoria Square development and then Royal Exchange in the North East of the city centre. There are plans to follow this with the regeneration of the North West Quarter. These developments will impact dramatically on the look and feel of the city, with a major programme of public realm improvements drawing these ambitious developments together as a whole: improving pedestrian access and connectivity, opening up areas of the city for everyone to enjoy and celebrating the identity and character of the city.

Altogether, the plans for Belfast City Centre are set to deliver:

- £1 billion potential private sector investment to 2015;
- 1.2 million sq.ft retail floorspace;

- 8,000 jobs;
- 500 residential units in main shopping area;
- New hotels, restaurants, bars and cafes, arts/ cultural provision, new streets and squares;
- Public investment of £14m between 2007 and 2009 to renew 13 city centre streets, including £500,000 earmarked for new public art pieces.

Government has long recognised the key contribution which the public realm can bring to furthering Urban Regeneration by transforming communities, bringing significant economic benefits as well as making spaces more visually attractive and enhancing peoples' experience of the place. The aim is to create neutral places where people can meet, relax and enjoy their surroundings, whether living, working or visiting the place. The experience of cities like Sheffield, Manchester and Glasgow is that carefully-structured investment in public open space has a crucial role in stimulating regeneration and commercial strategies.

The result of investment in Belfast City Centre will be a tangible symbol of a new inclusive NI and will be largely funded by the private sector. £163m is earmarked for Belfast City Centre Regeneration between 2008 and 2010 with costs recovered through net receipts of £136m from 2011.

This strategic approach to regeneration extends beyond the city centre boundaries with masterplanning exercises being carried out by DSD in areas such as Lower Falls, Lower Shankill and Lower Newtownards Road. These in turn will be set within the context of strategic regeneration frameworks for North, South, East and West Belfast, and the Shankill. There is a major redevelopment opportunity on the site of the former Crumlin Road Gaol and Girdwood Barracks in the north of the city, where a masterplan will deliver

real growth for an area that has been particularly badly hit by the problems of the past.

In the North West, £4.2m of grants were provided in the last 5 years, attracting £17.6m from private developers. Derry City Centre has been significantly reinvigorated by a series of regeneration initiatives led by DSD. The Department has seen over 100 sites developed in the past 25 years. Whilst it could be said that expectations were low at the height of the Troubles, with work largely carried out to patch the city up, more recent projects have reflected the highest standards of design and sustainability, and carried out in line with the Heart of the City Strategic Framework developed in 2004. Examples include the Derry City Public Realm Project and the Foyle Street Development site.

Comprehensive development schemes have been rolling out across NI for some time. Currently plans are underway for further substantial work in Bangor, Ballymena, Coleraine, Enniskillen, Holywood and Newry. A scheme led by North Down Borough Council, should see the seafront and main street in Bangor redeveloped to provide a leisure mall/family entertainment centre, a theatre, a Debenhams store as the anchor retail tenant and around 65 apartments. In all cases there is the potential for significant private sector investment.

TACKLING DEPRIVATION THROUGH AREA-BASED REGENERATION

It is a stark reality that many of NI's most deprived communities are within a few miles of now blossoming city and town centres. While more affluent areas tend to attract reasonable investment and competition without much assistance, deprived or waning geographies do not normally benefit so readily from the better environment and economy that these can bring. The negative impact of poor

environmental surroundings and low economic activity in an area must not be underestimated. For example, life expectancy for men living in the 10% most deprived areas of NI is 5 years shorter than the NI average, and 3 shorter for women. Only 28% of adults in the 10% most deprived areas in NI are qualified to Level 2+, compared to 45% on average³. Even at an early age, the disparity in performance is evident - 63% of children attain Key Stage 2 English - NI average 78%. Figures for Key Stage 2 Maths are 66% and 80% respectively. 50% of the population in Neighbourhood Renewal areas are economically inactive compared to the NI average of 37.7%. Not only do such areas not tend to perform well, they are likely to decline yet further⁴.

If a community feels disenfranchised, it is less likely to find the resolve or ability to emerge from its difficulties. It is thus important to identify the interdependence of the environmental, economic and community aspects to the regeneration effort and target strategic support and intervention to break the downward spiralling circle.

Neighbourhood Renewal is Government's key area-based strategic vehicle for tackling the complex, multi-dimensional deprivation and disadvantage found in many urban communities in NI. The strategy focuses on those neighbourhoods suffering the worst levels of deprivation as measured by the Noble Indices of Multiple Deprivations (MDM). The NI MDM 2005 contains seven measured domains of deprivation. These are income; employment; health and disability; education, skills and training; proximity to services; living environment, and crime and disorder. A stand-alone measure of Economic Deprivation has also been created combining the domains of income, employment and service proximity.

Neighbourhood Renewal works by applying a cross-cutting, multi-lateral approach. It aims to improve the economic life chances of people living in the most deprived areas by tackling key causes such as poor educational achievement, low skills and qualifications base, poor health, unsafe areas, lack of hope and aspiration, and low community expectations. Its focus is on long-term, strategic and co-ordinated intervention and support by Government and the statutory agencies. It links with and underpins other major Government policy strategies such as A Shared Future, Investing for Health, the Suicide Strategy, Drug and Alcohol Strategy, Children and Young People, Community Safety, Skills Employability and Sustainable Development and Lifetime Opportunities.

Bearing in mind the breadth of these factors (from education to income and job opportunities), it is clear that the responsibility for addressing such deprivation cannot be successfully addressed unilaterally but by the combined efforts of society as a whole. Key partnerships involve the Voluntary and Community Sector, local Government and the private sector.

With its focus on the social dimensions to regeneration in addition to physical regeneration, it aims to provide resources and a framework through which statutory agencies, local government, the private sector, and, most importantly, the communities themselves, are enabled to develop and take forward a vision or strategy for the local area. Neighbourhood Renewal is targeted at the top 10% most deprived areas in NI based on the Noble multiple deprivation measures. In each individual community a local Neighbourhood Renewal partnership is formed to develop a strategy and action plan to tackle the issues faced by that community.

Significant amounts of public money are currently deployed in providing services within these most deprived areas. Through this strategy, the aim is to make these services much more effective by working to make them more joined up, locally sensitive, locally responsive and more locally accountable. To this end, the Neighbourhood Renewal Investment Fund is contributing approximately £60m over three years from April 2005 to March 2008. The Fund is available to supplement existing mainstream government funding already being deployed in these areas by levering in additional resources, support the testing of new approaches and supporting activities aimed at assisting the co-ordination and impact of current public services.

In total, 36 Neighbourhood Renewal areas have been identified and in all areas a Neighbourhood Partnership, representative of the key interests in each neighbourhood and involving providers, planners and funders of public services, as well as voluntary, community sector and local political representatives has been established. Partnerships are working to finalise a 3-year Action Plan to identify and prioritise the actions and activities required to address local needs.

It is also recognised that many areas, while not in the top 10% most deprived, are also in considerable need of targeted intervention. Government has therefore made available further resources to these “areas at risk”. The objectives of the Areas at Risk Programme include targeting:

- “Interface” areas that lie outside of Neighbourhood Renewal areas;
- Areas in economic decline;
- Areas at “risk of decline” for example, those areas that without targeted support may move

into the top 10% as defined by Noble;

- Areas at risk of “descending into instability and crisis” or areas in which there is a decline in community cohesion which threatens peace and stability;
- Areas where the loss of the service provided by organisations would have a significant negative impact on the local community.

The pilot programme has a budget of £3m over two years, it is envisaged that between 20 and 30 communities across NI will be involved in the programme.

COMMUNITY OWNERSHIP

As we have seen, the causes of deprivation are considerably diverse and a failure to go further than environmental or infrastructural investment would be at best myopic. While transformed environments can bring about significant impacts for the local community and businesses through the creation of jobs and opportunities in addition to a greater sense of well-being, this is not always the case. There are endemic problems faced by communities which must be tackled head on. After decades of division and disinvestment community cohesion is in many cases very weak. Often communities feel isolated and in other cases there is no sense of community at all. Thus, regardless of the economic growth in the region, this growth is not experienced by those in such communities to the degree that it is experienced by others. Indeed this growth is not optimised precisely because it does not involve or reach those in areas with weak community infrastructure.

The Local Community Fund was established by the Secretary of State in February 2003 to support those communities suffering from economic disadvantage and social exclusion. In its first year

the Fund provided £3m to specific target areas in 18 Council Areas across NI. The Fund supports actions in both the short and the medium term to deliver sustainable communities in the longer term.

There are issues around democracy and ownership which are essential to the renewal of communities. If communities are to engage with the renewal process and for the impact of economic and regenerational initiatives to be maximised, the lessons learned in NI and further afield are that communities are to be part of the envisioning process from the outset. This is made all the more pertinent when one considers the distinct perception among some urban communities in NI that they have been undervalued and that decisions about their community are taken above their heads.

CONCLUSION

Investment in sound infrastructure and healthy, aesthetically-pleasing environments is obviously critical to creating the right context in which the economy can flourish. It increases confidence and opportunities for the private sector, enables additional investment and catalyses growth in terms of business, jobs and leisure facilities and can have a significant impact on the social well-being of communities. However, not all citizens or communities have immediately benefited tangibly

from this level of regeneration and the experience of numerous communities in NI is that they have continued to experience high levels of deprivation despite the context of recent investment. True regeneration and economic growth is for the whole city or town.

NI is a changing economy and regeneration is not primarily driven by market failure any longer, although that does remain a factor in a number of areas. Government will continue to catalyse investment and development in city and town centres, as well as support and facilitate key comprehensive developments where these are necessary. But there are new challenges. Recognising this, the Government is raising the bar of the quality, sustainability and impact of development, seeking to ensure that every opportunity is given to the economy to grow and benefit from the progress so far. In the same way, deprivation at the community level needs to be halted and turned back in order for this growth to be lasting and beneficial to all. The Government is therefore taking an increasingly strategic, holistic approach to its policy-making and delivery for deprived communities. This is the basis for tackling disadvantage and achieving sustainable regeneration for cities, towns and communities.

Notes

¹ Department for Social Development (2006) Family Resources Survey 2004-06.

² Department of Enterprise, Trade and Investment (2005) Northern Ireland Annual Survey of Hours and Earnings; Office for National Statistics (2005) Great Britain Annual Survey of Hours and Earnings.

³ Level 2+ qualifications are defined as follows: 5+ CSEs (grade1), 5+ GCSEs (grades A-C), 5+ 'O' level passes, Senior Certificate, 1 'A' level, 1-3 AS levels, Advanced Senior Certificate, NVQ level 2, GNVQ Intermediate or equivalents.

⁴ Northern Ireland Statistics and Research Agency. For further statistical information on specific neighbourhoods and other measures, see the Northern Ireland Neighbourhood Information Service (<http://www.ninis.nisra.gov.uk>).

Article 20: Economic and Social Analysis of the Benefits and Costs of the forthcoming Single Electricity Market

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INTRODUCTION

The Single Electricity Market (SEM) will be a single wholesale electricity market on the island of Ireland, bringing about significant changes to the electricity trading arrangements and associated regulatory, transmission and other ancillary arrangements in NI and the RoI. It aims to:

- enhance security and diversity of supply;
- provide greater competition and investment opportunities from a stable market with transparent and equitable trading arrangements; and
- encourage market efficiencies and economies of scale.

The aim of this article is to identify and quantify the social costs and benefits of the SEM. This article is organised as follows. Firstly, a short description is given of the history of the SEM and the current electricity markets in NI and the RoI. Secondly, a methodology is described to identify the social benefits and costs of the SEM against a *Business-As-Usual* scenario. Thirdly, the quantified net benefits of the SEM are distributed between consumers and producers in NI and the RoI. This is followed by a quantification of the market impact on electricity prices for consumers in NI. Finally, conclusions are drawn and discussed.

SINGLE ELECTRICITY MARKET

Creation of the SEM flows from work underway since 1999 to enhance energy cooperation between NI and the RoI. The Irish and UK Governments have committed to the furthering of regional integration between NI and the RoI set within the context of the drive to create an EU wide internal market for electricity and have signed an All-Island Development Framework (November 2004). This sets out plans for the integration of gas and electricity markets. The Commission for

Energy Regulation and the NI Authority for Utility Regulation, the electricity Regulatory Authorities for the RoI and NI respectively, are undertaking joint decision-making on the creation of the all-island SEM, within the framework of the All-Island Project. The NI Department of Enterprise, Trade and Investment and its counterpart in the RoI, the Department of Communications, Marine and Natural Resources, are working with the two Regulatory Authorities on the development of the all-island energy market and in particular the SEM.

The SEM will provide for a common set of trading arrangements that will apply to both NI and the RoI. These will be set out in licensing and contractual arrangements with market participants. Day to day trading will be managed by a Market Operator to be established initially by the two Transmission System Operators (TSOs: System Operator NI (SONI) and ESB National Grid) as a contractual joint venture. The two Regulatory Authorities will be responsible for the development and governance of the SEM.

Northern Ireland

The NI wholesale electricity market is relatively small at approximately one third the size of the RoI. Prior to privatisation, Northern Ireland Electricity (NIE) operated as a vertically integrated utility. NIE was then split into four generation entities and a transmission, distribution and supply entity, and sold to private companies in 1992-93. Initially, all the electricity generation capacity was contracted to the NIE Power Procurement Business (PPB) as a single buyer, with limited exceptions. PPB had a right to buy all of the electricity produced by the generation entities. This right was embodied in long-term Power Purchase Agreements. There are currently three generating stations in NI, two of which have long-term Power Purchase Agreements with the PPB.

Interim arrangements, based on bilateral contracts, were put in place in 1999 and allowed suppliers to purchase electricity from parties other than the PPB. This demand continues to be facilitated by the recently commissioned Coolkeeragh ESB facility and through the Moyle interconnector (450MW between NI and Scotland). The exact manner in which the PPB will operate within the SEM is yet to be finalised. However, the PPB will remain revenue neutral, i.e. any difference - positive or negative - between revenue generated in the market and costs of the PPB contract will be borne by customers.

Republic of Ireland

The current wholesale electricity market in the RoI is also based on a bilateral trading model with prices set under the terms of the bilateral contracts between suppliers and generators. The buying and selling of power between ESB Power Generator (ESB PG), ESB Customer Supply and Public Electricity Supply is regulated via a Bulk Power Agreement. ESB PG is the largest generator with a market share of over 40%.

Interconnection

There is one main 275kV electricity interconnector between NI and the RoI. Net transfer capacity of the main interconnector is limited - mainly as a result of transmission constraints in the RoI - to 300MW, which is the maximum power that can be transferred between the two systems in connection with trades by market participants. Interconnector export capacity for the duration of one month is put up for auction by NIE through SONI.

There are two additional 110kV interconnectors in the west of the island which were upgraded to full system interconnectors, each with a capacity of 120MW, during 2001. These were introduced as standby links, primarily to allow the system

operators to provide mutual assistance in an emergency. They were not built for cross-border trading.

Plans are underway to build a new North-South interconnector, to be completed by 2012, which will more than double trading capacity and further reinforce the electricity infrastructure. The first east-west interconnector between Dublin and Wales is planned to be built by 2012. This will further improve security of supply and trading opportunities.

METHODOLOGY

Through the work of the Regulatory Authorities, TSOs and market participants, a range of evidence has become available on the costs and benefits of the SEM. This evidence, together with modelling analysis of the new market, can be used to assess the net benefits of the SEM.

The costs and benefits of the SEM are appraised by comparing a scenario where the SEM is implemented against a *Business-As-Usual* scenario, in which it is assumed that the existing systems in NI and the RoI are maintained without any significant change (unless there is a specific existing requirement for change). A 10 year time horizon was used starting from 1st November 2007, the date when the SEM is implemented, reflecting a reasonable lifetime for a new market design, and a 3.5% real discount rate, reflecting public sector appraisal guidelines, to estimate costs and benefits in these two scenarios.

The costs and benefits of the SEM will be distributed between NI and the RoI and between producers and consumers, and hence the net benefits of the SEM will vary depending on which group we consider. From the point of view of society

on the island of Ireland as a whole, the net benefits of the SEM (or the “social benefits”) are equal to the amount of any savings in the resources used in the electricity supply industry, i.e., to any net cost savings.

SOCIAL BENEFITS

The benefits of SEM implementation comprise:

- **Variable cost savings:** fuel, CO₂ and import cost savings that derive from more efficient dispatch under the SEM, which have two sources. The first source is better use of the north-south interconnector under the SEM, as a result of centralised scheduling and control of the all-island systems. The second source is improved availability of the plant of ESB PG, as a result of stronger incentives under the SEM through directed contracts instead of the current constraints of cost-based regulation.
- **Installed reserve savings:** more efficient generation investment decisions under the SEM, which also have two sources. The first source is the adoption of a joint system adequacy standard covering both NI and the RoI, and by implication greater sharing of installed reserves across the island. The second source is improved availability of ESB PG plant, which delays the need for new generation investment compared to Business-As-Usual.
- **Avoided costs of redundant Market Operator systems:** early retirement of existing Market Operator systems, which leads to reductions in operating costs as well as the avoidance of future capital expenditure that would have been needed for routine upgrades to the existing systems.
- **Avoided transmission investment costs:** more efficient transmission investment decisions under the SEM, as a result of the creation of a transmission charging system in NI based on the

location of generation and demand, modelled on the one that currently exists in the RoI. This will replace the current system of flat rates (per MW), which are charged to generators and suppliers.

SOCIAL COSTS

The costs of SEM implementation comprise:

- **Market operator implementation costs:** the costs of creating the new Market Operator, which will be a joint venture between the TSOs, and equipping it with the new systems it needs to operate the SEM.
- **Market participant costs:** the costs of installing the new systems needed by generators to interface with the SEM market systems, together with the costs to suppliers of providing credit cover to the Market Operator for energy received on account. The latter is a requirement by the Market Operator under the SEM, which introduces a gross mandatory pool for trading between generators and suppliers. Under *Business-As-Usual*, credit costs are negligible as most energy is sold through bilateral contracts of vertically integrated participants.
- **TSO implementation costs:** the costs of changing TSO systems and procedures and contracts with grid users to accommodate the SEM, including additional metering costs, together with the legal and other advisory costs of divesting SONI from NIE.
- **Regulatory design and administration costs:** the costs of consultancy and other advice to the Regulatory Authorities to design the SEM, and the ongoing costs of the Regulatory Authorities’ Joint Regulatory Committee and of market monitoring to help control market power.

Cost and Benefits of SEM Implementation

Table 1

	NPV (£M) 2006 PRICES	
	COSTS	BENEFITS
Benefits of SEM Implementation		
Variable cost saving		142.8
Installed reserve savings		107.2
Avoided costs of redundant Market Operator systems		20.1
Avoided transmission investment costs		4.2
		274.3
Costs of SEM Implementation		
Market Operator implementation costs	134.5	
Market participants costs	15.1	
TSO implementation costs	8.9	
Regulatory design and administration costs	12.5	
	171.0	
NET BENEFITS OF SEM IMPLEMENTATION		103.3

Source: NERA (2006)

NET BENEFITS

A summary of the net present value (NPV) of costs and benefits of SEM implementation is presented in Table 1. The variable cost savings and installed reserve savings, i.e. the market impacts, are by far the largest items, accounting for over 90% of the total benefits. The variable cost savings are split more or less evenly between savings from better use of the north-south interconnector and improved ESB PG availability under the SEM. About two thirds of the installed reserve savings are from greater installed reserve sharing and one third are from improved ESB PG availability under the SEM.

The Market Operator implementation costs are by far the largest cost item, accounting for nearly 80% of the total costs. The market participant costs are predominantly the costs of system implementation. The net benefit of the SEM implementation

amounts to £103 million net present value at 2006 prices over 10 years.

DISTRIBUTIONAL ANALYSIS

The SEM will bring together the markets of NI and the RoI to form a single all-island market, and hence the analysis of the distribution of costs and benefits has two dimensions:

- Geographical: distribution between NI and the RoI; and
- Vertical: distribution within the supply chain, between market participants and consumers.

Most of the non-market impacts of the SEM, which cover everything apart from the variable cost savings and installed reserve savings, will be shared geographically between NI and the RoI based on cost sharing rules agreed within the framework of the All-Island Project.

Distribution of Net Benefits of SEM Implementation (£m)

Table 2

	NI	ROI	ALL ISLAND
Producers	6.5	11.9	18.4
Consumers	38.3	46.7	84.9
Total	44.7	58.6	103.3

Source: NERA (2006)

Table 2 shows the aggregate impacts on market participant and consumers across the island, taking into account the non-market and market impacts described above. The overall impact on market participants is a small increase in profits in net present value terms across the island. End-user prices will be slightly lower under the SEM than under Business-As-Usual at an all-island level, as well as within each individual regional market, indicating that market price reductions will more than offset the costs of implementing the SEM.

MARKET IMPACT IN NI

The net benefits to consumers in NI will be passed on through electricity prices. In other words, the net benefit of £38.3 million will be spread over an approximate electricity demand of 96 million MWh from November 2007 up until 2016, or £0.40 per MWh in real terms. This is equal to a 0.36% decrease in the electricity price compared to the domestic unit rate of 11.02 pence per kWh for 2006-07, as published by NIE in April 2006.

Internal analysis on the immediate price impact suggested that the NI electricity prices remain stable on entry into SEM, with a net increase of 0.3% in 2008 and a price drop of up to 0.9% for 2009. From 2010 onwards, it is expected that entry of new generating plants and increased levels of efficiency and competition will exert further downward pressure on prices.

CONCLUSION

The social net benefits of the SEM will be approximately £103m in net present value terms. It is estimated that the profits of market participants across the island will increase slightly. In terms of the impacts on consumers, a marginal fall in end-user prices is estimated for both NI and the ROI. Consumers will capture the majority of the social net benefits of SEM implementation. The differences in prices are small and, as with all long term projections, results are subject to significant uncertainty, which must be borne in mind in interpreting and using these results for decision-making. In particular, the quantification and distribution of legacy benefits from ESB PG and ROI consumers.

In addition to the quantitative benefits listed above, a range of other benefits will accrue from the SEM that are less amenable to quantification, including: improved competition and reduced market power, improved co-ordination of transmission operation, better management of loop flows in the future and environmental savings.

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