

9. NATIONAL ANTI- POVERTY STRATEGY AND INCLUSION STRATEGY (NAP/INCLUSION)

9.1 Introduction

The ten year National Anti-Poverty strategy (NAP) was launched in 1997 to help achieve the objective of eliminating poverty in Ireland. This was revised and further developed in the NAP *Building an Inclusive Society: Review of the National Anti-Poverty Strategy* (2002). The *Lisbon Strategy*, which is outlined above, also refers to social cohesion goals and required Member States to produce Action Plans against Poverty and Social Exclusion (NAP/inclusion). Two NAP/inclusion plans, 2001-2003 and 2003-2005 have already been completed. The second NAP/inclusion plan was recently reviewed and the Office for Social Inclusion, which was set up to co-ordinate the Anti-Poverty and Social Inclusion policy, has produced a report on the consultation for the next NAP/inclusion for the period 2006-2009.

The overall goal of the NAP/inclusion process is to “...reduce substantially and ideally eliminate poverty in Ireland and to build a socially inclusive society”, where poverty is defined in the following way:

People are living in poverty if their income and resources (material, cultural and social) are so inadequate as to preclude them from having a standard of living, which is regarded as acceptable by Irish society generally. As a result of inadequate income and resources, people may be excluded and marginalised from participating in activities, which are considered the norm for other people in society.

The overall goal of the strategy is to be achieved through more specific objectives. These key objectives of NAP/inclusion are to:

- Sustain economic growth and create more and better jobs;
- Increasing of income support in real terms for those who need it and employment participation for those who are able;
- Improve access to and providing higher quality public services;
- Address the specific needs of groups at high risk of poverty and tackling the causes of inter-generational poverty;

- Supporting disadvantaged communities.

In addition to this general target NAP also addresses poverty issues within a number of key themes and defines targets within each of these themes:

- Income Adequacy.
- Employment & Unemployment.
- Educational Disadvantage.
- Health.
- Housing and Accommodation.
- Rural Disadvantage.
- Urban Poverty.

These themes reflect the wide range of factors leading to poverty and exclusion that are often interrelated. In relation to poverty the NAP/inclusion was to reduce the number of individuals who are living in consistent poverty below 2 per cent and to eliminate consistent poverty. A person lives in consistent poverty if they are a member of a household that falls below 60 per cent of the mean household income and lacks basic necessities.³⁴ Clearly, income redistribution measures can contribute significantly to alleviating consistent poverty and in this respect social welfare payments, pensions, and disability benefit have been increased at a rate that significantly exceeds the rate of inflation. The tax burden has also been reduced for the low paid and child benefit has been increased. The recently announced *National Childcare Strategy* further supports households with young children. Apart from the direct income supports social and affordable housing plays an important aspect of tackling poverty. This is particularly important in an environment of a booming housing market which impacts on affordability both in the owner-occupier market and the rental market.

Redistribution in itself does little to deal with the root causes of poverty. Consequently, other measures to reduce poverty are needed. For example, removing obstacles to employment will be important going forward since despite the substantial reduction in unemployment over the last decade the number of long-term unemployed has remained constant for a number of years. In this respect tackling educational disadvantage continues to be of high importance, especially as low educational attainment tends to lead to poor labour market outcomes. Furthermore, special attention needs to be paid to particularly vulnerable groups including:

- children, women,
- older people,
- travellers,
- people with disabilities,
- migrants and members of ethnic minority groups.

³⁴ Household income is usually equalised to take account of differing household composition.

9.2 Recent Developments

In order to better set the context against which the various investment priorities should be considered it is useful to briefly review some poverty and social inclusion trends.

Poverty and deprivation can be measured in many ways. Poverty cannot simply be measured in terms of income since many low-income individuals do not have a particularly low living standard. Thus, poverty measures must incorporate all factors that determine living standards. Consistent measures of poverty have been developed through extensive research at the ESRI and they have both been used to monitor progress on NAP/inclusion and to identify targets. Persons suffer consistent poverty if they have a low income and score on other non-monetary deprivation indicators.

Whelan, Nolan and Maître (2006) show that, while living standards and levels of deprivations have improved over the period between 1994 and 2001, the numbers falling below relative income poverty lines has increased. In general the decreased dependence on social welfare payments has improved the situation for children and likewise older people have benefited from rising relative incomes. However, the relative poverty rates among the ill and disabled increased sharply. On average, lone parents have become less dependent on welfare payments but this does not seem to have resulted in lower poverty rates. Thus the study highlights that there are a range of groups, which are subject to differing poverty trends.

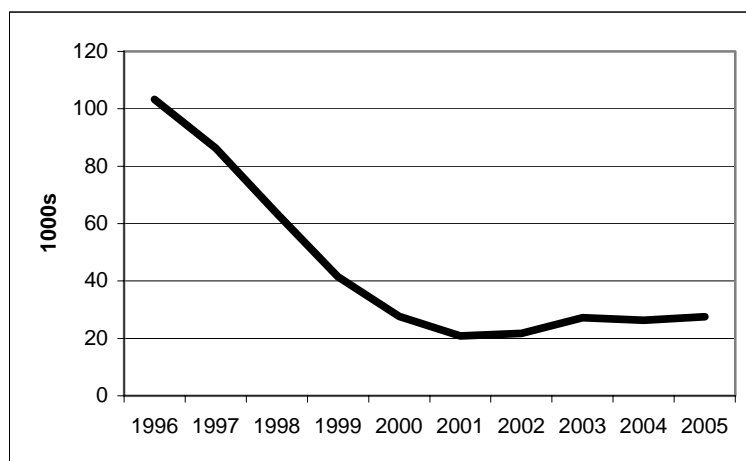
Most recently Whelan, Nolan and Maître (2006) reviewed deprivation and consistent poverty measures using more up to date data. Since the most recent data used for poverty measurement were collected in a new survey which differs in a number of respects from the previous surveys, they reconfigure the non-income deprivation measure by including 11 indicators rather than 9 indicators which are then combined with income thresholds of 60 per cent and 70 per cent of median income to generate consistent poverty measures. They find that certain groups are most at risk of living in poverty. These include lone parent households, households with large numbers of children, individuals with low educational attainment, the unemployed, the ill and disabled. Unfortunately, the measures based on the new survey are not directly comparable to measures calculated using the previous survey so identifying trends is not straightforward.

As was highlighted above, employment status is a significant determinant of poverty. Since many individuals in transitory unemployment will not suffer from poverty it is particularly important to consider the level of long-term unemployment.

Figure 9.1 shows the number of individuals classified as long-term unemployed over the period 1996 to 2005. The graph clearly shows the rapid decline in the number of long-term unemployed individuals until 2001. Since then the number of long-term unemployed has increased slightly. Even though the increase is not substantial, it is clear that the level has hit a floor. Clearly, individuals can exit the long-term unemployment status by entering

employment or by leaving the labour force through retirement or illness and disability. The remaining long-term unemployed appear to be more persistently out of employment suggesting that more significant interventions will be required to integrate them into employment.

Figure 9.1: Number of Long-term Unemployed



Source: CSO *Quarterly National Household Survey*.

A number of different groups may suffer from inequalities and discrimination. These include females, the disabled, travellers and ethnic minorities. In this section we briefly review some of the recent developments and research results for Ireland.

Starting with gender inequality, research suggests that tackling pay gaps is an important element in promoting greater female participation as women's participation is particularly responsive to increases in pay (Doris, 2001; Callan *et al.*, 2003). Research conducted as part of the *Mid-Term Evaluation* of the NDP (see Fitz Gerald, McCarty, Morgenroth and O'Connell, 2003) shows that in 1987 the ratio of women's mean hourly wage to men's mean hourly wage was 80.1, representing a gap of 20 per cent. This gap declined slowly to 15 per cent in 1997. However, between 1997 and 2000 there was very little change so the mean pay gap still stood at 15 per cent.

The results for 2000 show that the female/male wage gap is narrowest among those in professional occupations, where women earn 91 per cent of male hourly wages on average and among clerical workers where the ratio is 87 per cent. The widest gaps are observed in both high and low status occupations. Women managers and senior officials earn only 72 per cent of male managers' earnings on average, representing a gap of 28 per cent. In sales and service occupations the gap reaches 32 per cent, while in elementary occupations the gap is 25 per cent.

Decomposing these results to account for different levels of experience showed that time out of the work place accounts for an increasing proportion of the persistent pay gap between men and

women. This suggests that interventions, which facilitate employment continuity and reduce the penalties attached to time out of the work force are extremely important. Within the first category, the childcare commitments within the NDP are central. The availability of affordable childcare is an important element in women's decisions to stay in the labour market when they have young children and on the length of time they stay out of the labour market.

A recent study by Russell, Smyth and O'Connell (2005) further analysed the gender pay differentials among graduates. They found no gender wage gap among graduates three years after graduation across the entire labour market. However, a gap of 8.2 per cent was found for graduates entering the private sector. Of course, if gender wage gaps develop due to time out of employment by women then measuring the gap three years after graduation may not be appropriate.

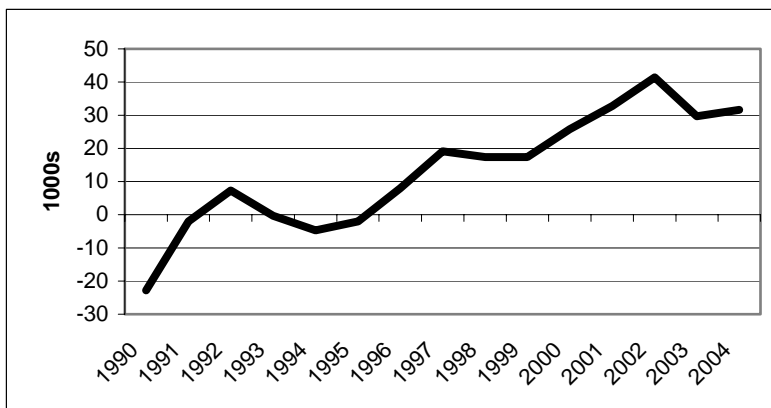
Apart from the provision of childcare, which was identified as a possible intervention to reduce the gender pay gap, flexible work arrangements may also contribute to greater equality by allowing individuals who would otherwise not be active in the labour market access to employment.

The flexible arrangements considered by Russell, Smyth and O'Connell (2005), include part-time working, flexible hours, job sharing and home working. Apart from the latter these arrangements proved particularly attractive to females, which suggests that flexibility would be expected to particularly improve gender equality. The findings of the study point to very different impacts of the various flexible work arrangements. While part-time working reduces stress, it is also associated with lower hourly earnings suggesting that this arrangement is typically offered at lower levels in an organisation and could result in a larger gender pay gap. In contrast, the higher-level workers are more likely to avail of flexible working time arrangements, which result in higher autonomy and reduced work pressures but do not reduce stress. Similarly, employees that work from home tend to have higher work pressures and stress but also tend to have higher earnings.

While Ireland has a long history of emigration, over the last decade Ireland has experienced substantial immigration flows. Since these immigration flows differ from the previous positive net-migration flow during the 1970s when many Irish emigrants returned, in that the current flow is substantially driven by non-Irish individuals, Ireland now has significantly larger ethnic minorities. Importantly, the average educational attainment of immigrants is higher than that of the Irish population, so that this inflow adds substantially to the supply of skilled labour. However, as Barrett, Bergin and Duffy (2006) show, immigrants suffer an 'occupation gap' in that on average the nature of their employment does not reflect their level of education. This gap could be due to a number of factors. These include language barriers, qualification recognition and lack of integration into social networks. Importantly, the occupation gap has an economic cost in that the 'underemployment'

constitutes a waste of resources, particularly in a tight labour market. If immigrants that arrived in Ireland between 1993 and 2003 had found employment commensurate with their qualifications, GNP would have increased by approximately 0.5 per cent.

Figure 9.2: Net-Migration 1990-2004



Source: Central Statistics Office.

As was highlighted above, those with long-term illnesses and disabilities are particularly at risk of poverty. This may be due to inability to participate in the labour market and therefore reliance on income supports or discrimination. Data published by the Central Statistics Office (see Table 9.1) shows that the number of persons aged between 15 and 64 years who suffer long-term illness or disability is increasing not just in absolute terms but also as a proportion of the total (from 10.3 per cent to 10.9 per cent). Furthermore, the proportion of those with a disability or long-term illness who are in employment has decreased. This decrease has not resulted in higher unemployment rates but in higher inactivity rates.

Table 9.1: Persons Aged 15 to 64 Years Classified by Whether They Have Long-Term Medical Problems or Disability by Employment Status

Year	With Health Problems Or Disability		No Health Problems or Disability		Health Status Not Stated		Total	
	2002	2004	2002	2004	2002	2004	2002	2004
Total Persons (1,000s)	274.2	298.3	2,239.7	2,419.3	139.9	24.6	2,653.8	2,742.2
In employment (1,000s)	109.9	110.8	1,534.9	1,621.5	83.2	16.5	1,728	1,748.8
Unemployed (1,000s)	7.5	9.2	66.4	81	2.9	0.4	76.8	90.6
Not active (1,000s)	156.8	178.3	638.4	716.8	53.8	7.8	849	902.9
	%	%	%	%	%	%	%	%
In employment	40	37	69	67	59	67	65	64
Unemployed	3	3	3	3	2	2	3	3
Not active	57	60	29	30	38	32	32	33

Source: CSO Quarterly National Household Survey, Disability Update Q1 2004.

9.3 NAP/ Inclusion and the NDP

Gannon and Nolan (2004) consider social inclusion issues for the disabled. *Inter alia* they found that even accounting for age and gender differences, the educational attainment of the disabled is significantly lower. Labour force participation is also significantly lower particularly for individuals with more severe disabilities, which may reflect ability or discrimination, which discourages individuals from participating in the labour market. Interestingly, apart from the lower participation rate no pay gaps were found, suggesting that there is no systematic discrimination within the workplace.

While the next NAP/inclusion, which is being prepared in parallel to the NDP, will be a central strategy of the Government to deal with social cohesion over the medium term, given the wide remit of the next NDP and the longer period over which it will be in operation, this must also reflect the NAP/inclusion goals.

The economic rationale for the high priority of equality and social inclusion may not be obvious. Nevertheless, an economic case can be made for the inclusion of the NAP/inclusion principles in the next NDP. If particular groups are excluded from any aspect of public and economic life their potential will be wasted. By actions designed to ensure equality of opportunity and genuine inclusiveness these resources can be utilised. Of course, equality of opportunity does not mean that everyone will avail of these opportunities.

Given the strong economic performance Ireland has had an easier task than many other countries in achieving the employment target. However, fast growth may not lift all boats and indeed could result in widening income dispersion. In this respect those that are not economically active are particularly at risk. Thus, policies that remove obstacles to employment for those currently not active but able is a particularly high priority. Tackling these obstacles by necessity must address a range of obstacles, including discrimination leading to low activity rates among the disabled and the gender wage gap. Fast growth has resulted in pressures, particularly in the housing market, which could result in higher poverty rates as individuals find it harder to secure affordable accommodation.

SUMMARY OF INVESTMENT PRIORITIES

Given the very complex and multifaceted nature of poverty and exclusion, quite a number of the investment areas considered in this report impact on poverty and exclusion. In particular, investments in housing, human resources and health play an important role in achieving the NAP/inclusion goals. However, other investments For example, on rural development also help in reducing exclusion. It is, therefore, useful to summarise the contribution that the proposed investments will make.

The most important investment areas which impact on equality and social inclusion are:

- Housing.
- Human Resources.

- Health.
- Childcare.

Furthermore, investments in the areas of transport, community development and rural development also make important contributions to equality and social inclusion.

HOUSING

Substantial investment in the areas of social and affordable housing has already been made as part of the current NDP. On the basis of the analysis in this study, it is estimated that the demand for housing units will remain at a high level up to 2011. Given the affordability problems especially for key vulnerable groups, social and affordable housing will, therefore, continue to play an important role. While the five broad measures, which comprise the Housing Priority make sense in that they are broadly characterised by tenure, the schemes under each measure could be streamlined more effectively. There is an urgent need to rationalise the existing schemes and supports and their eligibility criteria in order to deliver a more streamlined set of housing policy interventions with clear objectives, targets and output levels. This should make the schemes more accessible to the target groups while at the same time improving efficiency.

We recommend that a more balanced mix of tenures, including more affordable housing and more use of schemes using the private rented sector, such as the Rental Accommodation Scheme be pursued. The spend on social rented accommodation by the voluntary housing sector should be maintained, given its focus on providing rented accommodation for key groups with special housing needs, such as the elderly, the disabled and the homeless.

HUMAN RESOURCES

At both primary and secondary levels, a major priority remains the needs of those children who are currently being failed by the system. Their difficulties are multi-faceted and while the outcome is educational failure and or drop-out, the answers to the problem are not to be found within the educational system alone. It will be important to integrate measures to address educational disadvantage with other measures to counter poverty and social exclusion. Within the education system, there is also a strong rationale for the expansion of pre-school and early childhood education for disadvantaged groups. At second level, a key objective should be the 20 per cent of school leavers who leave without having completed the Leaving Certificate. In both sectors, also, it will become essential to devote more resources to meeting the needs of pupils with physical and learning disabilities. Diversity through immigration is to be welcomed, but will require additional resources to ensure that the 'New Irish' children are successfully integrated into Irish society, into the educational system, and, eventually, the labour market.

Measures to assist two groups in particular should be prioritised: early school leavers experiencing difficulties in accessing

employment and the long-term unemployed. In relation to both priority target groups, the decline in numbers should allow more intensive interventions. Recent years have seen significant increases in participation in higher education, and the most recent evidence suggests that the increased participation levels have been associated with a reduction of some of the most glaring socio-economic inequalities in access.

HEALTH

The healthcare system benefits the whole population. However, particular aspects of health expenditure especially in the non-acute care area have a significant impact on equality and social inclusion, through supports for groups that are especially vulnerable to poverty. The non-acute care measure aims to provide facilities for a range of different groups, including the disabled, elderly, the mentally ill, at risk children, and the wider community. The non-acute/continuing care measure is of considerable importance from a social inclusion and equality point of view. We, therefore, recommend that investment in this area be increased, despite the relatively slow progress under the current NDP.

CHILDCARE

Provision of childcare has a number of beneficial impacts in terms of equality and social inclusion. It supports equality by facilitating the participation of woman in the labour force and it supports child development, particularly for disadvantaged children and, therefore, improves their life chances. This is particularly important in that it helps children overcome the developmental handicaps often associated with poverty and it can enable parents to develop skills through participation in education and training courses or to enhance their incomes through paid employment.

While it is difficult to predict the likely level of demand for centre-based childcare, and the degree to which non-grant aided private sector will persist or develop alongside that provided under the EOCP and NCIP combined, the 50,000 additional places which the NCIP is designed to provide would seem to be a reasonable level of provision for new State-supported childcare places.

For the period 2010-2013, the focus would need to be broadened to take account of the need to improve and expand early childhood education, investment in early education targeted at the disadvantaged is included in the education section but is predominantly current costs.

The increased emphasis on quality, early education, staff training and retention and the likely need for continued staffing subsidies to meet social inclusion objectives all suggest that the ratio of current supports to capital supports should be maintained.

OTHER AREAS

In relation to transport the recommendations regarding public transport are important for social inclusion since public transport is the predominant mechanised form of transport for poorer people. *The Mid-Term Evaluation* found no concrete examples of how services to disadvantaged communities have been improved. The exception relates to the pilot Rural Transport Initiative where social and community groups reported that the initiative is proving successful in providing those in rural areas with access to vital services. Some of the rural development measures mentioned above are targeted particularly at the unemployed and, therefore, make a contribution to reducing poverty. In general the wider investment proposed in this study will impact on poverty and social inclusion by supporting sustainable employment growth.

CURRENT ACTIVITY ON EQUALITY AND SOCIAL INCLUSION

The above section has summarised some of the main investment areas that will make a contribution to achieving the NAP/inclusion aims. However, these investment areas leave some important gaps in relation to inclusion measures for specific vulnerable groups. These were covered in the current NDP through a number of measures which were evaluated as part of the *Mid-Term Evaluation*. It is therefore useful to review these measures and identify investment priorities going forward.

The activity of the current NDP to tackle equality and social inclusion issues is through a range of measures. For example, the *Equality* measure is aimed specifically at initiatives to tackle barriers to equal participation of woman in the workplace. While this is clearly a useful activity it is too narrow in the sense that it focuses merely on equality for woman and not other groups such as the disabled. *Family Support* and *Community Development* are aimed at enabling disadvantaged communities to participate in local development, training and employment. There is a focus on information dissemination and education. A particularly useful aspect relates to the enhanced programme of support offered to individuals with complex needs, which tend to be the most persistently excluded.

The Youth Services measure provides support for youth information services and facilities for young people particularly in communities affected by high rates of drug use. The latter is clearly a useful activity as it is likely to reduce the rate of drug abuse and aids the integration of young people in such communities. However, the Youth Services Grant scheme is not specifically aimed at disadvantaged youth.

RECOMMENDATIONS

One key recommendation concerning these measures relates to targeting. In many cases the aim is to address issues in deprived communities. These need to be targeted efficiently. The experience from the current NDP is that spatial targeting has in some cases not taken place, while for some measures the targeting has been good.

Often individuals who are socially excluded face a complex mix of issues that prolong their exclusion. Tackling these multiple problems requires interventions from a range of agencies. This should be facilitated through co-ordinated assessment and referral to the appropriate agency. The fact that the number of long-term unemployed has remained constant may be due to a failure to co-ordinate the appropriate interventions for this group. Reintegrating them, as far as is possible into the labour market is likely to carry a high return.

The equality measure currently only refers to gender equality. Clearly other groups also suffer from discrimination and inequality. These include travellers, the disabled and ethnic minorities. Therefore, apart from continuing with the existing measures it appears opportune to introduce a new measure to ensure better integration of the migrant community in Ireland. Ireland has seen unprecedented immigration flows not just of refugees but mainly from other EU countries. There is evidence that immigrants often possess high qualifications that, however, are not reflected in the type of job they find. This may be due to language barriers or problems with the recognition of qualifications. Clearly, overcoming such barriers would allow immigrants to make a larger contribution to the Irish economy by increasing the supply of skilled labour. Furthermore, as immigration continues, steps need to be taken to prevent marginalised ghettos from forming, which will hamper subsequent integration efforts. In this respect it would be useful to consider the experience of other countries that receive substantial immigration flows.

Diversity management is an ongoing process of ensuring reasonable accommodation of diversity in Ireland and to quote the NPAR "...this means taking account of the practical implications of cultural diversity in the design and implementation of policies, programmes and organisational practices to ensure an inclusive society." This is achieved through a whole system approach i.e. mainstreaming, benchmarking, targeting and engagement so as to manage the active and positive participation of all groups in society and supporting general acceptance of the changes resulting from increased diversity. International diversity is seen as an economically advantageous strategy. As a country, a diverse, tolerant and vibrant society in particular is likely to play an important role in attracting further talented and creative individuals.

Table 9.2: Financial Recommendation

Measure	Recommendation	2006 (€million)	2007-2013 Average (€million)
Equality	Increase (expanded measure)	3.9	8
Crime Prevention	Same	12.7	12.7
Youth Service	Reduce	51.72	45
Drugs Initiative/Young People Facilities and Services Fund	Same	40.0	40
Community Development & Family Resources	Same	92.5	92.5
Total		200.82	198.2

10. NORTH-SOUTH

The National Development Plan (NDP) for Ireland is being drawn up in the context where Northern Ireland has already published its *Investment Strategy for Northern Ireland 2005/2015*. This gives significant information on the infrastructural investment likely to take place North of the border. This information is important in drawing up the NDP because of the extent to which the economic futures of the two jurisdictions are intertwined. In particular, the economic future of the North-West of Ireland will be heavily dependent on the economic future of the city of Derry/Londonderry over the coming decade.

In considering the priorities for the next NDP it is important to consider what infrastructural investment in Northern Ireland would support development south of the border and how the current *Investment Strategy for Northern Ireland (ISNI)* reflects these needs. The converse of this is consideration of what investment under the NDP could support economic and social development north of the border.

The ISNI reflects rather different priorities for physical infrastructural development in Northern Ireland compared to the planned envelope for the NDP out to 2010 reflected in the numbers published in *Budget 2006*. There is much greater attention given to health, education and housing whereas in the NDP transport is the overriding priority. To some extent the allocations represent different endowments of infrastructure for historical reasons and consequently, different needs. However, it probably also represents differences in priorities.

Table 10.1: Allocation of Investment, Per Cent of Total

	Republic	North
Transport	38.1	15.7
Health	7.6	18.2
Education	8.8	26.1
Public Administration	12.3	7.1
Productive Sector	7.4	2.6
Agriculture	2.9	2.5
Housing	7.6	12.7
Environment	15.2	15.1

Table 10.2 shows the actual annual allocations in euro per head. This illustrates the fact that the investment effort in the NDP is much greater than in the ISNI. The NDP allocations amount to around 80 per cent more than the total allocations in the ISNI. The allocation for transport in the NDP is over four times that in the ISNI. The ISNI is much more heavily weighted in favour of social infrastructure, broadly defined.

In the case of education the ISNI allocations underpin a strategy for significant investment in second-level education. This probably represents a need for a “catch up” following on the Costello report for the North. In the case of environment the proposed investment in the North is front ended loaded and reflects a need to ensure compliance with the EU urban waste water directive. For the Republic this compliance has been largely achieved through very substantial allocations over the last fifteen years in previous NDPs.

Even with the need to catch up in the North in social infrastructure (especially in education) it is slightly surprising that in the North the actual allocations per head for health and education are so much higher than for the Republic in absolute terms. Also, the fact that the allocation for social housing in absolute terms is similar in the North to that in the Republic, in spite of the much greater pressure on the housing stock in the Republic, may represent different priorities as well as differences in the ability of the building sector to deliver the necessary infrastructure at reasonable cost.

Table 10.2: Allocation Per Head Per Year, € 2005 Prices

	Republic	North
Transport	981	225
Health	195	261
Education	226	375
Public Administration	317	102
Productive Sector	191	37
Agriculture	74	36
Housing	196	182
Environment	392	217
Total	2,573	1,436

From the point of view of the Republic a major priority is the development of Derry and its hinterland, including Donegal. The decision in the North to upgrade the Derry-Belfast road is probably the most important measure that can be undertaken to enhance Derry’s growth prospects, and hence those of Donegal. In addition, it would benefit that region if the Dublin-Derry road were upgraded. Plans are in train in the NDP for enhancement of that road in the Republic but it would be beneficial if resources were available to bring forward work on the road within the North.

Generally the plans for road infrastructure in the Republic (under the NRA) and in the North are well integrated. The fact that the resources available in the North for investment are much more limited than in the Republic will result in a somewhat slower implementation of the co-ordinated road plans North of the border than in the Republic.

For both Northern Ireland and the Republic the rapid implementation of plans to enhance the electricity transmission infrastructure on this island is very important. This investment will not require taxpayers money from either the North or the Republic, being financed by electricity consumers in both jurisdictions. The

need for this investment is driven by purely commercial concerns. Fitz Gerald (2004) and Fitz Gerald *et al.* (2005), has shown that an all-island electricity market will benefit both economies. These studies also showed that the realisation of the benefits of this market (due to begin on 1 July 2007), would require this investment in transmission to double the existing link between the North and the Republic.

The obstacle to this investment is not finance. Rather it is the possibility of significant planning delays in one or other or both jurisdictions. Within the Republic it will be important that the planning system is changed so as to ensure that the kind of delays which have slowed investment in transmission in the past do not delay this important investment project. The need for speed does not mean that the normal opportunities for consultation to influence the precise route of the infrastructure should be bypassed. Rather it means that this consultation, including any appeals, should be conducted efficiently.

The energy needs of this island may also require additional investment in a second East-West electricity interconnector to Britain. This would in all likelihood be built from the Republic to Britain. However, the benefits of such enhanced interconnection would flow to consumers in the North, just as consumers in the Republic are already benefiting from the interconnector to Scotland already in place in the North. Once again the cost of any such enhanced interconnection will be carried by consumers, not taxpayers and the obstacles to accomplishing any needed investment will lie more in the planning system.

One of the biggest planned investment projects in Northern Ireland is a new hospital in the South-West of Northern Ireland. Such an investment should have implications for the provision of medical services in border areas of the Republic. Depending on the location of the new facility it could theoretically be possible for such a facility to provide services for some of the neighbouring counties of Monaghan, Cavan, Leitrim, Sligo and Donegal. The possibility of an integrated plan for the provision of key health service facilities in the border regions of the Republic and the North should be examined. Already the Altnagelvin hospital in Derry provides services to the people of Donegal. However, the administrative complexity of implementing a more integrated health service on this island may prove a major obstacle to getting efficient utilisation of valuable new infrastructure in the health sector.

The plans in Northern Ireland by ILEX for the development of Derry could, if successful, provide significant benefits to Donegal. The successful and sustainable development of that part of the Border region of the Republic will not be possible without significant growth in Derry and its hinterland. The plans for that part of the BMW region of the Republic should be integrated with the plans for Derry's development. As part of this integration some additional investment will be needed to enhance transport infrastructure centred on Derry. It should also make better use of the health and education infrastructure in the region. This enhanced

co-operation might involve enhanced links between the Magee campus in Derry and Letterkenny.

While the provision of health services in the North may be more successful than in the Republic, in the area of third-level education there are likely to be opportunities for infrastructure in the Republic to provide greater services in the North. As indicated above, enhanced co-operation between Magee and Letterkenny IT could prove valuable to the greater Derry hinterland. Generally there is a skills shortage in the Derry area (see the ILEX report) as well as in Donegal, where educational participation rates have tended to be low in the past. Similarly Dundalk IT, should exploit further its hinterland North of the border to provide services in the Newry region.

11. ACCOMPANYING MEASURES

The provision of public investment goods should be met in the most efficient and cost effective way. This requires consideration of the usage of these infrastructures, and thus of consideration of access charges. Determining the optimal level of provision needs to be undertaken in the context of an explicit pricing policy framework. Pricing policy also helps to optimise the substantial endowment of existing public infrastructure. There are other accompanying measures, which also need to be put in place along with investments. The list of desirable accompanying policy components includes:

- Correct pricing.
- Timely delivery.
- Integration with land-use planning.
- Regulation.
- Resource allocation and management.
- Project Selection Criteria, efficient management.

11.1 Pricing

The road network in particular is free at the point of use, excepting only a small number of point tolls and the fuel tax which, while a user charge, is only tenuously related to economic or social costs of road use. There are other and substantial taxes on motoring, but they merely raise revenue and are not related to road use or to the deterrence of social cost imposition. This means that the congestion externality is not properly charged for, and hence that, especially in cities, road space is underpriced. The amount of congestion generated is accordingly in excess of the social optimum, as is the attendant discharge of environmental emissions.

In virtually all economically advanced countries, the policy response has been to subsidise public transport, which results in a situation where *all* modes of vehicular urban transport are too cheap, especially at peak. The result is extensive peak-time congestion, and public demands for capacity expansion to meet peak demand.

Even in the absence of externalities, it is not economically rational to expand capacity to eliminate peak congestion, especially where peak usage is inadequately priced. To do so liberates currently suppressed demand, and can make the peak sharper, as the peak-spreading effect of current congestion is diluted. Since peak users are not faced with the full economic and social costs they impose,

peak demand is not a real indication of the level of activity that should optimally be catered for.

The landfill levy is an important economic instrument to internalise the environmental costs of landfills. It may also be appropriate to introduce an incineration levy when such facilities become operational, though this should be flagged well in advance. However, we would question whether it is appropriate that the levy should be the same throughout the country and for all facilities.

In theory, the levy should reflect the marginal external cost generated by the operation of the facility in question, taking into account the standard of construction, whether there is energy recovery, and the environmental characteristics of the surroundings (e.g. proximity of water bodies and human populations). It may be that some facilities should have a lower levy while others should have a higher levy.

Absence of metered water-charging of households means that consumption of water is higher than it should be. Metered consumption per day in England and Wales is under 140 litres per head (OFWAT, 2005). In Ireland it is likely to be 170 litres per head per day (Fitzpatrick, 2005a). Whether or not it would be economic to introduce metered charging is something that can be assessed, using a standard appraisal that takes account of financial and economic values (EC, 2001). This exercise should be undertaken as a priority and the results made publicly available for informed discussion. The emergence of water supply constraints in parts of the country makes this a priority issue.

Failure to charge domestic water use could see excess capacity being provided and development of water-saving technology not receiving the support it deserves. In the absence of a programme to introduce charging other incremental measures could be brought in, such as metered charging of holiday homes (Fitzpatrick Associates, 2005a).

If the appropriate price signals reflecting the cost of emitting greenhouse gases were provided by fiscal instruments there might be no need for even limited State intervention. However, as reflected in Fitz Gerald (2004), the new EU emissions trading scheme (ETS) is flawed as it discriminates against renewables by providing an indirect capital subsidy to fossil fuel electricity generators. The entire system of energy taxation requires to be re-assessed in the light of carbon-emission objectives.

11.2 Speedy Delivery

The delays encountered in planning and delivering major infrastructure in Ireland are abnormal by the standards of our EU neighbours. This has affected all aspects of infrastructure, including roads, public transport, telecommunications and energy. In the case of major public infrastructural investment currently being undertaken the number of stages that had to be gone through in implementing a particular project contributed to serious backlogs. For the future it will be important that the recently published *Strategic Infrastructure Bill* brings about a much more streamlined

process. In addition, all projects to be implemented over the next decade should go through the planning process as soon as possible so that projects are ready to be implemented as and when it is appropriate. We welcome recent Government moves towards introducing streamlined planning processes for the delivery of essential infrastructure such as landfill and incinerators, as well as the possibility of “community gain” to compensate surrounding communities.

Even when the planning process itself has been fully streamlined there is still a potential problem arising from the frequent recourse to the courts resulting in significant delays on major projects. It would be desirable that wherever possible, rather than delaying projects, the courts would provide for financial compensation where the complainant establishes a case, and the legal viability of this option might be explored. At present the cost to society at large of the delay due to failure to complete vital projects is never considered by the courts. Because of the impossibility of so doing, the large number of substantial losers arising from delays, in some cases society as a whole, are never compensated, even when the complaint is deemed to be unfounded. While the benefits to society from new infrastructural projects are normally assessed as part of a cost-benefit study these benefits, if foregone through delays, cannot be restored through the judicial process.

Another way to reduce delays in the provision of infrastructure is to standardise the design of facilities, so that the time required for the design stage of a project is minimised and an application through the planning system can be progressed. In the area of design for roads the NRA has produced a design manual, while the Department of Education has also moved towards standardised design. Such an approach may also lead to efficiency gains elsewhere.

11.3 Integrated Planning

Our recommendations on allocation of funding take particular account of the NSS. However, there remains a major problem in the Dublin area where the city spreads out over at least seven different counties. Unless urgent action is taken to implement the guidelines so as to achieve a dense city along public transport corridors, there will be little prospect of implementing a fully efficient public transport system. An example of such a failure was the decision not to zone for high density around the DART extensions to Malahide and Greystones. In the absence of higher density this investment will not prove to have been justified. There is a need to ensure that there is an adequate supply of zoned and serviced land for residential development in development plans in order to provide flexibility and choice and to restrain land price inflation. This will be a key factor in driving down the rate of house price inflation over the medium term, particularly in those parts of the country where restrictive zoning has contributed to housing affordability problems.

Policymakers need to be aware of the linkages between housing, land-use, transportation and environmental policies. The market for

building land is highly regulated, and the highly restrictive zoning policy has forced development out into the more distant hinterlands of our cities. As a result the spatial pattern of house building, which has emerged has encouraged long distance commuting, which has adverse implications for the environment in general and our emissions in particular. This gives rise to longer-term difficulties for the provision of public transport and also reduces quality of life.

The provision of housing needs to be integrated with the provision of other infrastructure, not just public transport, but also water, sewage, social infrastructure and other amenities.

A number of fixed rail projects were announced as part of *Transport 21*. For such projects to be economically viable it is essential that they are supported by land use planning decisions that ensure high residential and commercial densities.

Likewise, if the NSS is to be successful it will require the build up of critical mass in the gateways and hubs, which means that urban sprawl into the wider hinterland of the larger urban centres needs to be avoided. International research shows that there is a positive relationship between the density of production activities and productivity. Thus, high commercial densities are also important.

The need for new waste management infrastructure is ongoing, given population and economic growth, and in some parts of the country it is critical due to limited remaining capacity in existing facilities. New provision is, however, bedevilled by planning difficulties, driven in large part by local public concern and opposition. While proposed facilities must go through a full and proper planning process, streamlining of the system would be welcome.

Waste management facilities will never be popular with local communities, and actual or perceived environmental and health impacts may lead to a loss of amenity that is reflected in property prices. The question of compensation for this, at a household or community level, needs to be explicitly addressed. We welcome recent Government moves towards introducing streamlined planning processes for the delivery of essential infrastructure such as landfill and incinerators, as well as the possibility of “community gain” to compensate surrounding communities.

11.4 Regulation

Waste: Environmental regulation of the waste management sector is essential, and is the responsibility of Local Authorities as well as the EPA and its Office of Environmental Enforcement. There may also need to be explicit economic regulation, in order to fully capture the benefits of competition.

Landfills and incinerators are subject to significant economies of scale, so large facilities are more efficient than small ones. Left to its own devices, the industry will be inclined towards providing a small number of large facilities, with lower overall societal cost. However, this could lead to regional monopolies or oligopolies, where operators could potentially abuse dominant market positions. It may prove difficult to maintain more than one viable waste collection

service, particularly in smaller towns or rural areas, with the possibility again of local monopolies arising.³⁵

Where Local Authorities continue to be the only supplier of services in an area, there is a requirement to ensure that pricing reflects efficient levels of operation. Currently, Local Authorities act as suppliers, planning authorities and environmental regulators in the waste management industry. This means they are potentially conflicted in dealings with private operators, which could distort competition. With each Local Authority acting as regulator, there is scope for inconsistency geographically and temporally. A single regulatory structure applicable throughout the State would help encourage private participation in the market.

An economic regulator could also review whether economies of scale are being fully exploited in the delivery and operation of waste management facilities, in view of the regional approach being taken to waste management in the State (see below).

We understand the Department of the Environment, Heritage and Local Government plans to initiate a public consultation process on the need for a waste regulator in the course of 2006, and we would recommend a full Regulatory Impact Analysis be undertaken before deciding whether to appoint one. Should a waste industry regulator be appointed, incorporating the role into one of the existing economic regulatory bodies (e.g. the energy regulator) would be worth considering in order to minimise costs and tap into a ready-made bank of expertise.

Closely related to the regulatory issues is the commercialisation of the sector in that this can generate competition. Much progress has been made in commercialising the waste management sector over the last decade. However, Indecon 2005³⁶ demonstrates that full cost recovery is still not being achieved in Local Authority provided services. Full commercialisation implies that operators seek to recover not only their costs but also earn a return on their investment (whether they succeed is up to the market). Private operators automatically seek this, but it is also appropriate that the Local Authorities do so in order to provide a level playing field, as well as generating a return for the taxpayers' investment.

It is important that the administratively imposed regional structures do not impact on investment decisions for major infrastructure such as landfills and incinerators, specifically the number and size of these facilities. These should be decided on economic grounds, taking into account environmental implications. Considerable economies of scale exist in the delivery and operation of these facilities: fewer, larger landfills and incinerators will cost society less than a larger number of smaller facilities. Not to take

³⁵ See recent Competition Authority pronouncement (Decision COM/108/02, 30th August 2005). This indicated a preference for competitive tendering for collection services over regulation. Competitive tendering and economic regulation are not mutually exclusive, however.

³⁶ Indecon (2005) indicates a cost recovery rate of roughly 80 per cent in 2004.

this on board will impose considerable excess costs on society. The Department of the Environment, Heritage and Local Government's recent guidance to the effect that movement of waste across regional boundaries is not contrary to the proximity principle is welcome in this regard.

Telecommunications: The interrelated low supply and demand for broadband can potentially be resolved through the market. However, the State still has an important regulatory role and there must be concern that regulatory problems have slowed the deployment of new technology. The regulatory powers of Comreg and the Department of Communications, Marine and Natural Resources may need strengthening to deal with the industry, in particular in dealing with the dominant incumbent fixed-line operator, Eircom. The current model of regulation is designed to deal with a situation where the incumbent faces effective competition through technical change giving rise to competing technologies. However, new technologies do not appear to be providing such competition effectively and the telephone wire (or optical fibre) connection to individual homes and businesses remains a key in providing broadband services.

11.5 Resource Allocation Model

For many investment areas inadequate information was available to make firm recommendations. These include health, water and waste water. This points to the need to develop resource allocation models for all key infrastructure areas. In relation to road transport the Road Needs Study in 1998 set an important precedent in this respect.

Given the progress in the roads area an update of this study is likely to be useful, not in determining where new roads will need to be built but in order to schedule the maintenance of the improved system. This study has also made a contribution through the development of an initial, if somewhat crude, acute hospital bed needs projection model that incorporates the future dynamics of the population. In general, a useful starting point towards more efficient allocation of resources would be to thoroughly review capital stock adequacy in all infrastructure areas, beginning with an inventory audit.

Implementing a proper resource allocation model will prevent excess investment where supply could exceed demand and thus prevent resources from being wasted. For example, investment in arts infrastructure needs to be wary of the trap of encouraging the supply side of arts provision to the detriment of encouragement of the demand side (customers), thereby creating excess supply of art provision in relation to demand and unwittingly depressing artists' incomes.

Oversupply can also be minimised by ensuring that once facilities are provided the correct incentives exist to maximise usage and thereby benefit. User feedback should be facilitated. In the case of

11.6 Project Selection Efficient Management

arts and perhaps also sports facilities a centralised regular reliable source of information on future events is required.

The recommendations contained in this report are necessarily focused on the general priorities rather than specific project. The degree to which the return accrues to the investment in the next NDP is not only related to setting the correct broad priorities but also to the precise project selection. Thus, even in investment areas that are likely to yield a high return individual projects may yield no return and such projects clearly should not be selected. Consequently, proper project selection criteria need to be implemented.

In its *Guidelines* the Department of Finance lays out the requirements for appraising investment proposals (Department of Finance, 2005; CSF Evaluation Unit, 1999). These state that projects over €50 million should have a Cost-Benefit Analysis (CBA) carried out. More recently the Minister for Finance has announced a threshold of €30 million. A CBA is also stated to be appropriate for innovative projects costing above €5 million, which involve complex or specialised issues.

Water: Fulfilling the requirements of the Water Framework Directive, which has the objective of good water status by 2015, will require investment and it is up to Ireland to ensure that these deliver value for money. It is difficult to specify good investments without sound appraisal. A priority is to analyse the total costs and benefits of full metered charging, water abstraction, water conservation and waste water infrastructure.

Investment appraisals and cost benefit analyses face a well-flagged impediment, which is still inadequately addressed. This is the absence of parameters to be included in analyses, often relating to the benefits of the project. They include not only the valuations of the benefits, many of which are environmental in nature, but also the basic information on which to apply the parameters, such as the numbers of users of environmental benefits (e.g. statistics on leisure pursuits, including numbers of persons and days spent fishing and so forth).

By contrast, analysts in England and Wales have access to a body of information on valuations and on leisure pursuits. These parameters are collected, prepared and updated by the Environment Agency specifically with a view to aiding appraisal of water investments.

Social Inclusion: In order to fully reflect the goals on equality and social inclusion at programme level the project selection criteria need to reflect this horizontal principles for all measures. The *MTE* found that in practice, equality and social inclusion were not reflected in the selection criteria for many measures. Of course, in many cases the investment cannot reflect equality and social

inclusion and, therefore, the horizontal principle does not apply for these measures.

Even if the principle is reflected in the selection criteria these may not be reflected in a meaningful way or not applied thoroughly. In the current NDP incorporation of social inclusion and equality was confined to a statement that projects must comply with horizontal impacts and only in a minority was there a more detailed description of how this criterion is assessed e.g. using a deprivation index score for the area.

Subsequent reporting on progress regarding equality and social inclusion was often vague and poorly supported. Where indicators relating to social inclusion exist this is usually because a disadvantaged/vulnerable group are the sole targets of the measure. For example, some of the EHRDOP measures are confined to the long-term unemployed, lone parents or early school leavers, therefore indicators that relate to the participants, address social inclusion by definition. Indicators that assess the impact of more general programmes on the disadvantaged are extremely rare. There has been scant assessment, for example, of attendance at cultural events by people with limited mobility, despite improvements to accessibility of the venues *per se*.

Overall, while many measures say that social inclusion is incorporated into project selection criteria, there is little evidence on how this is followed through, which makes it difficult to identify the impact or whether alternative approaches would have yielded better results. This conclusion not only refers to some of the measures which are unlikely to have a large impact on equality and social inclusion but also to those areas where social inclusion is central.

Considerable work has been undertaken by the Combat Poverty Agency (CPA) to develop social inclusion indicators for the Regional OPs (Harvey, 2002a; Harvey, 2003; CPA, 2002). This work provides a very useful model of how these issues can be incorporated into both mainstream and targeted programmes. Given the experience of the MTE it is recommended that the approach developed by the CPA should be applied in the next NDP.

In a number of areas we highlight the duplication of effort, which clearly is not efficient. For example, in the housing area a multitude of measures aimed at providing social and affordable housing exist. Likewise in the arts a multitude of bodies are involved in arts support. The new committee called the *Arts and Education Committee*, drawn from the Department of Arts, Sports and Tourism and the Department of Education and Science has been established to help children to develop their “creativity and imagination as best as they can” (Minister J. O’Donoghue, 21st of October 2005). This initiative has the potential to promote co-ordination of the various arts services and concentrate on those areas where arts education is most under-resourced, and its findings should be considered.

12. TRANSPORT INFRASTRUCTURE

12.1 Introduction

In the current NDP the single biggest area of infrastructural expenditure is investment in transport. Overall, the decision to make the transport area the highest priority under the current NDP was supported by the *Mid-Term Evaluation* (Fitz Gerald *et al.*, 2003), which identified substantial returns to road infrastructure (see the discussion in Chapter 2). The high return suggested in the MTE derives from the fact that while Ireland has an extensive road network, the quality and capacity of that network lag substantially behind other developed countries.

Transport services are vital not just for the movement of goods but also for the movement of people. The manner by which adequate transport services can be provided is closely related to geographic factors, the nature of economic activity and the settlement patterns of the population. Given economic trends, population growth and changes in land use, as well as the heightened importance of sustainability issues, investment in transport infrastructure will continue to be of highest importance for the next NDP, albeit with a changed composition. In this Chapter we outline our recommendation for transport investment considering the latest trends, lessons from the current NDP and the *Transport 21* investment plan published by the Government.

12.2 Recent Transport Trends

The decision on transport priorities for the next NDP has to take cognisance of the latest and possible future trends in the demand for transport. Some key indicators are outlined in this section.

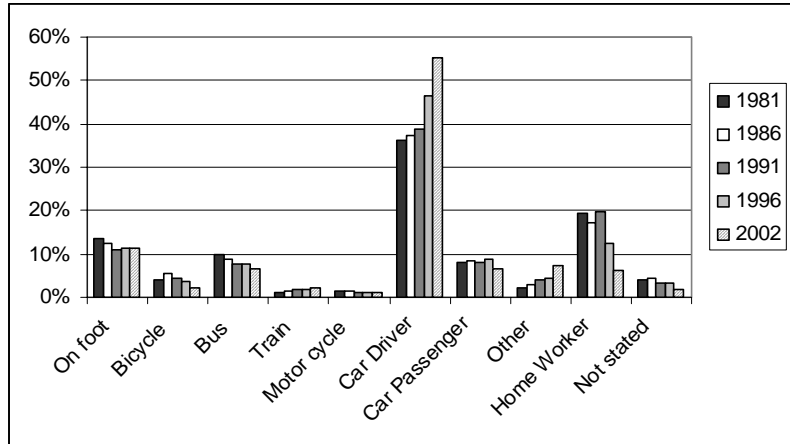
PERSONAL TRANSPORT

Trends in the mode of transportation used for commuting are important since they indicate the degree to which commuting patterns are environmentally sustainable and the types of infrastructure that have seen the greatest increase in demand.

Figure 12.1 shows the trends in the proportion of workers using various transport modes. The most striking trend relates to the increase in the proportion of individuals driving to work, which now stands at just over 55 per cent. The reduction in the proportion working from or at home is largely due to the decline in full time farmer numbers. With regard to public transport modes it is interesting to note that while bus transport has continually lost market share, train transport has increased its market share. Since

trains serve a smaller population than bus services, this increase in the aggregate market share is likely to be due to a substantial increase in market share in those localities served by trains.

Figure 12.1: Persons at Work Aged 15 Years and Over Classified by Means of Travel to Work



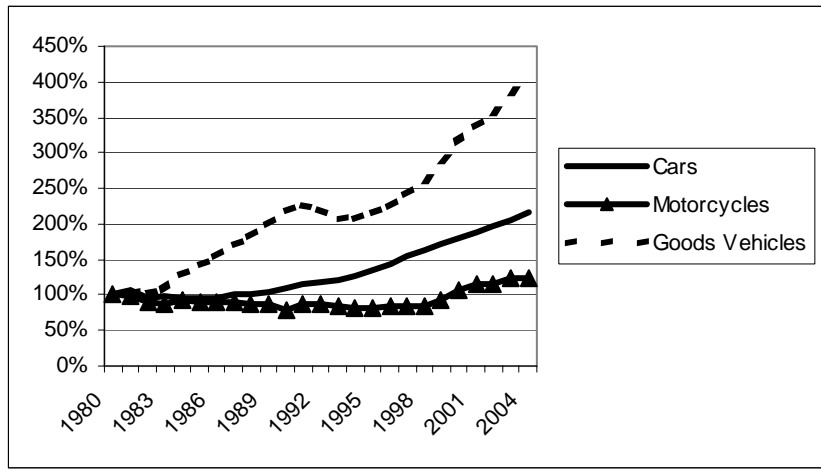
Source: CSO *Census of Population 2002*, Volume 9, Table 1.

As Figure 12.1 refers to proportions it does not indicate the very substantial increase in the number of commuters, which increased by 24 per cent between 1996 and 2002. Furthermore, the figure only refers to workers, and thus ignores travel to schools, colleges, shops, recreation etc. The Census does contain information on travel to school and college but not other sources of personal travel demand. The total number of pupils and students has decreased somewhat over time. However, the car based travel has grown even more substantially for this group than for workers in that in 2002, 36 per cent of those in education travelled as a car passenger while that proportion was just 26 per cent in 1996. In absolute terms the number of individuals travelling to educational institutes by car has increased by 71,000 between 1996 and 2002.

Overall, the analysis of trends in the mode of transport shows a decline in the proportion of individuals using sustainable modes such as walking, cycling and public transport. For workers this proportion has declined from 29 per cent in 1981 to 21 per cent in 2002, while for travel to school, college or university the proportion using sustainable modes has declined even more dramatically from 74 per cent to 57 per cent over the same period.

The increase in car based commuting is closely related to car ownership. As Figure 12.2 shows, the total number of cars under licence has increased very dramatically following a slight dip in the early 1990s. Overall car numbers have increased by 400 per cent. In contrast motorcycle numbers have increased only slightly while goods vehicles saw a substantial increase, which however was only half that for cars.

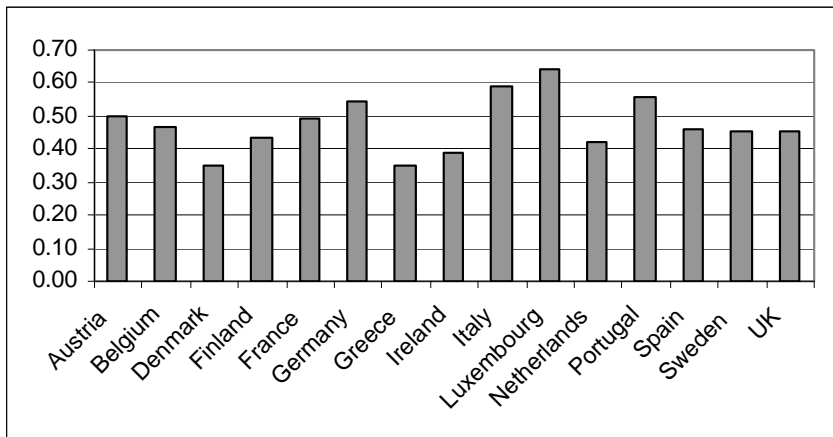
Figure 12.2: Total Personal Vehicles Registered, Relative to 1980



Source: Department of the Environment, Heritage and Local Government. *Irish Bulletin of Vehicle and Driver Statistics*, 2004.

Road congestion around the major urban centres in Ireland has been increasing substantially over recent years. This is at least in part driven by the growth in car numbers. In order to gauge the likely future trend in car ownership it is useful to compare Irish car ownership rates with other EU countries. As Figure 12.3 shows, the car ownership rate in Ireland, at 0.39 cars per person, is below the EU-15 average of just short of 0.5 cars per person. Since car ownership is positively related to income, and Ireland has converged to the EU average income it is reasonable to expect that Ireland will in due course also converge to the EU average. At current growth rates, of around 0.01 cars per person, this would take approximately 11 years. However, given that income convergence has already been achieved, car ownership may converge faster, which will speed up the increased pressure on the infrastructure.

Figure 12.3: International Comparison of Cars per Capita



Source: Own Calculations using data from Eurostat, *New Cronos Database*.

The relationship between traffic volumes and congestion is highly non-linear. Small reductions in traffic volume, once a system reaches capacity, induce sharp improvements in journey time. Thus, in busy cities with peak-time congestion, peak pricing only needs to deter a small proportion of road users in order to have a worthwhile impact in reducing the economic, social and environmental costs of congestion, and this is confirmed by studies of charging schemes in a number of cities including London.

It is sometimes assumed that the majority, or even all, of the morning peak volumes (the morning peak tends to be bigger, because more concentrated, than the evening peak) should be accommodated, since the trips are presumably work-related and accordingly seen as 'essential'. This assumption should be treated with caution. Table 12.1 shows the volumes crossing Dublin's canal cordon in 2002, the year of the last Census.

Table 12.1: Numbers Crossing Dublin's Canal Cordon, Morning Peak 2002

	Bus	Rail	Motor Vehicle*	Walk	Cycle	Total
Number	65,483	25,339	83,364	16,603	4,675	195,464
as %	33.5	13.0	42.7	8.5	2.4	100.0

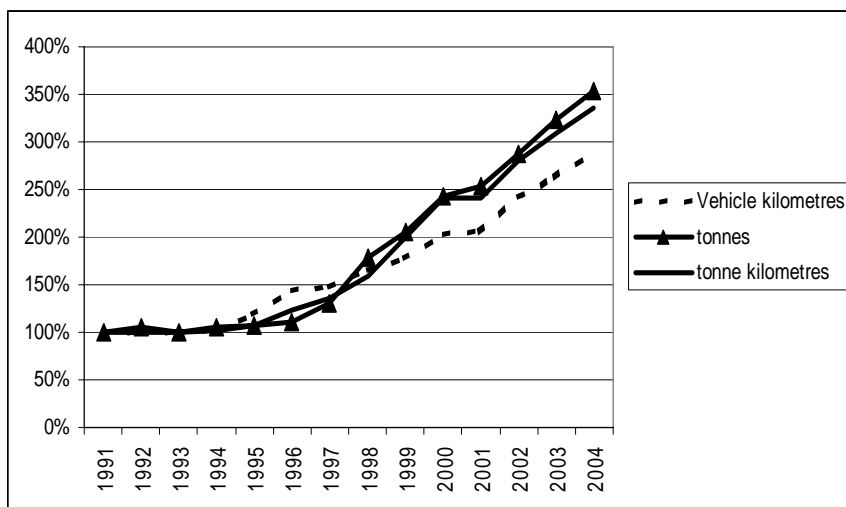
Source: Dublin City Council.

*Includes taxi, commercial vehicle, motor cycle.

According to the *2002 Census*, there were 135,439 people employed in the area inside the canals in 2002, of whom 15,619 also lived inside the canals. Thus, assuming all peak traffic is work related, about 120,000 people out of the total of 195,464 entering in the morning peak would have been going to work. There is of course some through traffic which both enters and leaves the canal cordon during the morning peak, and some non-work trips might also be deemed 'essential'. But as many as 75,000 of cordon-crossers may not have been going to work in 2002, and it may be rather extreme to assume that there is some imperative about catering for every single trip currently made in the morning peak, when road users are not faced with any charge designed to reflect the social costs imposed.

GOODS TRANSPORT

While the movement of individuals is an important function of the transport system, the movement of goods is equally important in a country that still maintains a high share of production activities. As Figure 12.4 shows, freight transport has increased substantially, which is of course not surprising since the growth in the economy will have led to an increase in the output of goods. Interestingly, while the tonnage transported and tonne kilometres have increased by about 350 per cent, as was shown above, the number of vehicles has increased by just 200 per cent over a longer period. This implies that the vehicles are utilised more extensively and/or that the capacity of the vehicles has increased.

Figure 12.4: Road Freight Indicators (1991=100 Per Cent)

Source: CSO Road Freight Transport Survey, various issues.

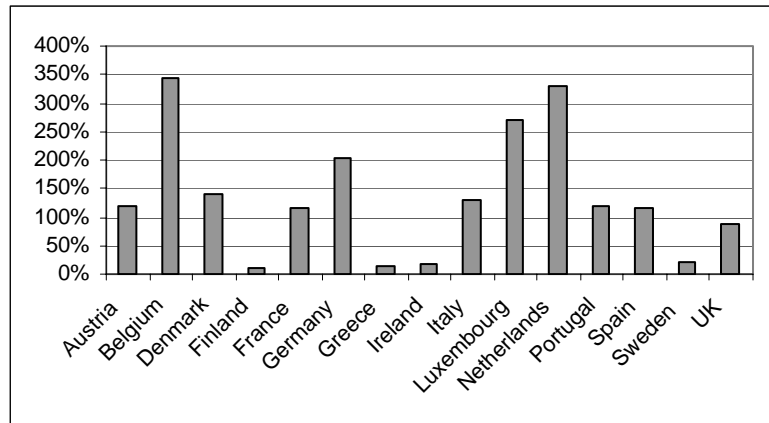
It is also useful to consider the use for which the commercial transport is put. Almost 30 per cent of tonne kilometres are accounted for by Crude and Manufactured Minerals, which includes building materials. This suggests that the high level of activity in the building and construction sector, part of which aims at reducing congestion through the building of increased capacity, is in itself contributing substantially to congestion. It is likely that during the course of the next decade there will be a substantial reduction in this traffic as the building and construction sector adjusts to a more normal level of activity (see Chapter 4.) Other sectors that account for substantial proportions of tonne kilometres are agricultural products (11 per cent) and foodstuffs (21 per cent).

INFRASTRUCTURE STOCK COMPARISONS

The measurement and international comparison of infrastructure stocks is difficult due to data limitations particularly regarding quality measures. While Ireland has a road density that is close to the EU average, the largest proportion of Irish roads are of relatively low capacity and quality. This is undoubtedly related to the low population density and scattered distribution of the population compared to other EU countries, which requires a relatively high roads density to service the population. If one compares the motorway density, then Ireland, with 16.5 per cent of the EU average, is well behind the rest of the EU-15 (see Figure 12.5). That figure also shows substantial heterogeneity across European countries with regard to motorway density with, Belgium, Netherlands, Luxembourg and Germany having the highest densities and Finland, Greece, Ireland and Sweden possessing a low motorway density. The low motorway density in the Scandinavian countries is related to the low population density in those countries.

In the case of Greece, the relatively low per capita GDP and the topography of that country are likely to be the reason for the short length of the motorway network relative to the land area.³⁷ Thus, Ireland is an outlier in this comparison.

Figure 12.5: Index of Motorway Density (Kilometres of Motorway Per Square Kilometre of Area, EU-15=100), 2003



Source: Own Calculations using data from Eurostat, *New Cronos* Database. The Motorway stocks for Denmark, Germany, Portugal and Spain are for 2002, while those for Greece, Italy and the Netherlands are for 1992, 1999, and 2000 respectively.

Of course roads are not the only transport infrastructure and it is, therefore, also important to consider other types of infrastructure. Using Eurostat data the density of the rail network can also be compared across EU countries (see Figure 12.6). Again the comparison is facilitated by using an index relative to the average of the countries in the sample. Again Ireland lags substantially behind with 33 per cent of the average.

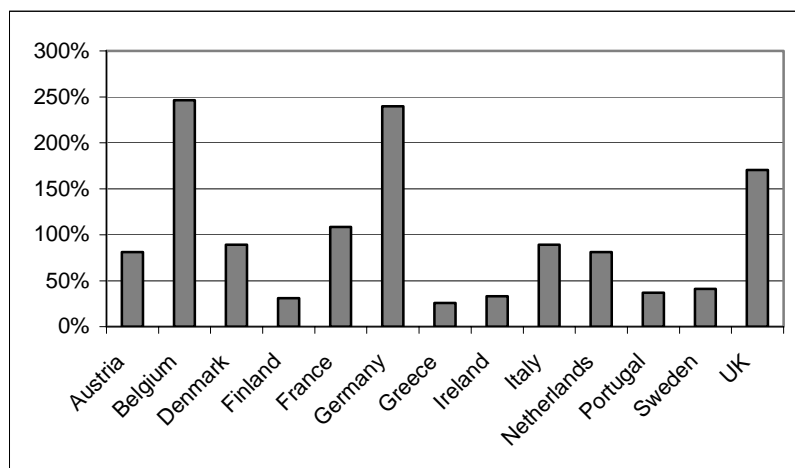
While a number of countries possess a rail network that is close to average, Belgium, Germany and to a slightly lesser extent the UK have networks that are far in excess to the average. The presence of rail infrastructure is usually a historical legacy with substantial initial investment having taken place in the 19th century, with subsequent investment to maintain and upgrade the system rather than to expand the systems. It is therefore not surprising that the total length of network is declining in many countries. For example, the network in the UK is now only half the length of that in 1946.

Importantly, while a positive relationship between roads and per capita GDP holds in most countries, the same cannot be observed for railways. For the UK the correlation over time between GDP per capita and length of railway network is -0.7, which is statistically significant. This is important in the choice of infrastructure

³⁷ Islands and mountains make up a substantial proportion of the land area of Greece.

investment since roads tend to yield a higher return than railways at least for inter-urban connections (see Affuso *et al.*, 2003)

Figure 12.6: Index of Railway Density (Kilometres or Railway Lines Per Square Kilometre of Area, Sample Mean = 100), 2003



Source: Own Calculations using data from Eurostat, *New Cronos* Database. Note that the mean, which is 100 per cent is calculated for only the countries in the figure which is equivalent to EU-15 minus Luxembourg and Spain. All data refers to 2003 except for Austria, Belgium, Germany and Portugal where the data refer to 2002, Denmark 1998 and Ireland and the Netherlands where the data is for 2001.

FUTURE TRENDS

As was already indicated above, given that car ownership rates are well behind the EU average while income has exceeded the EU average, and given the positive relationship between income and car ownership, the likely trend is for rising ownership at perhaps even an increasing rate. The National Roads Authority (NRA) commissioned a study to project future traffic on national roads (Transport Research Laboratory, 2002) which is further outlined in NRA (2003). This study also utilises the relationship between income and car ownership and, using unchanged usage patterns, it predicts that compared to 2002 total traffic by cars and light goods vehicles on all roads will have increased by 31 per cent by 2013. This increase is projected to fall disproportionately on national primary and secondary roads where traffic will increase by 44 and 36 per cent respectively. Heavy goods vehicle traffic is projected to increase by 30 per cent with an increase of 43 per cent for national primary routes and 37 per cent for national secondary routes. Continuing beyond the horizon of the next NDP traffic is forecast to increase further.

Of course the assumption of unchanged usage patterns may be questioned and indeed if alternative transport modes become more attractive then traffic may not increase by as much. In this respect the appropriate pricing mechanism for transport services is important.

An important lesson from transport economics is that where only the private costs of congestion are the rationing device, road users have inadequate incentives to avoid the peak. The costs imposed by the marginal user on others are external costs, a true externality, and the failure to reflect these in the incentive structure means that traffic at peak exceeds the social optimum. This does not mean that the optimal level of peak congestion is zero, but it does mean that users face inadequate incentives to avoid the peak under current arrangements.

When traffic grows and peak-time capacity is fixed, road users can avoid the peak on a congested route, and the charges that might be imposed for peak usage, in three ways:

- they can spread their trips to other times;
- they can use other routes, or
- they can use other modes, or just make fewer trips.

These processes also work in reverse. When road capacity is increased, without any change to the pricing regime, as is happening currently on the N7 Naas Road outside Dublin, the new capacity will reduce the incentive for peak spreading, will attract back traffic diverted to other routes, and will attract extra trip-making and diversion from other modes. Anthony Downs, in two widely cited books on the subject, calls this ‘triple-convergence’ (see Downs 1992, and Downs, 2004).

There is an unusual consensus in the economics literature that if no charge is made to reflect the capacity constraints at peak, or any incremental external costs of congestion, but rather policy seeks to accommodate whatever unconstrained peak demand emerges, that this will result in waste. The same is true in other industries where flat pricing, ignoring demand fluctuations, is employed. In such a situation excess capacity is built at substantial capital cost, which is infrequently used. Such infrequently used transport facilities should ideally offer capacity below the unconstrained peak demand, with appropriate incentive structures to ration peak capacity (see For example, Button, 2004).

SUMMARY

Overall, this study highlights the need for extra road capacity to cater for this increased demand. However, this should be accompanied by adequate congestion pricing which will shift some of the transport demand towards more sustainable modes. The rise in unsustainable transport patterns serves to emphasise the need to develop sustainable (dense) cities served by good public transport if the current environmental problems are not to further deteriorate.

Substantial resources have been devoted to transport projects under the current NDP. Most of the expenditure is covered under the economic and social infrastructure operational programme (ESIOP), but some expenditure also took place under the regional operational programmes for the Border, Midlands and Western

(BMW) region and the Southern and Eastern region (S&E). As Table 12.2 shows by the end of 2004 almost €10 billion was invested in transport projects as part of the current NDP. Of this just over 52 per cent was accounted for by national roads, 26 per cent by public transport and a further 21 per cent by non-national roads. These are also the investment areas where financial expenditure has run substantially ahead of target. The other two areas namely seaports and regional airports have experienced slow financial progress.

Table 12.2: Financial Progress on Transport Measures, 2000-2004

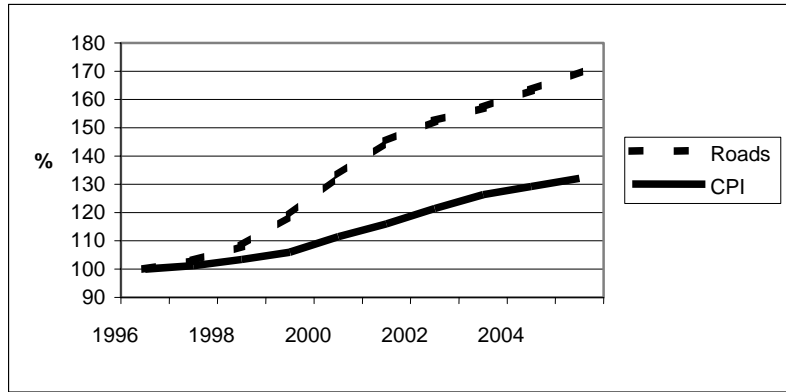
	Expenditure Billion	Expenditure % of Planned %
National Roads	5,199.5	117.2
Public Transport	2,565.2	103.4
Non-national Roads	2,097.1	117
Regional Airports	9.2	59
Seaports	51.9	30
Total	9,922.9	112

While financial progress has been significant in the three major measures under the current NDP, this need not be a good measure of physical progress. The progress reports on the ESIOP and the Regional OP's show varied physical progress. While among the five major inter-urban national primary routes physical progress was ahead of schedule (116 per cent) at the end of 2004, progress was slower than planned on the M50 and the Dublin Port Tunnel (84 per cent and 35 per cent respectively). Indeed the latter is now well behind the original schedule. Of course, these numbers ignore the fact that a substantial number of projects are under way which are not counted into physical progress as these projects have not been completed. As there are many indicators for the physical progress of public transport projects it is difficult to assess the precise degree of progress. In terms of the physical output indicators the progress appears to be on or close to target. However, in some of the outcome indicators progress has been slow. For example, while the number of buses in the Dublin Bus fleet has increased from 987 to 1,064 over the period 2000 to 2004 (86 per cent of the 2006 target), the total number of passengers carried by Dublin Bus annually increased from 140 million to just under 150 million (79 per cent of the 2006 target) (see Indecon, 2005).

Furthermore, it is important to consider the unit costs of investments, since physical progress has been slower than financial progress suggesting substantial inflation. In this respect the *Mid-Term Evaluation* considered the unit costs of the measures under the Regional OP's, which showed substantially higher unit costs compared to that initially planned for the non-national roads measure. In this respect the relatively fast rate of inflation for civil engineering projects is particularly relevant, as is shown in Figure 12.7, where the deflator for roads construction is compared with the

consumer price index. While consumer prices have risen by just over 30 per cent between 1996 and 2005, over the same period the price of roads construction has increased by almost 70 per cent.

Figure 12.7: Road Price Deflator and Consumer Price Index, (1996=100)



Source: CPI is the EU harmonised *Consumer Price Index* published by the CSO, the Roads deflator is taken from DKM/ DoEHLG.

12.4 Lessons from the Current NDP

Following on the 1994-1999 NDP, the current NDP planned major investment, in particular to advance the national primary roads infrastructure as well as a number of key public transport projects. While physical progress has not been as rapid as had been hoped and the cost has been very much higher than anticipated, none the less significant progress has been made. Progress on the roads programme may not have reduced delays and congestion in and around Dublin. However, without the programme things would be much worse. Outside of the major urban areas, and especially Dublin, there has been a significant improvement in journey times.

The experience of the current NDP has shown up a number of problems in execution. Some of these problems have already been addressed. For example, it is clear that some of the contracts used to commission certain new road investment were defective (e.g. problems with the N11). However, the broader problem of higher than expected inflation holds lessons for the next NDP, lessons that have been discussed in detail in Chapter 5. While some action within the roads programme could have been undertaken to reduce the problem of inflation in the cost of the infrastructure built over the last seven years, these problems were not solely, or possibly even largely due to the way the NDP was executed. As discussed in the *Mid-Term Evaluation* of the current NDP and also in Chapter 5 these problems are a symptom of the underlying success of the economy. The rapid growth of the economy, combined with the expanded NDP, resulted in a dramatic increase in the demand for the output of the building and construction sector. With supply constraints in the sector and the economy generally the inevitable consequence of the rapid growth in demand was higher inflation. To have dealt with this problem would have required a different approach to

macroeconomic policy. For the next NDP it will be important that plans for this key component of infrastructural investment take account of the capacity of the economy to deliver.

It will also be essential that the intention in the next NDP to implement a huge increase in investment, especially investment in public transport, is firmly based on a proper cost-benefit analysis of all the proposed new projects. The roads programme has so far largely been underpinned by a systematic analysis of road needs using clearly defined criteria.

Given the huge amount of resources to be committed to this aspect of the next NDP it is essential that all projects, including public transport projects, are subject to such a transparent and systematic analysis. Given the high opportunity cost of resources devoted to buying the output of the building and construction sector, any commitment of funds in the next NDP to projects which fail normal cost-benefit criteria will have a high cost for society over the coming decade.

Some specific lessons also emerged from the *Mid-Term Evaluation* (Fitz Gerald *et al.*, 2003). With regard to national roads, while at the margin there have been some departures from what would have been suggested by cost-benefit analysis, the bulk of the investment undertaken was predicted by the methodology *ex ante* to be of significant economic value. The results so far would suggest that these expectations have been realised in practise. In the area of public transport the MTE suggested that no further investment on rail safety and mainline track renewal should be carried out without proper economic cost-benefit analysis. This reflects the generally poor return to inter-urban rail investment highlighted above. The MTE also urged that inter-urban bus routes be increasingly liberalised. While urban bus investment was found to yield good returns, this return was not maximised due to the failure to introduce integrated ticketing as promised. Importantly, three years on integrated ticketing which has been common practice in most EU countries for decades is still not implemented. With regard to urban rail projects the MTE highlighted serious cost and delay problems with LUAS. These arose from changes in the original specification. Once a final specification was agreed and a contract signed, the delivery of the LUAS ran largely to plan. The MTE also pointed to the need to improve the use of the suburban rail capital stock through frequency improvement and the imposition of appropriate physical planning guidelines on urban areas (Dublin) was highlighted. These findings remain relevant in deciding on investment priorities going forward.

12.5 The Proposals in *Transport 21*

The Government launched, on November 1st, 2005, a 10-year transportation investment programme called *Transport 21*. This includes an extensive range of projects for the road network, the inter-urban rail network and for rail projects in cities, principally in the Greater Dublin Area, as well as provisions for both Dublin and provincial bus development. The total capital cost of the plan has

been estimated by the Department of Transport at just over €34 billion for the years 2006 to 2015 inclusive. Their projected breakdown is as follows.

Table 12.3: Breakdown of *Transport 21* Capital Spending to 2015 in €Million

	€million
National Roads	16,513
PPP Toll Roads	2,000
Heavy Rail	6,036
Luas/Metro	7,390
Buses Dublin	529
Buses Provinces	241
Regional Airports	100
Other	1,480
Overall Total	34,289

Source: Department of Transport.

Notes: These figures include an element of VAT, which is not strictly an economic cost. The figure for ‘Other including Unallocated’ includes some items, such as ticketing and traffic management projects, which may be capable of allocation among the categories shown. An additional €130 million was allocated for the Rural Transport Initiative in conjunction with *Transport 21* to give a grand total of €34.4 billion.

The biggest single item, accounting for just under one-half of the overall total, is the continuing investment in the National Primary and Secondary road networks. A total of €11.5 billion has been proposed for fixed-line (heavy rail, Luas and Metro) investments in the Greater Dublin Area, including improvements to facilities and new lines in the surrounding counties. A further €1.9 billion is to be spent on provincial rail (including provincial cities). Bus services in Dublin receive an allocation of €529 million while those outside Dublin will attract €241 million under the programme as envisaged. Of the total to be devoted nationally to public transport, over 90 per cent is to be spent on heavy and light rail projects.

The overall phasing of the programme sees a gradual build-up of spending to a peak in 2012 at roughly double the 2007 level, followed by a sharp decline to 2015.

While the Government has indicated its commitment to the various components of *Transport 21*, all Government capital projects costing €30 million or more must be subjected to a cost-benefit appraisal in accordance with guidelines issued by the Department of Finance in February 2005. Business cases have been prepared for some, but not all, of the components of *Transport 21*. In his speech at the launch of *Transport 21*, the Minister for Finance, Mr. Brian Cowen TD, stated:

All projects in the framework will be appraised and implemented in line with my Department’s Capital Appraisal Guidelines and the additional Value for Money initiatives as set out in my recent speech.

The substantial PPP element of over €6 billion in non-Exchequer capital funds will be mobilised through annual availability payments from the Exchequer, and their availability is thus not dependent on private sector assessment of the revenue/cost balance involved with the various projects.

We comment below on certain aspects of the investment appraisal process, which has to be undertaken in connection with the components of *Transport 21*.

The principal components of *Transport 21* are:

- The completion of the National Primary road network, mainly to motorway or dual carriageway standard.
- Substantial further upgrading, mainly as undivided roads, of targeted sections of the National secondary network.
- A Metro/Luas.
- A further substantial programme of investment in mainline rail.
- A more heavily rail-based approach to public transport provision in Dublin is proposed. This includes new suburban rail lines notably to Navan and Swords via Dublin Airport as well as radial lines and a Western orbital line, new stations including a new centre city station, new city centre underground sections, electrification of existing suburban lines, and extensive further light rail (Luas) and Metro lines.
- New suburban rail lines are also proposed outside Dublin, including the Midleton-Cork project and the construction of a Western Rail Corridor involving a new line, which would serve *inter alia* as a Galway suburban line, on the alignment Athenry to Claremorris. No line or station closures or withdrawals of service in the provincial rail system are envisaged.

12.6 Detailed Priorities for the Next Plan

The transport trends discussion above highlights the urgent need to make improvements in the transport infrastructure. This is further supported by the significant economic return particularly to roads infrastructure, but also by concerns about the environmental impact of the current traffic patterns. Balanced against this urgent need to invest in transport infrastructure is the potential capacity of the construction industry. This was addressed earlier in this report, and has implications for the feasibility of putting in place an ambitious investment programme without resulting in further inflation in civil engineering projects and the resulting poor value for money. The capacity of the building and construction sector is, therefore, a factor in assessing the scale of investment, which can be undertaken in the various economic sectors, including the transportation infrastructure. In some cases the inflationary stimulus of a project may be such that it will influence the cost benefit calculations so as to render the project not economically viable. In such cases the project should be delayed. Consequently, thorough evaluation of the individual projects making up the transport programme will be important. All projects must be appraised in accordance with the February 2005 Department of Finance

guidelines, and those over €30 million must be subject to a formal cost-benefit appraisal.

The long-run goals of policy in relation to transport infrastructure, whether provided directly by organs of the State or through private investment, ought to be to:

- Ensure that optimum use is made of infrastructures, not just of new facilities constructed as part of the programme but also of the extensive networks of existing infrastructure assets and vehicles. Due attention should be paid to environmental objectives, particularly the minimisation of harmful emissions. Optimum use in this context requires close attention to congestion and to the incentives for users, through the structure of taxes and charges, to reduce congestion-creating behaviour.
- Ensure that, given the system of user charging, the best choices are made regarding transport investment.

In deciding on specific investment priorities it needs to be borne in mind that the current pattern of transport usage is known to be sub-optimal, since the structure of taxes and charges does not incentivise the user to minimise congestion and other externalities. In particular, there is a reliance on congestion itself, rather than on user charges, to ration limited capacity at peak (see Kain (1999) and the discussion in Appendix 1).

The biggest problem in undertaking a prioritisation of the planned investment in public transport, especially in the Dublin area, is the absence of any systematic approach and framework for analysis. The task of prioritisation is made even more complex by the fact that the studies of individual projects that have been undertaken have been prepared by different authors, for different organisations, using differing assumptions.

While in the analysis of the roads programme there is a framework that takes into account the system wide effects of individual investment projects, this has not been the case for the development of the current plans for public transport. The availability of a suitable methodology in the case of roads facilitates a proper cost-benefit analysis. However, in the area of urban public transport, while the Dublin Transportation Office produced *A Platform for Change* in 2001 it was never subjected to a full cost-benefit analysis. Since then substantial changes have been made to the outline plans in that report, For example, in the RPA *Dublin Metro Project Revised Proposal* and in the Iarnród Éireann *Greater Dublin Integrated Rail Network Business Case*, 2004. These studies were carried out independently by the different responsible authorities. They do not appear to have analysed how the different elements of the transport network they were considering would interact with each of the other proposed modifications.

The experience of the Luas project shows the dangers inherent in making piecemeal changes in plans without undertaking a full assessment of the network-wide effects of these changes. As of today there is no comprehensive cost-benefit analysis using a

consistent model of all the latest proposals contained in *Transport 21*. In addition, where an analysis has been undertaken of individual elements it is not clear whether they have used a consistent approach. As discussed in Appendix 2 a counterfactual which should be examined in any analysis is not just a “do nothing” strategy but also a strategy involving greater reliance on buses. The proposed network also needs to be analysed in the context of possible scenarios on road pricing.

There is a serious danger that the piecemeal design and analysis may see the huge investment failing to reap potential system wide benefits from the very expensive investment. For example, the availability and location of interchange points between the different transport modes will be crucial in determining the success of the system in meeting the complex transport needs of the city of Dublin. For example, while an interchange station may be uneconomic when a single metro line is examined on its own, the situation may be different if the system wide effects are taken into account.

The studies that have been undertaken to date are also superimposed on a stylised picture of what Dublin will look like in the future. However, even without active planning by the relevant local authorities, the market will drive the city to optimise its development around whatever transport infrastructure is put in place.³⁸ In addition, as discussed in Appendix 2 of this chapter, the local authorities have the power to substantially influence the future pattern of physical development in the Greater Dublin Area, accelerating the market driven process. Given the extent of the development that will take place over the next twenty years, the city itself must be seen as being “flexible”. Should the planning authorities decide to do so, it is open to them to plan for a dense city optimised around public transport. Such a city would produce a very different cost-benefit ratio than one where a laissez-faire approach is adopted.

Thus the proposed transport network for Dublin should be examined against the backdrop of a range of different stylised pictures of the future city. Such an analysis can also identify how the costs and benefits from the very large investment can be maximised by suitable planning guidelines.

AIRPORTS AND COMMERCIAL SEAPORTS

It is established Government policy that the principal commercial air and sea ports should no longer be recipients of State funding for capital works, and that they should be financed, as to both operating and capital costs, by charges to users. We endorse this approach, which internalises the costs and also provides market signals to guide investment.

³⁸ It is clear that the success of the Green Luas line is having a very significant effect on development along its alignment.

The Government is embarked on a strategy, which will split the former Aer Rianta into three distinct entities operating Dublin, Cork and Shannon airports. This mirrors the position, which already obtains in the commercial seaport sector, where the main ports are State-owned but distinct. These measures are designed to maximise the degree of competition between sea and airports, and to ensure that their finances are transparent. Any moves toward consolidation in the commercial seaport sector in Ireland (including Northern Ireland) should be subject to review by the competition authorities.

We are aware that there are pressures from time to time for new regional airports around the country. Every region of Ireland is now served by a national or regional airport, and the Government, through the Department of Transport, subsidises regional air services, and thus indirectly the regional airports, to the tune of approximately €15 million per annum. Capital grants continue to be available to them also.

We recommend that any pressures, which may emerge for new regional airports should be resisted. Moreover it is important that Government should subject requests for capital subvention from existing regional airports to the same project appraisal procedures as are applicable to other transport projects.

MAINLINE RAIL INVESTMENT

In its transport policy statement *Transport 21*, the Government has listed a range of mainline rail improvements, additional to the significant spending on track, stations, rolling stock and signalling already undertaken or under way.

We understand from the Department of Transport that, while a business case analysis has been prepared for certain of the mainline rail projects, some others have yet to be subjected to economic appraisal as required by the Department of Finance guidelines.

It is important that the most cost-effective public transport technology is chosen for each route. Bus-based alternatives are available in all cases, and will often offer higher frequency than train-based schemes for the same overall volume, better ability to penetrate target markets, as well as lower capital and operating costs. It should be a requirement that appraisals of public transport investments be technology-neutral, assessing bus against rail options, with due allowance for the strengths and weaknesses of the two technologies. The practice, as in the Booz-Allen-Hamilton Strategic Rail Review, of comparing rail projects only with other (Do-Minimum or Do-Nothing) rail alternatives runs the risk of overlooking superior bus-only projects, should such exist.

For example, on short suburban routes such as Midleton to Cork, a fleet of approximately five buses will deliver the same daily capacity as a DMU twin-set, at a modest penalty in terms of speed and with a considerable superiority in terms of frequency. This is not to argue that the bus-only option is self-evidently superior, but only that it should be explicitly included in the analysis. If rail is indeed the superior public transport technology in Cork or

elsewhere, the cost-benefit appraisal will confirm that this is the case.

We recommend that, in the evaluation of all fixed-line public transport investments, whether mainline or urban/suburban, a bus-only alternative be included as a matter of routine in the range of options considered.

URBAN AND SUBURBAN RAIL PROJECTS

The proposals for Dublin involve a decisive preference for fixed-line as against bus-based technology, although it is expected that bus will remain the principal public transport mode in the city. In view of the well-documented tendency to date of both population and employment to sprawl away from the traditional city core with consequent suburb-to-suburb, as distinct from radial commuting, the traffic potential for the lines proposed is critical. As discussed in Chapter 11, the success of any such investment will depend on complementary changes in the approach to physical planning. The total anticipated capital cost of the Dublin fixed-line system, at €11.5 billion, makes this by far the largest single project ever proposed in Ireland. We consider that the economic appraisal process for this project and its components represents an enormous challenge, and we discuss how this task might best be approached in Appendix 2.

Suburban rail construction is also proposed for Midleton to Cork and Claremorris to Athenry and Galway. In both cases, the economic analysis will need to contrast the rail proposals with bus-based alternatives. We note that no economic appraisal of the project was commissioned by the Expert Working Group on the Western Rail Corridor,³⁹ whose terms of reference included consideration of “The costs and benefits of the proposal and options for its phasing, should such a strategy be adopted”.

The Expert Group’s report contains capital cost estimates, with the Ennis to Claremorris section put at €168 million. But there is no quantification of operating costs, traffic, nor of overall project benefits. We understand that Iarnród Éireann is carrying out a full cost-benefit appraisal of this project.

NATIONAL PRIMARY ROADS

We are in agreement with the priority accorded in *Transport 21* to the completion of the National Primary route system to standards adequate for predicted traffic volumes. We reiterate the concerns expressed in the *Mid-Term Review* of the 2000-2006 National Development Plan that care should be taken to ensure that road design be matched to potential traffic volume in a manner designed to eliminate risks of excess provision of capacity or level-of-service.

³⁹ *Expert Working Group on the Western Rail Corridor Report* (2005).

The National Roads Authority operates a formal cost-benefit appraisal system for all major projects, including the analysis of prioritisation issues within the programme.

NATIONAL SECONDARY ROADS

The National Secondary routes, numbered N51 and upwards in the road classification scheme, serve mainly non-radial routes around the country, with traffic volumes distributed across a wide range. This network consists almost entirely of undivided two-lane roads of varying quality. There have been extensive improvements on certain routes but there are also numerous unimproved sections. Some sections show traffic volumes below 2,000 vehicles per day, but others reach 10,000 and above.

The National Secondary network is a critical component in the overall road infrastructure, and is particularly important in serving and connecting the smaller market towns to one another and to the bigger centres served by the National Primary network. It will play an important role in developing the *National Spatial Strategy*. We recommend that a specific and comprehensive programme of National Secondary road improvements should be included in the next National Development Plan, together with the analysis underlying project selection and prioritisation. This should take account of the needs of the *National Spatial Strategy*.

We note from the documentation accompanying *Transport 21* that certain National Secondaries have been identified as priorities for improvement. These are:

- N52 Dundalk-Mullingar-Tullamore-Birr-Nenagh
- N80 Tullamore-Portlaoise-Carlow-Enniscorthy
- N61 Athlone-Roscommon-Boyle
- N56 Donegal-Letterkenny coastal route
- N59 Mayo-Galway coastal route
- N67 Clare coastal route
- N69 Limerick-Tralee and N86 Tralee-Dingle
- N70 Ring of Kerry
- N71 West Cork coastal.

The decision process leading to these choices has not been detailed in the *Transport 21* documentation, and we would note that certain routes not included (such as the N62 North-South route through the Midlands, from the N8 Dublin-Cork road at Horse and Jockey through Thurles-Templemore-Roscrea-Birr-Athlone) cater for substantially higher traffic volumes than certain of the coastal routes which have been selected. These routes would also have a more significant regional development impact in that they link the gateways and hubs more effectively and reduce the radial nature of the roads network which can be a constraint for traffic between certain points. Under *Transport 21* the predominant focus of

investment on national secondaries is on surface renewal. In some cases a substantial return may result from realignment or by-pass projects and such projects should also be considered. In general, while a reasonable surface quality is desirable on the coastal roads identified as part of *Transport 21* in order to support the considerable role of these roads for the tourism industry in the economically weak remote regions, it is questionable to schedule investment in these roads ahead of roads such as those highlighted above, where investment is likely to result in substantially higher returns. In this context the investment priorities for National Secondaries should be informed by a review of investment on the Secondary Network.

NON-NATIONAL ROADS

The National Primary and National secondary networks are the responsibility of the National Roads Authority, which reports to the Department of Transport. Many roads classified as R (Regional) roads, and some classified as Local roads carry substantial volumes of traffic, particularly in the East of the country. These roads are the responsibility of the local authorities, and are financed through block grant and also through certain centrally formulated programmes, all administered by the Department of the Environment, Heritage and Local Government. Expenditure on non-national roads under all headings is currently running at approximately €500 million per annum.

In the context of a review of road classification or otherwise, we recommend that consideration be given to the transfer to the Department of Transport of the responsibility for non-national roads, or at least of the busier non-national routes. This would better facilitate the co-ordination of investment across the whole roads network. We appreciate that there are financing issues, since regional and local roads are only partially Exchequer financed.

Finally, should the Government opt at some future point for a pay-as-you-drive system of road user charging nationally, something we believe it is now opportune to consider, this would have implications for the national route systems, and a review of the *Road Needs Study* (1998) would be desirable in that context.

PROVISION OF BUS-STATIONS AND INTERMODAL STATIONS

Provincial long-distance bus services, including those operated by private companies as well as by the CIE Expressway unit, carry passenger numbers comparable to the numbers carried by mainline rail. Further liberalisation of the market is contemplated, and the end-to-end journey times are beginning to benefit as major road schemes are completed. There has been only limited investment in bus station facilities in many towns and cities. We believe that a national review of bus and intermodal station (bus/rail) opportunities, including proper provision of taxi ranks at all major termini, would be worthwhile. A seamless transport system is

promoted by intermodality, and the taxi service is a key supplementary complement to the long-distance bus or rail offering.

SUMMARY RECOMMENDATIONS

As discussed in Chapter 4, the economy is unlikely to be able to deliver all of the required infrastructure over the course of the next NDP. As the largest component of this expenditure is the planned investment in transport infrastructure the timing and prioritisation of this programme will need adjustment. As outlined in Chapter 5, this may involve the postponement of individual projects until after 2013 to better align the investment programme with the economy's ability to deliver.

We have seen in the current NDP that ramping up investment very fast, especially at a time when the economy is growing rapidly, can cause serious difficulties. There is first the problem of effective project management, discussed elsewhere in this report. Where investment takes place incrementally there is greater opportunity to learn from experience. As discussed later, it is important that the lessons of the projects already completed, both successes and failures, be absorbed before embarking on even larger future projects.

However, even if the project management lessons are fully learned there will still be the problem of capacity constraints in the building and construction sector. As a result, even if all the projects envisaged as part of *Transport 21* pass the required cost-benefit hurdle, some of them will have to be postponed until after 2013. This is likely to be more efficient than undertaking the same range of projects simultaneously but over an extended time scale.

As shown in Table 12.4, what we recommend is that priority be given first to completing the major elements of the upgrading of the national primary road system. Considerable progress has already been made and many of the key elements of the system can be completed within the time scale of the next NDP. Of their nature such projects tend to produce the biggest benefits when they are completed. Prior to completion, the opening of individual stretches of motorway may just shift congestion on to the next town or village. However, the completion of the final link in a key route is likely to produce the biggest reduction in congestion while eliminating the serious costs imposed on the last towns or villages to suffer the congestion.

The indicative recommendation in Table 12.4 would see the level of activity in investment in road infrastructure showing a limited increase compared to the current high level of activity. This should be sufficient to bring to completion most of the high profile road projects within the course of the next NDP.

Table 12.4: Recommendations on Transport Investment €million, Average Annual Expenditure

Measure	Recommendation	2006 (€million)	2007-2013 Average (€million)
National Roads	Increase	1,356	1,580
Public Transport	Increase	491.5	1,162
Non-National Roads	Increase	556	632
Regional Airports	Reduce	10.5	0
Seaports	Reduce	0.1	0
Total		2,414.1	3,374

Note: The 2006 allocation refers to that specified in the NDP, which is not equivalent to the MACIF, where the total capital expenditure for 2006 is €2,555 million.

As discussed above and in Appendix 2, in the case of the public transport investment it is not possible to establish an appropriate prioritisation pending the completion of the cost-benefit analysis on all the proposed projects. It is important that this analysis be done in a consistent manner to allow this prioritisation to take place. Also, because of the possible network benefits from public transport infrastructure, the prioritisation of the different projects may not be straightforward. Any possible interdependency will need to be properly analysed before arriving at a final decision on the appropriate level of investment and its proper prioritisation.

On the assumption that sufficient projects will pass the cost-benefit analysis hurdle we recommend a substantial increase in investment in public transport, more than doubling the expenditure planned for 2006. Even assuming that the public transport projects all warrant investment, such a large increase in expenditure will pose serious management problems. It will be important that the very substantial increase in activity in this sector is managed in a way that ensures appropriate value for money.

The proposed total annual investment (at 2006 prices) in transport of €2,900 million a year will represent a very big increase in activity compared to the current already high level. None the less it will be substantially below that envisaged in the multi-annual capital investment framework published in *Budget 2006*. That framework would have called for a near doubling in the level of investment in transport to around €3,700 million a year at 2006 prices. In the light of the analysis in Chapter 5, it must be concluded that the economy would not be able to deliver such a level of investment over the course of the next NDP without huge inflationary pressures. The only way that such a level of investment could be achieved would be if serious measures were taken to reduce private sector demand for building and construction.

Finally, a number of problems in the planning and development of the transport network for Dublin have arisen from the multiplicity of different authorities involved. For example, there have been problems in achieving co-ordination between the bus service and the new Luas system. The lack of co-ordination apparent in the planning process itself is discussed above.

For the future it would appear that it would be better if all of the relevant assets of the Dublin transport network were transferred to a single holding company. This should include both the rail network and the bus network. That single company would then be able to co-ordinate all services, including ticketing, without having to engage in negotiations with many independent entities. It would be open to that holding company, and probably appropriate, to contract out the provision of many of the services to suitable public or private operators.⁴⁰ This has already been the approach with Luas. However, in all cases the company should preserve the identity of the network and it should retain the ability to plan an evolving system over the next twenty years. Entering into long-term contracts that gave away the company's right to plan the system could defeat the purpose of such a reform.⁴¹

⁴⁰ For mainline rail an appropriate agreement could be made to lease assets or license the use of assets owned by the Dublin authority to Iarnród Éireann.

⁴¹ For example, see the problems with the Westlink bridge.

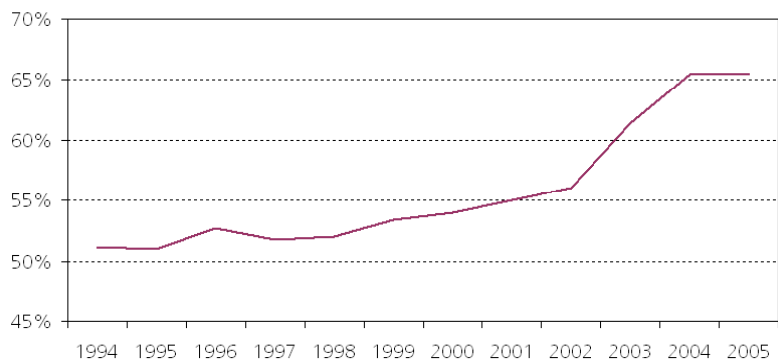
13. HOUSING

13.1 Introduction

Over the past decade housing has become a key sector of the economy. The gross value of housing output (new and repair and maintenance) was just over €20 billion in 2005, which is equivalent to 15.2 per cent of GNP, compared with 7 per cent in 1994. The economy is now very dependent on the housing sector. A strong housing market has a positive impact on the economy, not only through its direct contribution to GDP via new residential construction and home related purchases, but also through enabling homeowners to extract equity from their homes to finance current consumption. Housing also influences activity and employment in the construction, financial and other business services sectors of the economy.

Residential construction is estimated to account for around 65 per cent of total construction output as against 51 per cent in 1994 (Figure 13.1). As a result the building and construction sector, measured in gross value added terms, represents around 18 per cent of GDP compared with an average of just over 11 per cent across 19 Western and Central European countries.

Figure 13.1: Residential Construction Share of Total Construction Output (%): 1994-2005e



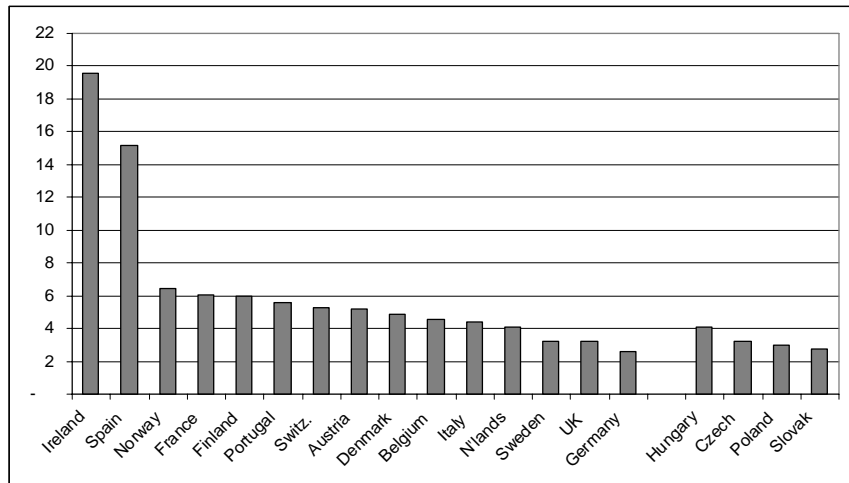
Source: DoEHLG, DKM.

Since 2002 the residential share of total construction output has increased considerably. In the absence of any breakdown of the employment numbers between the individual sub-sectors of construction, we suspect that the strong employment growth in the sector can be attributed to the strong growth in residential

construction activity. If so, the economy is now very vulnerable to any slowdown in residential construction.

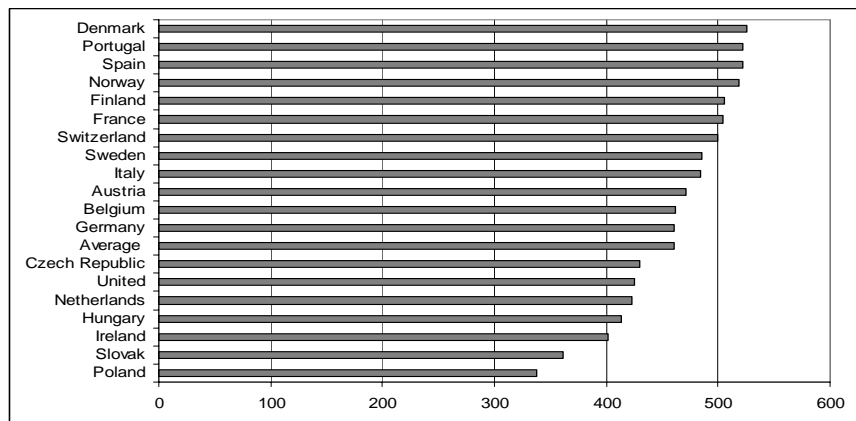
Ireland's exceptional rate of housebuilding, at almost 20 units per 1,000 of the population in 2005, compares with an average of around 5 units per 1,000 of the population across Western Europe and only 3 units in the UK (see Figure 13.2). Despite Ireland's exceptional rate of housebuilding, its stock level is still behind Western Europe: approximately 400 dwellings per 1,000 of the population in the Republic compared with an average across Western Europe of 476 dwellings per 1,000 of the population (see Figure 13.3).

Figure 13.2: Housing Unit Completions Per 1,000 of Population, 2005



Source: Euroconstruct.

Figure 13.3: Housing Stock per 1,000 of Population, 2005



Source: Euroconstruct.

HOUSING DEMAND

This *High Growth* forecast in the most recent *Medium-Term Review* suggests that the factors underpinning the housing market are expected to remain positive in the medium term. Economic growth is expected to continue, along with employment and income growth. Demographic trends will also support the housing market. For example, net immigration is forecast to average around 34,000 per annum between 2002 and 2012. Furthermore, a large proportion of the Irish population, nearly 31 per cent, is aged between 25 and 44 years. Although there is evidence from *Census 2002* of a marginal decline in the home-ownership rate, probably due to the recent period of high price growth, Ireland has one of the highest home-ownership rates at around 80 per cent, substantially above the EU average of approximately 60 per cent.

The demand for housing can be broken down into five main sources:

- population change,
- rising headship,
- migration,
- second dwellings,
- replacement of obsolescent stock.

Demographic factors are a key driver of the housing market, accounting for an annual average of 26,800 units to housing demand between 1997 and 2002. The main component of this, the natural increase in population, is estimated to have contributed an average of 20,000 units per annum over the period. This component is expected to continue to make a positive contribution to housing demand over the forecast period.

Possibly reflecting the rapid rate of house price inflation the change in headship between 1997 and 2002 made a very low contribution to housing demand.⁴² Indeed, the continuing low headship rates by international standards, at a time when incomes in the Irish economy increased substantially, suggests that there may be “pent-up” demand for housing from aspiring homeowners.

Having had for many years a net outflow of people from the country the economy now faces a substantial net inflow. A large proportion of immigrants are in the key household formation age groups between 25 and 44 years old. Having made no contribution to housing demand between 1991 and 1996 migration contributed an annual average of 6,000 units between 1997 and 2002. The continued net inflow over the remainder of the forecast period is expected to account for an annual average of 12,300 housing units between 2007 and 2011.

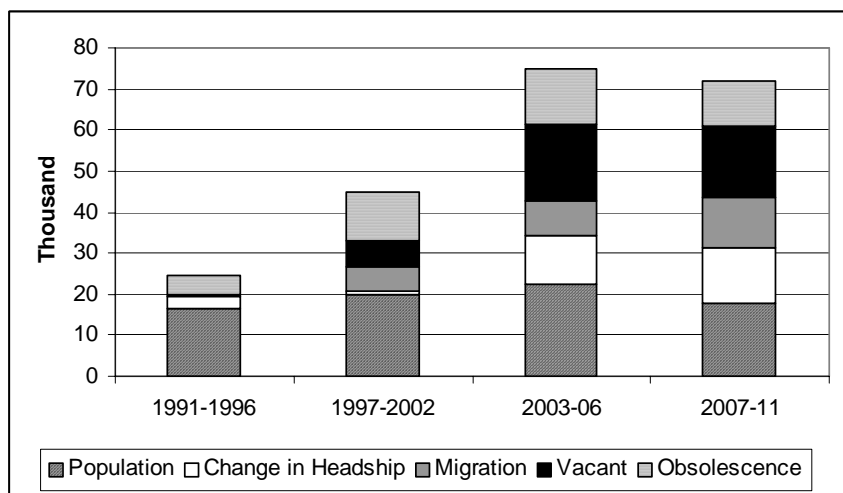
⁴² The demographic forecasts have assumed that Irish headship rates rise from current levels to reach UK levels by 2021. This implies that the average number of adults (persons aged 20 years or over) per household in Ireland will fall from 2.2 in 2000 to 2.0 by 2010 and eventually to 1.8 by 2020.

Fitz Gerald (2005) suggests that one of the key drivers of the demand for housing in recent years has been the demand for second dwellings. Higher wealth, a result of the economic boom, has increased the demand for second dwellings or holiday homes, which now account for a significant proportion of new dwellings. Census data indicates that the number of second or vacant dwelling reached over 170,000 by 2002. The period 1997-2002 saw second dwellings contribute an annual average of 6,400 units to the overall demand for dwellings. This component is expected to make a major contribution to the demand for housing over the period, estimated at an annual average of 18,800 units between 2003 and 2006, before declining marginally to an annual average of 17,200 between 2007 and 2011.

Fitz Gerald (2005) also derives an estimate of the depreciation rate for housing. This estimate is used to forecast the number of dwellings demanded to account for obsolescent stock, averaging 13,400 units per annum between 2003 and 2006, and 11,100 units per annum between 2007 and 2011.

On the basis of these figures it is estimated that the demand for housing units averaged 44,800 units per annum between 1997 and 2002 (see Figure 13.4). The current period has seen much higher demand, averaging 74,800 dwellings on an annual basis. With economic growth expected to continue, as well as income and employment growth and a net inflow of people into the country the demand for housing is forecast at an average of 71,900 units between 2007 and 2011.

Figure 13.4: Decomposition of Housing Demand, Thousands, Annual Averages, High Growth Scenario



Given the macroeconomic forecasts presented above (Chapter 4) it is worth considering the implications of the Irish economy moving to the *low growth* scenario for housing demand. This indicates that in the latter half of the NDP, post 2011, that the demand for housing would average around 61,000 units per annum between

2011 and 2015. Of course, in the event of a sudden negative economic shock to the Irish economy housing demand could be lower.

HOUSING AS AN INFRASTRUCTURE CONSTRAINT

The state of the housing market may now constitute a major constraint for the Irish economy (Duffy, Fitz Gerald and Kearney, 2005). Traditionally, Ireland has had an infinitely elastic labour supply curve due to an extremely open labour market, with migration ensuring an elastic labour supply and a weak Phillips Curve effect. One of the results of the boom in the late 1990s was that the Irish economy effectively reached full employment and growth in output outpaced capacity. House prices rose sharply, so the decision to migrate to Ireland was now influenced, not only by relative employment opportunities and relative wages, but also by the rapid rise in house prices. This resulted in labour supply becoming even more inelastic. Since many immigrants are in the household formation age group, and tend to be highly skilled, the boom in house prices in Ireland could reduce the attractiveness of Ireland for potential immigrants. This would, in turn, reduce potential labour supply in the medium term and act as a brake on medium-term growth in output and employment.

Simulation results indicate that the housing constraint significantly reduces the medium-term growth potential of the economy and shifts the balance of labour market growth from employment to wages, with a consequent deterioration in competitiveness. The welfare effects differ for different groups, with unambiguous gains for current homeowners while immigrants, first time buyers and those with lower labour market skills are the net losers.

THE QUALITY OF THE HOUSING STOCK

The simple stock estimates give little information about the quality of the housing stock, which in turn could have a major bearing on investment needs since the quality of the stock will determine the rate of obsolescence. *The National Survey of Housing Quality* (NSHQ) in 2001-2002 obtained detailed information from a representative sample of over 40,000 householders on characteristics and problems of the dwelling, and on the household members (Watson and Williams, 2003).

The report examines the overall condition of the dwelling under a number of broad headings. The household and dwelling characteristics, which emerged as being most strongly related to housing quality were dwelling age, tenure and location. One finding, which has emerged clearly from the survey is that, across most measures of housing quality, Local Authority renters are in a less favourable position than other tenures. Two exceptions worth noting are direct housing costs and recent repairs and upgrades to the dwelling. Because of the differential rents system operated by Local Authorities, whereby rent levels are related to household

13.2 Outline of Existing Policies

income, and because Local Authority renters tend to have low incomes, Local Authority rents are low. The second respect in which Local Authority renters are not at a disadvantage is in terms of repairs and upgrades to the dwelling in recent years. In this respect Local Authority renters fare at least as well as the other tenures.

The overall objective of Irish housing policy is to “...enable every household to have available an affordable dwelling of good quality, suited to its needs in a good environment and as far as possible at the tenure of its choice”.⁴³

The general thrust of housing policy is that those who can afford to house themselves from their own financial resources should provide for their housing needs, whether through home ownership or private rented accommodation (the private housing market), and that a range of targeted supports should be available to others having regard to the nature of their need (through the public housing system).

The policy is based on a multi-stranded approach, involving various interventions and supports in the private and public housing markets. The private housing market enjoys some indirect State support in the form of measures such as mortgage interest relief, but without any direct State involvement in the actual provision, beyond the planning process and the provision of local authority services such as roads and water.

The vast majority of housing services, for which the Department of the Environment, Heritage and Local Government (DoEHLG) has responsibility, are delivered through the local authorities, and the various interventions and supports can be summarised under five headings, which comprise the Housing Priority under the current NDP:

- Local Authority Housing.
- Voluntary Housing Support Schemes.
- Improving Access to Affordable Housing.
- Housing Stock Improvements.
- Accommodation for Groups with Special Needs.

Over the past decade policy has been focused on increasing the overall supply of housing and improving access to home ownership for those persons who have been unable to provide their own housing needs in the private market. Measures in this regard have included stamp duty concessions and improvements in mortgage interest relief (MIR).

Although the vast majority of the financial resources allocated to housing are spent on the provision of local authority and social housing, since 2000 with the passing of the new Planning and Development Act, the focus has shifted to affordable housing initiatives aimed at improving affordability and access to home

⁴³ See www.environ.ie.

ownership. Within this, there has also been a focus on the first-time buyer.

The diversification in the nature of social and affordable housing provision since 2000 has resulted in a new ‘third-tier’ of the market, *Affordable Housing*, in addition to the two tiers, which traditionally formed the core of the Irish housing system – the State supported *Social Housing* system and the private housing market. This third category consists of those who will not qualify for social housing, and are typically people in employment, but whose financial resources are deemed inadequate to get on the owner-occupation ladder as a result of escalating house prices over the last decade.

The creation of this third category is a significant change in the approach to housing policy, and involves a major expansion of the State’s role in the housing market. There is substantial non-Exchequer funding provided in the form of loans from the Housing Finance Agency to the local authorities for house purchase, improvement and mortgages under the various affordable housing schemes. In 2005 a number of lending institutions started to offer mortgage finance for affordable housing applicants, thereby potentially reducing the demands on the Housing Finance Agency. Other institutions are expected to follow.

In addition Part V (of the Planning and Development Acts) involves a new approach to the provision of social housing. Local authorities can now source some of their requirement for new social housing through a compulsory acquisition at cost, of a portion of private house building output, in addition to their own construction programmes for new social housing units.⁴⁴

While the five headings under which social and affordable housing supports can be summarised are those that make up the Housing Priority in the Economic and Social Infrastructure Operational Programme (ESIOP) in the current NDP, other schemes not included in the ESIOP also deal with housing needs. The asylum seekers accommodation scheme provided for in the NDP, which is funded out of current expenditure from the Department of Justice, Equality and Law Reform, is included as Measure 6.

We understand that the DoEHLG plan to issue a new policy statement for housing during 2006. A summary of the key elements of that statement were outlined in a framework document published at the end of 2005.⁴⁵ This document contained a number of agreed principles for the development of housing policy in regard to reforming the social housing sector, supporting an effective private housing market and accelerating the supply of affordable housing. We refer to elements of this framework throughout this chapter.

⁴⁴ The various schemes and interventions, which are targeted at a broad range of housing needs that are not met by market provision are set out in Appendix 3.

⁴⁵ *Housing Policy Framework – Building Sustainable Communities*, Department of the Environment, Heritage and Local Government, December 2005.

13.3 Progress since 2000

In 2005 a record number of almost 81,000 new housing units were completed, compared with just fewer than 50,000 in 2000. Of those approximately 92 per cent, were provided by the private sector. Based on completions data, a total of 606,000 units have been added to the housing stock over the period 1994-2005. Taking an estimated stock level of 1.64 million at the end of 2005, this implies that 37 per cent of the housing stock has been built over the last twelve years and almost one-quarter since 2000.

The public sector contribution, in terms of new build, is predominantly delivered through the local authority-housing programme although the voluntary housing sector also provides social housing, which is funded by significant financial assistance from central Government under the Capital Assistance and Capital Loan and Subsidy schemes.

Table 13.1: House Completions by Sector 2000-2005

	Total Private	Total Public	Local Authority	Voluntary Sector	Total	% Private %	% Public %
2000	46,657	3,155	2,204	951	49,812	94	6
2001	47,727	4,875	3,622	1,253	52,602	91	9
2002	51,932	5,763	4,403	1,360	57,695	90	10
2003	62,686	6,133	4,516	1,617	68,819	91	9
2004	71,808	5,146	3,539	1,607	76,954	93	7
2005	75,398	5,559	4,209	1,350	80,957	93	7

Source: *Annual Housing Bulletins*, Department of the Environment, Heritage and Local Government.

The housing needs of approximately 13,000 households were met by the total investment in housing in 2005 (see Table 13.2), with investment undertaken by local authorities each year, including the construction and acquisition of new units, accounting for the majority of those households. Based on the latest assessment of housing need, which reported a total of 43,684 households in need at end March 2005, the annual investment under the local-authority housing programme accommodates approximately 1 in 4 households on the social housing lists each year. Further details on the breakdown of the figures in Table 13.2 are provided in Appendix 3.

Table 13.2: Physical Indicators of Progress 2000-2005

	2000	2001	2002	2003	2004	2005e	Cumulative 2000-2005
Total Social Rented Provision	7,288	9,574	9,919	10,738	9,880	10,292	57,691
Affordable Housing	1,369	2,015	2,802	2,839	2,265	2,756	14,046
Total Social and Affordable Provision	8,657	11,589	12,721	13,577	12,145	13,048	71,737
Sales under Tenant Purchase Scheme	1,844	1,411	1,195	1,567	1,652	1,738	9,407
Number of Sites Sold	98	188	141	112	87	124	750
Groups with Special Housing Needs:							
Traveller Specific Units Provided	176	187	214	228	193	na	
Traveller Families removed from roadside	114	76	78	151	187	na	

(1) Including social housing units acquired under Part V.

(2) Houses available for rent from existing stock.

Figures for other acquisitions and regeneration in 2005 are DKM estimates.

The focus, since 2000 on a range of affordable housing initiatives has resulted in the needs of almost 72,000 households being met over the period 2000-2005. The level of acquisitions under Part V schemes has been slow to take off due to the fact that many of the units provided in recent years were on foot of planning permissions, which predated the Planning and Development Act, 2000 and thus were not subject to Part V. With continued high activity in the sector the number of units delivered under Part V is expected to increase from 2006 onwards.

There are other schemes included in Table 13.2 such as the tenant purchase scheme, the provision of low cost sites and the schemes providing accommodation for travellers. Some 9,400 local authority houses were sold to tenants by local authorities over the last six years. While the transfer price applied is the current market value less discounts, determined by the years of tenancy, the transactions price recorded can be substantially below the market price.

Furthermore, other schemes that do not generate additional housing units, such as the remedial works scheme for houses of existing tenants and schemes for the homeless are not included in Table 13.2. Progress on homelessness has been independently reviewed, resulting in a number of recommendations designed to move the existing strategies and action plans forward effectively.⁴⁶ These are covered later under the discussion on Special Needs.

Capital expenditure on housing is the second largest element of the Public Capital Programme (PCP) after transport, accounting for 18 per cent (€1.55 billion⁴⁷) of the total PCP for 2005 or 18 per cent on average over the period since 2000. The annual average nominal increase in the capital investment over the last five years has been 12 per cent per annum. By the end of 2006, the total capital investment in housing will be €10.5 billion since 2000 compared with €3 billion over the previous seven-year period.

The capital investment under each measure is set out in Table 13.3. There is also current expenditure of approximately €164 million in 2005,⁴⁸ which includes a €74 million provision for asylum seekers accommodation from the Department of Justice, Equality and Law Reform.⁴⁹

⁴⁶ *Review of the Implementation of the Government's Integrated and Preventative Homeless Strategies*, a report prepared by Fitzpatrick Associates Economic Consultants for the Minister for Housing and Urban Renewal, February 2006.

⁴⁷ The 2005 estimated outturn of €1.55 billion for investment in housing, according to the 2006 PCP compares with the 2005 provision of €1.89 billion in the 2005 PCP.

⁴⁸ *Source*: Revised Estimates for Public Service, Department of Finance, 2006.

⁴⁹ Appendix 3 provides background on the schemes within each measure and a detailed breakdown of the investment under each measure.

Table 13.3: Public Capital Investment in Housing Priority (*)

Million Euro	2000	2001	2002	2003	2004	2005	2006e	Average Annual % Change
	(2006 PCP)							%
Measure:								
1. Local Authority Housing	420	671	792	695	704	805	875	+13.9
2. Voluntary Housing	100	145	179	213	185	168	246	+11.0
3. Improving Access to Affordable Housing	186	247	361	495	347	291	508	+9.4
4. Housing Stock Improvements	153	210	256	272	253	243	281	+9.8
5. Groups with Special Needs	15	24	27	29	36	37	47	+19.9
Total Capital Investment in Housing	874	1,296	1,614	1,704	1,524	1,546	1,957	+12.1
of which investment in Local Authority & Social Housing	621	972	1,178	1,130	1,118	1,214	1,409	+14.3

(*) Based on grouping the PCP measures into the five broad measures which make up the Housing Priority.

Source: Public Capital Programme, 2006 Department of Finance.

In addition to the capital provisions in the PCP there is current expenditure including the housing expenditure incurred under the Supplementary Welfare Allowances Scheme and grants to homeless agencies. There are other costs to the Exchequer as a result of tax reliefs, including the area based tax incentive schemes, which are due to terminate in July 2006, and other tax reliefs in the form of mortgage interest relief for owner occupiers and registered landlord as well as reliefs for private tenants.

The rent and mortgage interest supplements comprise a significant proportion of the total cost of the Supplementary Welfare Allowance Scheme (SWAS). The costs for the SWAS are borne in full by the Department of Social and Family Affairs. Rent supplement assists eligible persons with the cost of private rented accommodation while mortgage interest supplement assist eligible persons with their mortgage interest payments. The most recent *Assessment of Social Housing Needs* reported that 13,778 or 31.5 per cent of those on the waiting lists are in receipt of the SWA rent supplement scheme. The numbers in receipt of rent and mortgage interest supplements have increased from 46,914 in 2000 to 60,176 in 2005,⁵⁰ an increase of 28 per cent. Expenditure over the same period increased from €157 million to €370 million.

⁵⁰ 2005 figure excludes around 33,000 persons transferred under the Rental Accommodation Scheme (RAS) to the Department of the Environment, Heritage and Local Government.

Table 13.4: Total Public Expenditure on Housing

	2000-2005	2005	2006e
Measure:	€m.	€m.	€m.
1. Provision of Local Authority Housing	4,087	805	875
2. Voluntary Housing	991	168	246
3. Improving Access to Affordable Housing	1,926	291	508
4. Housing Stock Improvements	1,386	243	281
5. Groups with Special Needs	168	37	47
Total PCP Housing Investment	8,559	1,546	1,957
Current Expenditure (1)			
Measure 1 – Local Authority Housing (RAS) (2)		1	19
Measure 2 – Voluntary Sector		28	35
Measure 3 – Affordable Housing (3)		6	11
Measure 5 – Grants to Homeless Agencies/Travellers		50	56
Other Current Expenditure (4)		5	4
Total Current Expenditure		90	125
Measure 6 - Asylum Seekers (5)		84	74
Supplementary Welfare Allowance - Housing			
– Rent Supplement		370	
– Mortgage Interest Supplement		6	
Tax Relief – Mortgage Interest		279	
Tax Relief – Rented Residential (6)		26	
Tax Relief – Private Tenancies		na	
Other Tax Reliefs (7)	1,014		
– Rural Renewal	277		
– Urban Renewal	636		
– Town Renewal	71		
– Living over the Shop	30		

- (1) The detailed breakdown of the total current expenditure for 2005 (€ 90 million) and 2006 (€125 million) is taken from the Revised Estimates for the Public Service 2006.
- (2) This €19 million in 2006 is for the new Rental Accommodation Scheme (RAS) transferred from the Department of Social and Family Affairs.
- (3) Expenditure here includes €5 million towards the shared ownership subsidy, €2 million for the AHP and €3.7 million in 2006 for private rented sector support.
- (4) Other current expenditure includes grants for Housing Research and expenditure under the Housing Management Initiative and for the Local Drugs Task Force.
- (5) There is a separate provision for Asylum Seekers in the 2006 NDP estimates which was not part of the original classification in the Housing Priority in the NDP 2000-2006. It is designated here as Measure 6.
- (6) 2002 figure.
- (7) Figures for other tax reliefs are estimates of the NPV of the tax foregone up to July 2006 associated with residential developments under each scheme, as estimated by Goodbody Economic Consultants in their Report entitled *Review of Area Based Tax Incentive Renewal Schemes*, November 2005 (Table 8.1).

New arrangements were put in place in July 2004 for the provision of housing for long-term rent supplement recipients though the sourcing by local authorities of accommodation from the private rented market or through other social housing measures. For the purposes of the scheme long-term recipients are defined, as those in receipt of SWA for a period greater than 18 months, which is estimated cover in the region of 33,000 persons. Under the new

scheme, known as the Rental Accommodation Scheme (RAS) long-term rent supplement recipients, are to have their housing needs catered for by local authorities. Following a pilot scheme across eight local authorities during 2004, all local authorities were due to implement the scheme this year.

This new arrangement effectively transfers the rent supplement budget to local authorities in the hope that better quality accommodation and better value can be obtained. The funding for RAS is to be met from savings on the SWA rent supplement budget. The 2006 spending estimates transferred €19 million from the Department of Social and Family Affairs to the DoEHLG for funding the new scheme. The key benefit of the transfer is expected to be that local authorities will secure better value in the sourcing of accommodation through the use of long-term contracts with landlords than under the rent supplement scheme. There will be an extra cost for the DoEHLG as it will pay an administration fee to the local authorities for administering the scheme.

The mortgage interest supplement scheme (MISS) is a form of assistance for those unable to meet their full mortgage interest repayments. Approximately 3,220 persons were in receipt of mortgage interest supplement at the end of 2005 at a cost of €6.34 million.

There is another issue, which may have cost implications for the DoEHLG. As managers of the social housing stock, the impact of the provisions of the EU Directive on the Energy Performance of Buildings, which became European law in January 2003, has yet to be quantified. The Directive was to be transposed into national law and brought into operation by EU Member States by 4 January 2006. The most important provision of the Directive is that an energy performance certificate is to be provided at the point of sale or rental of a building, or on completion of a new building. It is acknowledged that the central heating programme is making some inroads in this regard.

The housing market is a market for accommodation, which encompasses different types of tenure. Consequently, it is important that the market provides a mix of tenure choices. Most new initiatives since the late 1990s have focused on owner occupation at the expense of the rented sector. In order to meet demand efficiently the housing market needs to offer a range of tenure choices right across the tenure spectrum. The 2004 legislation on the rented sector will help address this imbalance and the recent statement in the *Housing Policy Framework* on the promotion of affordable rented housing is welcome in this regard.

13.4 Housing Priorities for the Next NDP

The fact that house prices have increased to such a high level over the last decade is a clear indication of the excess demand or lack of sufficient supply in the housing sector. As a consequence, workers in the first-time buyer segment on traditionally good incomes, who would have been in a position to purchase property in semi-

detached estates in the private housing market twenty to thirty years ago, are today priced out of the market.

There are a number of reasons for this including restrictive zoning policies of some local authorities. For a housing market to function efficiently it is a prerequisite that sufficient quantities of zoned and serviced land are provided for in Development Plans. Increased resources have been made available to planning authorities in recent years, which have resulted in a considerable rise in the number of planning permissions over the last two years. Much progress has been made with the planning system, resulting in some 18,000 completions in Dublin, for example, compared with 9,400 in 2000. However, the resulting pattern of development has not been the most desirable in terms of sustainability and has adversely affected travel patterns and the quality of life.

The housing sector in particular has been identified in Chapter 5 as one of the principal risks going forward for the Irish economy in the event of any major shock which could adversely impact on confidence in the housing market and more generally across the economy. With residential construction now accounting for 65 per cent of overall construction output, it is important that there is no further stimulus provided by the State, which would add to the size of the building and construction sector. Thus, it would seem wise to plan forward on the basis that any measures than can reduce demand should be considered. This can be achieved by removing all incentives that are fuelling the boom in the private and public sectors and by ensuring that the future level of State investment in housing is efficient and delivers value for money. No schemes should exist which would jeopardise the likelihood of achieving a soft landing over the medium term.

In this regard the termination of the majority of property and area based tax reliefs, subject to certain transitional arrangements, as announced in the *2006 Budget* is welcomed.⁵¹ This will assist in reducing demand from the private sector, notwithstanding reports that investor demand is rising again this year.⁵²

The net present value of the tax foregone in respect of residential development under the various renewal schemes up to July 2006 was estimated at €1 billion (Goodbody Economic Consultants, 2005). However, developments completed up to July 2006 will give rise to claims for tax relief for a considerable future period. Other reliefs remain for owner-occupiers and investors, through mortgage interest relief, estimated at €200 million in 2005, and reliefs for residential tenants.

On the basis of the figures presented above it is estimated that the demand for housing units will remain at a high level up to 2011.

⁵¹ Tax reliefs for nursing homes, childcare facilities, private hospitals and park and ride facilities were retained.

⁵² In an analysis of properties sold through Sherry FitzGerald during Quarter 1 2006 investors accounted for 40 per cent of all sales compared with 30 per cent in the same period of 2005.

In the current three year period, 2003-2006, housing demand is estimated to average 74,800 dwellings per annum. With economic growth expected to continue, as well as income and employment growth and continued net inward migration, the demand for housing is forecast to average 71,900 units per annum between 2007 and 2011. Thus with demand estimated at 440,000 dwellings⁵³ over the period 2006-2011, the stock of dwellings is expected to break the 2 million mark by 2011, provided all of this demand is accommodated.

If the above demand is to be accommodated without any adverse impact on house prices, it is essential that sufficient land is zoned in Development Plans to provide for the supply of dwellings in the right location. The implications of an inefficient zoning process, which does not provide sufficient quantities of zoned land for residential development over the long term, can put undue pressure on the environment.

Against that background and in the light of progress since 2000, there are a number of priorities for housing in the next NDP, which are outlined below. Overall our recommendations are for a somewhat reduced level of funding for this area going forward. This recommendation is a direct consequence of the current state of the market with excess demand leading to strong house price inflation. If pressure in the housing market could be reduced through appropriate fiscal measures or if there is a general downturn in this market our recommendation is to increase investment above the level recommended below.

RATIONALISATION OF EXISTING SCHEMES

From the analysis carried out to ascertain physical and financial progress, it is clear that there exists a wide range of schemes, a number of which overlap with each other. There are also different eligibility and allocation criteria. The direct relationships between actual interventions and their impact in terms of physical indicators can be difficult to quantify. The existing system is far too complex and needs to be simplified.

While the five broad measures, which comprise the Housing Priority in the current NDP make sense in that they are broadly characterised by tenure, the schemes under each measure could be streamlined more effectively. The schemes can be classified into three categories.

1. Schemes assisting *owner occupation*

- Shared ownership.
- Affordable housing.
- Mortgage allowance scheme.
- Tenant Purchase Scheme.

⁵³ Based on 80,000 in 2006 and an average of 71,900 over the five years 2007 to 2011 inclusive.

- Loans provided for house purchase.
- Mortgage interest supplement scheme under SWA.

2. Schemes focusing on the *rented sector*

- Local authority and social housing for rent.
- Part V.
- Rental Accommodation Scheme.
- Rented accommodation for persons with special needs.

3. *Housing quality* measures on the basis that they do not result in an increase in the housing stock but do generate an improvement in its quality.

Given that there are no less than six schemes addressing owner occupation and four schemes addressing the rented sector, there is an urgent need to consider which of these measures most effectively delivers on the housing policy priorities. This would involve rationalising the existing schemes and supports and their eligibility criteria in order to deliver a more streamlined set of housing policy interventions with clear objectives, targets and output levels. This review should also consider whether responsibility for the mortgage interest supplement payment scheme should be transferred to the DoEHLG and provided by local authorities as part of, and integrated into, overall housing policy.

REDUCED LEVEL OF CAPITAL EXPENDITURE – VALUE FOR MONEY

As was highlighted above, there is a need to constrain the level of capital expenditure within the overall capital envelope. Given the need for constraint, it is important to focus on the quality and quantity of the investment to ensure that it delivers value for money.

The value for money issue is relevant when the cost of constructing new units is compared with the cost of releasing existing units in the stock at below market price. Under the current tenant purchase scheme the maximum discount that applies is 30 per cent to the market valuation price as determined by the local authority, which may not be the true market value. A further capital subsidy is paid to the tenant purchaser of the order of €3,800.⁵⁴

Approximately 19 per cent of the sales in 2005 were sold at below €140,000, a further 52 per cent were sold at between €140,000 and €185,000. With the average house price across the State equivalent to around €270,000 in 2005, the disposal prices appear substantially below the market value, implying a cost to the State.

⁵⁴ Some 9,400 local authority houses were sold by local authorities over the period 2000-2005 of which 2,517 units (27 per cent) were sold in the Greater Dublin Area. A further 3,600 sales were approved at the end of 2005, with applications received from 4,622 tenants.

Importantly, there is no clawback rule as is the case with affordable housing.

The State is building some 4,000 local authority units per year. Figures obtained from the DoEHLG suggest the average all in build cost was around €155,000 in 2005, implying a total capital spend of around €652 million. When the full capital spend on new build and acquisitions as per Measure 1 is used, the total cost per unit is very similar at €157,000 in 2005, an increase of 3.1 per cent per annum on average over the last six years. The State has purchased over 5,000 units in the open market over the last six years.

While the proceeds from the current tenant purchase scheme, contribute to the financial resources of local authorities, these properties are sold at substantially less than it costs to replace them with either new build units in the local authority or acquisitions in the private market.

The Government is considering extending the tenant purchase scheme to include the sale of local authority flats from January 2007. Given the planned expansion of the social housing programme to 23,000 new social housing units between 2006 and 2008 this will require a substantial increase in investment in social housing. The proceeds from the sale of local authority houses are expected to contribute towards this cost and thus the disposal prices obtained should be at or close to their market values. The rising costs of local authority housing units over the last five years, equivalent to a total increase of 27 per cent since 2000, using the DoEHLG figures, raises concern about value for money in the housing public capital programme.

Table 13.5: Estimated Cost per Unit for Social Rented Housing

	2000	2001	2002	2003	2004	2005
A. Cost of building a LA House (€) (1)	122,000	128,000	141,000	137,000	146,000	155,000
B. Number of new LA Units	2,204	3,622	4,403	4,516	3,539	4,209
C. Estimated Capital Spend on LA Housing (2)	269	464	621	619	517	652
D. Actual Capital Spend on LA Housing (3)	420	671	792	695	704	805
E. New build plus acquisitions (4)	3,207	5,022	5,074	4,972	4,510	5,127
F. Average Cost per Unit (€) (5)	130,964	133,612	156,090	139,783	156,098	157,012

1. Average cost provided by the DoEHLG, including construction, technical fees and land costs.

2. Calculated by multiplying A by B.

3. Actual capital expenditure on local authority housing as per the PCP (Table 13.4).

4. 2000-2005 figures are the combined total of the first three rows in Table 13.18.

5. The calculated average cost per unit when acquisitions are included.

A second value for money issue concerns the fact that local authority rents are highly subsidised and are not indexed to inflation. There is little or no effort to monitor the circumstances of local authority tenants over time despite the fact that the State covers the cost of maintenance of the local authority stock. In this regard, the

most recent *Housing Policy Framework* (Department of the Environment, Heritage and Local Government, 2005) raises the issue of implementing a fair rents policy across all social housing tenures as part of a package of reforms in the social housing sector. It will be important that the issue of indexing rents is addressed as part of this package.

OPTIMAL TENURE MIX

The value for money issue is also related to the optimal composition of the State's direct involvement in respect of the main forms of tenure. Currently 80 per cent of total housing provision in the public sector is provided for through local authority and social housing programmes, which account for three-quarters of the capital spend. Affordable housing initiatives account for the balance, with no contribution from the private rented sector, although it is acknowledged that the sector is meeting the housing assistance needs of some 60,000 households through the SWA scheme plus there will be some contribution following the new arrangements put in place under the Rental Accommodation Scheme.

It may well be the case that the same number of households could be accommodated with a lower level of spending by altering the composition of the mix. A greater proportion of affordable housing in the mix, For example, and/or more use of the private rented sector, as with the Rental Accommodation Scheme, as opposed to the traditional form of local authority housing would imply a lower cost to the Exchequer. Equally the cost of maintenance would be significantly reduced if the shares of the overall social housing requirement delivered through affordable housing and the private rented sector were increased.

Table 13.6: Current Tenure Mix of Public Sector Housing Provision

	(Number of Households Accommodated)	2000-2005 % Share	2000-2005 % Share of Capital Funding
Social/Rented Housing		%	%
Local Authority Housing	49,553	69	63
Voluntary and Co-operative Sector	8,138	11	12
Total Social/Rented Provision	57,691	80	75
Affordable Housing	14,046	20	23
Private Rented Housing	0	0	0
Total Affordable & Rented	14,046	20	23
Total Housing Provision (Social/Rented/Affordable)	71,737	100	98⁽¹⁾
Rental Accommodation Scheme (from 2005)	33,000 persons		
Total Assessment of Social Housing Need ⁽²⁾	43,684 persons		
Total Affordable Housing Need	na		

1. The balance of 2 per cent on the funding side represents the funding for groups with special needs (travellers and the homeless).

2. Based on the latest local authority *Assessment of Social Housing Need* at the end of March 2005.

In recommending a more balanced mix of tenures and more use of the private rented sector, it is acknowledged that there is likely to be some impact on the market for private rented accommodation. This reinforces the need for there to be no obstacles to achieving the level of supply in the private sector that will be required over the period of the next NDP.

SOCIAL HOUSING

Following on the previous discussion regarding a more balanced mix of tenures it cannot be assumed that, based on the reduction in the waiting lists, the need for social housing will be eliminated over time. There will always be a need for social housing nationwide from those on low incomes who are not in a position to provide their own housing needs without State assistance. The key issue then is to assess what an acceptable rate of delivery might be and the most effective and efficient manner for doing so.

The most recent *Assessment of Housing Need* reported a reduction in the numbers on the social housing lists by almost 10 per cent to 43,684 since the 2002 assessment. The reduction has been attributed to the continuing increases in both the social and affordable housing provision. The majority on the social housing list are female, with approximately 25 per cent of the total under 25 years of age. Almost 87.5 per cent were on incomes of less than €18,000. In Dublin there was an overall reduction of 20 per cent from 15,674 households in 2002 to 12,608 households in 2005, with South Dublin recording a decline of 56 per cent to 1,847 households.

The DoEHLG *Housing Policy Framework* proposes the expansion of the social housing options over the coming years by: “Commencing in the region of 23,000 new social housing units between 2006 and 2008” made up of 6,000 units in 2006 and the balance in the following two years, compared with an average of 5,000 per annum over the period 2000-2005 and “...fully implementing the Rental Accommodation Scheme by end 2008”.

This proposed level of social housing supply compares with an increase in the stock by 73,000 units (net of tenant purchases) or in excess of 9,000 units per annum as recommended by NESC (2004) over the eight-year period 2004-2012⁵⁵. The most recent assessment of need together with the growing dependence of the economy on the housing market provides an opportunity to revisit what might be deemed to be a sensible level of social housing supply over the period of the next NDP. This review is consistent with the NESC report, which stated that: “The Council accepts that higher levels of investment in social and affordable housing must be sensitive to both macroeconomic considerations and the capacity of the housing industry.”⁵⁶

⁵⁵ This figure includes new build and acquisitions and compares with an average level of around 6,000 per year over the period 2000-2005. This NESC (2004) figure was derived before the results of the 2005 Assessment of Need became available.

⁵⁶ NESC (2004) Chapter 8, Paragraph 8.5.4, page 211.

Taking into account the record delivery from the private sector and the fact that equilibrium may be restored to the market over the period of the NDP, there may be a case for maintaining social housing supply close to current levels and increasing the social housing contribution from the private rented sector.

Other policies included in the *Framework* to support social housing include:

- The introduction of active land management strategies to support social housing provision.
- Introducing measures to reform the social housing sector to ensure that the system is fair, efficient and works better.
- The delivery of high quality social housing in mixed communities by rolling out a programme of regeneration and other remedial works, and completing the central heating programme by 2008.
- The completion of an audit of the social housing stock in 2008 to ensure that standards and levels of satisfaction are rising.
- The use of public private partnerships in regenerating local authority housing estates.⁵⁷

Given the analysis provided in this chapter and the need to reduce the overall level of capital expenditure identified in Chapter 5, the recommendation is to reduce social housing supply from current levels and to supplement it with schemes providing rented dwellings in the private sector. Furthermore, the Rental Accommodation Scheme (RAS) scheme should be fully implemented as soon as possible this year.

AFFORDABLE HOUSING

The focus, since 2000 on a number of affordable housing initiatives aimed at improving affordability and access to home ownership for those who are not in a position to meet their own housing needs in the private housing market without additional support is a new dimension of housing policy. The current range of schemes includes:

- Shared Ownership Scheme (started 1991).
- 1999 Affordable Housing Scheme.
- Affordable Housing under 2000 to 2002 Planning and Development Acts – Part V Schemes (2001).

⁵⁷The scope for PPP regeneration type schemes, such as at Fatima Mansions and O'Deveney Gardens, should be explored outside of the Dublin area. Under a new plan, proposed by Dublin City Council, the flats in Fatima Mansions are being totally demolished and replaced by high quality housing and very significant and necessary associated community facilities in a public private partnership type arrangement. The regeneration programme is providing an integrated development comprising social, affordable, co-operative and private housing. Approximately 300 homes will be provided for social housing that will be superior in design and quality.

- Affordable Housing Initiative under Sustaining Progress (2005).

With regard to the Sustaining Progress initiative, a new State agency, the Affordable Homes Partnership (AHP), was established in August 2005 to drive and co-ordinate the delivery of affordable housing in the Greater Dublin Area, with particular reference to the Dublin Metropolitan Area.⁵⁸ The work of the AHP combined with the establishment of the DoEHLG working group for the implementation of Part V are expected to ensure a more effective and efficient system for the operation of Part V which should result in increased housing output across all tenures to meet current and future demand.

Since 2000 individuals catered for under the affordable housing heading have tended to be first-time buyers who do not qualify for social housing as they are typically people in employment, but whose financial resources are deemed inadequate to raise a mortgage due to the escalation in house prices over the last decade. Thus this affordable group represents a new group, which were not catered for in the past by local authorities.

The need for affordable housing is determined by local authorities in their Housing Strategies, which have to be completed under the requirements of the Planning and Development Act 2000. Calculations that 20 per cent and upwards of households will fall into the social or affordable categories have been made in many counties. There is an issue concerning the assessment of the need of affordable housing across the country. Given the strength of new home completions in recent years, it is not clear that the affordability problem which Part V was designed to address is acute outside of the main urban areas, notwithstanding the continuing increase in house prices. The next round of Housing Strategies and Action Plans should address this issue.

A key element of the forthcoming housing policy statement will be the introduction of a new, simpler and streamlined affordable housing scheme for those seeking access to home ownership.

The implicit assumption in respect of the various affordable housing schemes is that all households formed are assumed to fall into the category of seeking owner-occupation. However, a significant portion of households formed are likely to choose the private rented sector, and this may be the preferred tenure for many, particularly in the first time buyer (FTB) age groups. There is, therefore, a risk of over-estimating the requirements for 'affordable owner occupation' to the extent that it fails to acknowledge the role of private rented accommodation in meeting the needs of households. Again in order to ensure flexibility and choice, there is a need to ensure an adequate supply of good quality rental accommodation at the lower end of the market.

⁵⁸Defined as encompassing the Dublin Metropolitan Area as defined in the Regional Planning Guidelines for the Greater Dublin Area, 2004-2016.

THE PART V PROVISIONS

Part V refers to the provision under the Planning and Development Act, 2000 that up to 20 per cent of land zoned for residential developments or for a mix of residential and other uses be reserved to meet affordable (and social) housing needs and be made available to the local authority at the existing use value rather than the development value. On the basis of the total of 2,171 social and affordable units transferred under Part V to the end of 2005, and based on an estimated subsidy of approximately €50,000 per unit, the total value of the subsidy is worth €108.6 million.⁵⁹ This represents the revenue foregone by the builder/developer from selling units below the market price. The latter excludes the €20 million collected to date in financial contributions under Part V, which is to be ring-fenced by local authorities for the provision of social and affordable housing. Thus the total of €128.6 million represents a levy or a tax on the builder's Part V requirement. This is likely to push up the price of the remaining 80 per cent of units and may therefore contribute to additional house price inflation. On the other hand, the growing numbers on the affordable housing lists of local authorities suggests that demand is increasing. Thus the Part V provisions for social and affordable housing artificially distort the market.

Affordable units are transferred at a discount to eligible persons resulting in an increased demand for affordable housing, the supply of which is the responsibility of the private sector. The 1,470 affordable units transferred to date under Part V have been sold on to eligible persons at discounts ranging from 30 per cent to 50 per cent off the market price. There is also the value of the clawback in the event that affordable units are sold on, which accrues to the local authority. While there is also the saving on maintenance costs for the Exchequer, the question arises whether this is the most efficient way to procure affordable housing and whether the State would be better placed to provide a rental subsidy for affordable rented accommodation.

SUSTAINABLE DEVELOPMENT

The recent housing policy framework entitled *Building Sustainable Communities*⁶⁰ emphasises a number of key policy directions for the medium term, including the building of active and successful communities, continuing improvements in the quality of houses and neighbourhoods as well as continuing the implementation of measures to modernise the private rented sector.

The focus on sustainability is likely to become even more important in the future. Sustainable development has many

⁵⁹ Based on Housing Statistics from the Department of the Environment, Heritage and Local Government.

⁶⁰ *Housing Policy Framework – Building Sustainable Communities*, Department of the Environment, Heritage and Local Government, December 2005.

dimensions, which can only be addressed in the future planning and provision of residential development.

There is a need to ensure that there is an adequate supply of zoned and serviced land for residential development in development plans in order to provide flexibility and choice and to restrain land price inflation. This will be a key factor in driving down the rate of house price inflation over the medium term.

Policymakers need to be aware of the linkages between housing, land-use, transportation and environmental policies (see Morgenroth, 2002). A number of factors have led to development out into the more distant hinterlands of our cities rather than in the city areas. These include lower development costs in greenfield sites as opposed to brown-field sites, restrictive planning and zoning personal preferences. As a result the spatial pattern of house building that has emerged has encouraged long distance commuting, which has adverse implications for the environment.

The provision of housing needs to be integrated with the provision of other infrastructure, particularly public transport which is only feasible with higher densities, but also water, sewage and social infrastructure and other amenities.

SPECIAL NEEDS

The provision of accommodation for groups with special needs is an important measure for tackling social exclusion. In total 187 travellers were 'removed from the roadside' at the end of 2004 and 193 traveller specific units were provided or refurbished.

In a recent *Review of Homeless Strategies* published by the DoEHLG, progress to date on the various Strategies and action plans developed to address homelessness were examined (Fitzpatrick Associates, 2005b). The report highlighted the significant increase in funding for the homeless sector since 2000. Over the last six years, a total of €230 million has been spent on accommodation through the DoEHLG and over €80 million on care services under the Department of Health and Children. In 2005 the DoEHLG recouped over €44 million to local authorities in respect of accommodation and related services for homeless persons, compared with €12.5 million in 1999. This year a total of over €50 million in current expenditure has been allocated for this purpose.

The *Review* identified five priority areas on which resources should be focused. The main priority was seen as the provision of long-term accommodation to be sourced from the local authority, voluntary and private rented sectors. The RAS is expected to play a significant role here.

There are no indicators of progress on the homeless component, despite the significant funding provided to address the problem. The *Review* called for better data on the extent, nature and causes of homelessness. In regard to funding initiatives, more formal funding mechanisms were advocated and it was recommended that Action Plans be reviewed on an annual basis. The Government plans to

produce a revised strategy on homelessness on foot of this review, which will take the recommendations forward.

KEY RECOMMENDATIONS

Arising from the above priorities, this section contains the main recommendations in respect of each measure, which makes up the housing priority in the current NDP.

Recommendations are provided for the future direction of funding for each measure over the Plan period 2007-2013 in terms of whether the funding level should be “increased”, left unchanged or the “same” or “reduced” relative to the 2006 provision. The NDP Expenditure provisions for 2006 include the separate provision for Asylum Seekers. This measure should be removed from the Housing Priority for the next NDP period.

The recommendations, which follow reflect the view that the level of expenditure on housing has reached unprecedented levels and there is concern over the dependence of the economy on the housing market. There is also concern about the value for money obtained by the expenditure incurred:

- *Tenure Mix:* A better balance of tenures should be achieved through schemes using the private rented sector, such as the *Rental Accommodation Scheme*. The net result would be a lower level of capital spending for new build, acquisitions and housing maintenance. Consequently, it is recommended that the average annual spend on local authority housing should be reduced in the next NDP compared with the 2006 level.
- *Special Housing Needs:* The spend on social rented accommodation by the voluntary housing sector should be maintained, given its focus on providing rented accommodation for key groups with special housing needs, such as the elderly, the disabled and the homeless.
- *Tenant Purchase Scheme:* The value of housing units sold under the tenant purchase scheme should reflect more closely the market value of the local authority dwellings being purchased outright. If market value is not an option there should be a clawback provision over the first ten years. In the event that costs are not fully recovered the scheme should be terminated.
- A priority should be to ensure that the *RAS* becomes fully operational as soon as possible this year.
- *Fair Rents Policy:* A fair rents policy across all social housing tenures, as stated in the *Housing Policy Framework* and addressing the issue of indexation of rents as part of this package needs to be implemented.
- *Rationalisation of Schemes:* The range of existing schemes and supports and their eligibility criteria need to be restructured in order to deliver a more streamlined set of housing policy interventions with clear objectives, targets and output levels.

There may be a case for considering whether the Mortgage Interest Supplement Scheme, administered by the Department of Social and Family Affairs, should be included as an instrument of housing policy with all other housing interventions administered by the DoEHLG. We support the need for a graduated system of supports but believe that the system, as it exists, could be simplified.

- *Affordable Housing:* A new simpler and streamlined affordable housing scheme for those seeking access to affordable housing for home ownership or renting should be implemented as planned. We recommend a reduced level of spending in the next NDP for non-Exchequer loan finance. With the entry of a number of financial institutions into the affordable mortgage market, the requirement for Housing Finance Agency (HFA) loans should be significantly reduced in any event.
- *Part V:* The housing supply provisions under Part V should be reviewed in order to ensure that they are working efficiently and effectively and that they are not holding up the delivery of housing supply. The impact on land prices as a result of Part V should also be examined. The Part V provisions should acknowledge the role of the private rented sector in meeting the needs of households. If the conclusion is reached that the Part V provisions are not working effectively, the subsidy transferred under Part V, of the order of €128.6 million should be collected by other means from the housing market.
- *Public Private Partnerships:* More use of public private partnerships should be made in urban areas for regenerating local authority housing estates and improving the quality of the existing local authority and social housing stock. This would allow a reduction in the overall capital provision for schemes aimed at improving the quality of the housing stock, most of which is spend on regeneration programmes.
- *Homelessness:* The recommendations from the Government's review of the implementation of its homelessness strategies need to be implemented. Schemes that provide accommodation for groups with special needs are important for tacking social exclusion and it is recommended that the level of expenditure remains unchanged.

Based on the projected levels of expenditure for each measure the overall planned NDP expenditure over the period 2007-2013 is set at €1.861 million per year on average compared with the estimated provision of €2.014 million for 2006. The capital amount is set at €1.67 million per annum on average compared with the estimated provisional PCP outturn of €1.55 million in 2005.

The provision of further resources for investment must be matched with other accompanying measures that will ensure that the interventions have the greatest possible impact. In this respect we

recommend a number of accompanying measures, which are further discussed in Chapter 11. These include issues relating to the better integration with land use planning and policy impact analysis.

Table 13.7: Housing Priority 2007-2013 Recommendations

Measure	Recommendation	2006	2007-2013
		€million	Average €million
1. Local Authority Housing	Reduce	875	820
2. Voluntary Housing	Same	278	278
3. Improving Access to Affordable Housing	Reduce	415	340
4. Housing Stock Improvements	Reduce	277	254
5. Accommodation for Groups with Special Needs	Same	95	95
6. Asylum Seekers	Same	74	74
Total		2,014	1,861

Note: Figures in above Table are taken from Appendix 3.⁶¹

⁶¹ NDP Expenditure in 2006 from the *Revised Estimates for the Public Service 2006*. There are, however, some discrepancies between the above figures and the estimates provided under the DoEHLG vote and the capital provisions in the PCP. The total capital plus current provision for Housing is €1,370 million according to the DoEHLG vote in the Estimates for the Public Service, compared with a total capital plus current provision of €2,014 million per the NDP Expenditure above or €1,940 million excluding the provision for Asylum Seekers. A considerable amount of the difference is due to the exclusion of some €410 million in non-Exchequer loans for affordable housing from the Housing Finance Agency. The current expenditure provisions above exclude €19 million for the new Rental Accommodation Scheme, which is included in the Estimates figures for 2006. The capital investment allocated under the MACIF is €1,245 million.

14. WATER AND WASTE

WATER INFRASTRUCTURE

14.1 Introduction

Water and sewerage infrastructure are a vital component of the national infrastructure since the availability of clean drinking water is a key factor underlying the health of the population. Water is required for many industrial and service activities and therefore is a prerequisite to the efficient functioning of the economy. Waste water treatment is necessary to preserve the environment and protect public health. However, the importance of water and sewerage infrastructure in itself is not sufficient justification for public investment in this area. Rather it highlights the need for Government to ensure that an adequate supply of clean water be available and the treatment of waste water be carried out to a sufficient standard.

While water and sewerage services are largely publicly provided, being the responsibility of the local authorities, in some cases individuals or groups of individuals have organised these services for themselves. As Table 14.1 shows over 80 per cent of households have a public water supply and almost 65 per cent have public sewerage access. The number of households that are connected to public water and sewerage facilities has increased significantly over the period 1991 to 2002 with over 300,000 additional households connected to public water supply and almost 250,000 additional households connected to public sewerage supply. Interestingly, the number of households utilising an individual septic tank, which identifies the housing unit as a one-off house, has increased by just 65,000, which seems at odds with some public comments over recent years.

Before we consider each of the factors in driving the need for investment it is important to note that the investment needs are not independent of the way the sector is organised. In particular, while businesses pay water charges, private households have been exempt from paying water charges since 1997. In this respect Ireland is an outlier in Europe since volume based charges are applied in almost all EU countries. This means that the most important signal to limit demand for water, namely the price of water is not obvious to individuals. In the absence of such price signals the demand for water will be excessive.

Table 14.1: Households by Water and Sewerage Infrastructure Type, 2002

Water Supply	1991	2002	Change
	739,313	1,055,577	
Public supply (incl. Local Authority Group Scheme)	(77.6%)	(82.5%)	316,264
Private Water Supply (incl. private group scheme)	175,145	183,531	8,386
	(18.4%)	(14.3%)	
No piped water and not stated	38,285	40,509	2,224
	(4.0%)	(3.2%)	
Total	952,743	1,279,617	326,874
	(100%)	(100%)	
Sewerage system			
	576,035	822,574	
Public sewerage	(60.5%)	(64.3%)	246,539
Individual Septic Tank	342,042	407,768	65,726
	(35.9%)	(31.9%)	
Other including no sewerage facilities and not stated	34,666	49,275	14,609
	(3.6%)	(3.9%)	
Total	952,743	1,279,617	326,874
	(100%)	(100%)	

Source: CSO *Census of Population 1991 and 2002*.

The international literature on the responsiveness of water demand to price changes shows that the demand for water is inelastic, that is a 1 per cent increase in the price of water will result in a less than 1 per cent reduction in the demand for water (see Dalhuisen, Florax, de Groot and Nijkamp, 2003). However, the introduction of charges would constitute a significant price change, which is likely to reduce demand significantly. In this respect the comparison of unmetered demand for water with metered demand for England and Wales provides some useful insights (OFWAT, 2005). These show that in 2004-5 metered water consumption was in the region of 10 per cent less than unmetered demand. In general, studies of the effects of the introduction of metered charging show reductions in water consumption of around 10 per cent, and much more in some cases.

Clearly, the demand for water determines the stock of infrastructure that needs to be in place to meet this demand and, therefore, impacts on investment needs. Metered consumption per day in England and Wales is less than 140 litres per head (OFWAT, 2005). In Ireland it is likely to be 170 litres per head per day (Fitzpatrick, 2005a). With excess demand in the absence of price signals, the level of investment needed to satisfy demand will also be excessive.⁶² While there appears to be a perception that the introduction of domestic water charges would be unpopular, results from scientifically conducted surveys suggests that only a minority of the population are opposed to the introduction of water charges (see Scott and Eakins, 2001).⁶³

⁶² Whether or not it would be economic to introduce metered charging is something that can be assessed, using a standard appraisal that takes account of financial and economic values (European Commission, 2001).

⁶³ These surveys were conducted in 1994 and 2000. 97 per cent and 82 per cent respectively reported that they were in favour of some direct charge. In 2000 just 6

Given the manner in which the provision of water and sewerage services is organised the rationale for further public investment is due to:

- Population increase,
- Increased economic activity,
- EU Directives,
- Climate change.

We briefly consider each of these.

POPULATION AND ECONOMIC GROWTH

As was shown above in Chapter 4, the population has increased substantially over recent years and is projected to increase further. Similarly, economic activity has increased but while strong growth is forecast this rate of growth is expected to moderate. This will inevitably lead to increasing demand for water and increased waste water output. Furthermore, as the population increase has a significant impact on the housing market through increased demand, new infrastructure will be required to facilitate housing construction.

Population growth, outlined above, points to the need for capacity to accommodate 4.86 million persons in 2013 and 5.28 million in 2020, in the *High Growth* scenarios. Given a baseline population of 4.13 million in 2005, these projections represent growth of 13 per cent and 28 per cent respectively. Additionally, the trend towards lower house occupancy will give an upward push because water consumption per head rises with lower numbers per household. GNP growth of 40 per cent is also projected though it is not certain what growth can be expected in the water intensive sectors such as Food and Chemicals, as against water extensive sectors such as Financial Services. There could be further requirements with respect to quality and to individual parameters (trihalomethanes, pesticides etc.). The National Urban Waste Water Study (Department of the Environment, Heritage and Local Government, 2004) outlined how trends in population growth point to continuing investment needs. In the absence of upgrades, 49 per cent of plants could have inadequate capacity by 2022. Clearly, the spatial trends in population distribution and the need to implement the NSS are important considerations in targeting investment.

EU DIRECTIVES

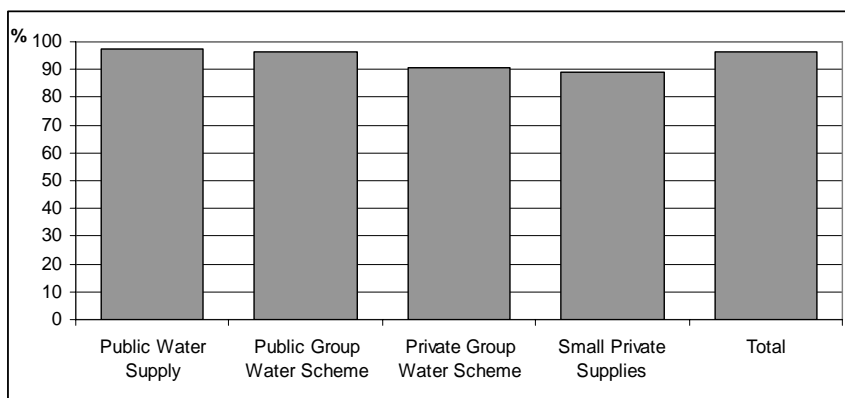
The main Directives of relevance are the Urban Waste Water Treatment Directive (91/271/EEC) and the Drinking Water Directive (98/83/EC) and, recently, preparation for the efficiency and management procedures under the Water Framework Directive's regulations (SI No. 722 of 2003).

per cent of respondents reported that they did not want a charge and thought 'Government should pay'.

The Urban Waste Water Treatment Directive (UWWTD) has been the main driving force behind the investments under Environmental Infrastructure during the 1990s and the current NDP. This Directive was particularly focused on the standard of waste water treatment rather than the environmental need for higher treatment standards. Consequently, the priorities for investment due to this Directive were rather different from the environmental priorities that might have been determined on an objective basis for Ireland. A higher priority should have been given to pollution of lakes and rivers than was the case and scarce resources were devoted to other lower priority areas because of the directive. Overall, implementing this Directive was expensive without necessarily achieving optimal impact (Scott and Convery, 1999).

The EU Drinking Water Directive (DWD) sets out to ensure that drinking water is free of harmful organisms and contains only safe levels of other substances, the levels of which are set by the Directive. Compliance with the directive is measured by the EPA, which has published regular reports on drinking water quality. The most recent report for 2004 is the first report that allows an assessment of compliance with this Directive. The report shows that overall 96.3 per cent of water supplies are compliant with the DWD. There are some differences on compliance rates between different types of supply as shown in Figure 14.1.

Figure 14.1: Compliance with the Drinking Water Directive by Type of Water Supply, 2004



Source: EPA (2005).

The Water Framework Directive (WFD, 2000/60/EC) came into force in December 2000. Its gestation during the 1990s encouraged the Government's approval in 1998 of a framework for charging non-domestic customers of water services and the setting up of seven River Basin Districts (RBD), three of which are shared with Northern Ireland. This paves the way for water authorities to combine to provide water services in a coherent manner.

The main innovation of this directive are threefold:

- It is oriented to enhancing human welfare. Rather than concentrating on the standard of treatment facilities, it focuses on an improved environment. The main objective is the achievement of “good status” in all waters by 2015. Where “high status” currently exists, it must not deteriorate.
- The river basin is to be the natural unit for water management and each river basin must be assigned to a River Basin District, which is to be the administrative unit for co-ordinated management. A River Basin Management Plan must be drawn up by December 2009 for each RBD describing the “gap” to meeting the objectives and the measures designed to fill the gap.
- Account of the principle of recovery of costs of water services shall be taken *including environmental and resource costs* in accordance in particular with the polluter pays principle. Adequate incentives are to apply to encourage consumers to use water resources efficiently, with recovery of costs for water services, and adequate contribution of users, disaggregated into at least industry, households and agriculture.

There is an opt-out for member states not wishing to apply sectoral cost recovery, say for social reasons. Ireland intends to avail of this opt-out in the case of the domestic sector due to opposition from a minority of the population (see the discussion above).

The regulations associated with this directive, S.I. 722 of 2003, European Communities (Water Policy) Regulations, came into force in 2003 with a series of target dates for compliance with different aspects. With a strong water-based leisure and tourism sector there are many advantages to be gained from compliance, besides health impacts.⁶⁴

The fact that compliance is a legal requirement need not mean that measurement of the effect of the investment on water quality is superfluous. There is scope for flexibility in the prioritisation of schemes, for example.

GLOBAL WARMING

Taking the long-term issue of global warming first, climate and hydrological studies for Ireland suggest that seasonal shortages are possible in areas where water supply capacity is already under stress (Sweeney, 2002, McGrath *et al.*, 2005). Looking at the effects on water resources by the middle of this century, Sweeney’s work suggests:

- A widespread reduction in total annual runoff is likely that will be most marked in the east and south-east of the country.

⁶⁴ The value of leisure use has been found to be significant and the value of salmon angling to be very high (Curtis, 2001).

- Winter run-off is predicted to increase in most of Ireland.
- All areas will experience a major decrease in summer runoff, particularly in the east of the country.
- Seasonal flooding may occur over a larger area and persist for longer periods of time.

Since evaporative losses are also likely to increase during summer months, the water resource changes projected will have a significant effect on reservoir yields. Water supply infrastructure is expected to come under growing pressure, particularly in the Greater Dublin Area and the strategic implications of this are profound for a number of areas, particularly spatial settlement strategy.

The projected changes in water availability pose potential problems for the dilution of water-borne effluent. With a greater frequency of low flow conditions, additional precautions will be required to ensure that concentrations of water pollutants do not give rise to acute effects. It is recommended that minimum flow constraints are determined more conservatively, particularly where new urban or agricultural discharges are envisioned. Greater incorporation of groundwater protection considerations is also recommended as aquifers assume increasing importance as sources of water supply as competition for reduced surface resources intensifies.

In addition to being more expensive to provide, water services will need careful positioning to avoid suffering infrastructural damage on the one hand and, on the other hand, to avoid imposing damage on vulnerable water resources through abstraction and discharges. In so far as the construction of water infrastructure itself acts as a “facilitator” for future population location and growth, the positioning of such infrastructure has long-term effects. Although global warming may only impact in the future, and there is much uncertainty, it is still worthwhile taking such matters into account where choices exist at present.

14.2 Assessing Progress

Expenditure on the four water measures of the Environmental and Social Infrastructure Operational Programme (ESIOP) under the current NDP to end-2004 has been €2.74 billion, representing almost 90 per cent of the forecast expenditure for this period. Expenditure targets were revised after the mid-term review. The overall reduction in target expenditure was from €3.8 billion to €3.1 billion. By contrast, there was a greater than anticipated expenditure on waste water projects, the domestic component of which is 100 per cent Exchequer financed. Overall expenditure has caught up and is running close to target. Financial progress is summarised in Table 14.2.

Expenditure under the Rural Water headings up to mid-2004 adds a further €194 million for the BMW region and €118 million for the S&E region.

Table 14.2: Financial Progress

Measures	Expenditure 2000 to 2004, € Million	% of Target %
1. Waste Water	1,673.9	135.7
2. Water Supply	289.2	71.7
3. Management and Rehabilitation	153.4	34.6
4. Infrastructure Support	280.0	54.7
5. Coastal Protection Measure	32.3	
6. Rural Water	311.7	54.0
Total	2,740.5	86.0

Source: Fitzpatrick Associates (2005a).

In contrast to overall progress, expenditure on Measure 1, waste water treatment, is way ahead of the original NDP targets, reflecting the large size of initial schemes. The other Measures lag behind to varying degrees.

The most striking feature is the slow progress with Measure 3, Management and Rehabilitation, which includes the water conservation programme, so much so that the target expenditure was radically reduced. This suggests that larger projects, which are directive driven, have crowded out small projects (Fitzpatrick Associates, 2005a). However, the recent increased rate of assistance on these rehabilitation works, from 75 per cent to 90 per cent, should have a positive impact in accelerating progress. Progress is on target in both NUTS 2 regions with the exception of the water supply measure where the Southern and Eastern region's expenditure is low in relation to target.

The targets for the period 2000-2006 were re-specified at the mid-term review in order to relate them more closely to the investment objectives, rather than to inputs, and these additional targets are also shown. Importantly, expenditure under the waste water measure has achieved 90 per cent compliance with the Urban Waste Water Directive.

14.3 Lessons from Past Plans

An important issue in measuring impact is the proper choice of indicators. The indicators given in the case of water supply are satisfactory and give a good idea of progress in relation to aims. These measure the number of persons (or person equivalents (PE)) in households supplied by new or upgraded schemes and the rate of compliance with drinking water regulations. However, the production of indicators for the output and impact of waste water schemes, on the other hand, has been more difficult. The original indicators, "Number of waste water schemes completed/in construction/planning", were improved after the mid-term review, being replaced by an indicator tracking additional capacity in terms of population equivalent.

But scheme-specific data on the quality of the waters downstream of the schemes, and ideally upstream too, is necessary if

one wishes to judge the effectiveness of the investments.⁶⁵ Indeed, in order to properly establish that the investment has resulted in water quality improvements it would be necessary to identify the water quality before and after the investment is put in place. This is important since there are polluting activities, other than municipal waste water discharges, that strongly influence water quality. For example, the effect of agricultural activities on waters, including runoff from animal wastes and fertiliser application, can be very important. The results of the waste water investments, though they may operate correctly, could range from useful to useless, depending on these other activities. The investment is likely to have been effective, other things being equal, if downstream water quality has improved, and downstream water quality, before and after the scheme has to be a major indicator.

This discussion highlights the importance of choosing the correct sampling points. According to a report on an earlier programme, it appears that no prior arrangements had been made to ensure relevant positioning of sampling points in the receiving waters in order to judge the effects of new schemes (DKM, 2004).

In terms of impact, a major area of improvement to the environment lies in the quality of tidal waters. The ratio of eutrophic (or potentially eutrophic) to the rest has declined from 30:70 to 22:78. According to the recent up-date Evaluation of the ESIOP (Indecon, 2005) there has been only a slight improvement in the length of river classified as unpolluted (from 67 per cent to 70 per cent) which is still well below target although the proportion of lakes that are unpolluted has improved more substantially (from 65 per cent to 93 per cent) but is also still below target. The update evaluation also noted that compliance with the Drinking Water Directive was expected to reach 100 per cent in 2006 having increased from 92 per cent to 97 per cent. Similarly, the compliance rate with the UWWD is expected to reach 100 per cent in 2006.

The fact that targets of the Directives are being met while the environmental benefits are not obvious raises the issue of whether other measures would have resulted in more environmental benefits. Clearly, water quality is a function of a range of activities. If the investment that has taken place has resulted in small environmental benefits or benefits that have been eroded by other activities, then the prioritisation for investment might need to be changed, and other actions such as tougher regulations on farm effluent should be considered.

Another major achievement is the improved water supply to two-thirds of a million persons. The most recent EPA report on drinking water quality referred to above is not directly comparable with previous reports. However, previous reports did highlight a

⁶⁵ As the methodology report (DKM, 2004) states: "Care is needed in identifying locations of water testing. As a general rule, a location as near as possible to the outfall should be used. More than one location might be worth investigating, for example, if there were water abstraction downstream of a waste water treatment plant, or a number of different amenity areas were affected."

steady improvement across all indicators. However, the reports did highlight persistent problems in private group water schemes.

It should be noted, however, that as the investments have been put in place over an extended period the overall environmental benefits may only arise over time. Thus, in some cases it may be too soon to judge the effects. The EPA reports stress the inexact nature of measurement and the many contributory causes of changes in water quality, including the weather. For example, changes in the stretches of river meeting a particular quality standard are often marginal so that it is difficult to conclude that there was any material change in environmental quality.

An important finding of cost-benefit analysis of water conservation projects by DKM (2004) was that these projects were almost invariably highly worthwhile and this finding begs the question as to why they were not undertaken earlier. The amount of water saved or, more accurately, the reduction in unaccounted for water was in the region of 20 per cent. That is, unaccounted for water was reduced from 59 per cent to 39 per cent, on average, allowing the water authorities to accommodate rapid growth without recourse to additional abstractions. The average internal rate of return was 25 per cent, and the benefit to cost ratio 2.65.

The absence of previous cost-benefit analyses may partly explain why conservation had not been undertaken earlier. But the more likely reason was the over-riding imperative of the directives, the less generous funding arrangements and the fact that saving water would have limited benefit for local authorities owing to the financial structures in the water sector. This is an example of the inefficiency to be expected from incorrect pricing. The issue of domestic water pricing will need to be addressed and it is discussed above in the chapter on accompanying measures.

Finally, while water and sewerage infrastructure has important health and environmental benefits, the empirical analysis on the economic returns to this infrastructure conducted as part of the *Mid-Term Evaluation* of the current NDP found that this return was not statistically different from zero which contrasts with the return to transport infrastructure (see Fitz Gerald *et al.*, 2003). However, the methodology used might not capture the full impact of this type of infrastructure, and the economic return might emerge in a more indirect way.

14.4 Priorities for the Next Plan

The rolling three-year Water Services Investment Programmes (WSIP) have taken account of the National Water Study (Atkins, 2000) and the report on urban waste water discharges (EPA, 2004) as well as the stated needs of water authorities. The most recent WSIP for 2005-2007 covers investments totalling €5.1 billion.

The proposed investment for each authority is broken down into four major categories, that is, (1) the investment in schemes including water and waste water schemes and investment in the network and planning; (2) water conservation; (3) asset management

studies and River Basin District projects under the WFD and (4) investment in servicing land to enable development.

The bulk of the investment, approaching 89 per cent, is proposed for the schemes under (1), of which some 45 per cent is earmarked for hubs or gateways. Some 5.5 per cent of the total is to be spent on water conservation and 5 per cent on servicing land. Of the investment in servicing land, some 60 per cent is for hubs or gateways. Investment in the studies including Asset Management studies represents about 1 per cent.

It is not possible to judge these allocations in the absence of an assessment of the costs and benefits of each type of investment. The *ESIOP Progress Report for 2005* notes that the programme includes all remaining schemes required to achieve full compliance with the Urban Waste Water Treatment directive. While the shares for gateways and hubs and for rehabilitation may look small, this may be for sound reasons and because investment in new water infrastructure will be more water sparing in any case. However, it is worth recalling the lessons learned above, that water conservation had been given insufficient attention and that spatial planning needs increasing scrutiny. The recent gateways study (Fitzpatrick Associates, 2005b) identified the need for investment in water and sewerage infrastructure in four gateways (Dundalk, Galway, Letterkenny and Midlands).⁶⁶ In any event, investment in water and waste water infrastructure required in the gateways and hubs should be prioritised in order to support the development of critical mass.

Given the analysis above, our recommendations for the different investment priorities are as follows:

Waste Water. Compliance with UWWTD stands at over 90 per cent at end-2005, having risen from 25 per cent in 2000 (Fitzpatrick Associates, 2005a). Given this high compliance rate only limited funding will be needed to achieve full compliance. The Government's more stringent aim should be to improve overall water quality, meaning that pollution from other sources such as from agriculture needs to be curtailed. Investment is required for growth and for compliance with WFD, which will be more 'objectives-based'.

Water Supply. By end 2005 some 0.666 million population (44 per cent) out of the target of 1.5 million population had been served, leaving a considerable gap. However, the level of public funding needed is moderated by the fact that substantial resources for development related infrastructure are collected as development

⁶⁶ As the basis for this recommendation was not outlined in that report it is difficult to comment in more detail on the investment needs in the gateways.

contributions.⁶⁷ Correct charging of domestic users could reduce total demand by some 10 per cent, and could delay the need to pipe water from west to east by 2 to 4 years with present technology. Investment is required to fill the gap and to cater for growth.

Management and Rehabilitation of Infrastructure: This activity has yielded high returns in the past and provided that this is still the case, the activity is being rightly stepped up, mindful of the limit to returns to leakage control beyond the economic level (ELL). Asset Management Studies and River Basin District projects also fit here, with a view to production of meaningful annual data series on water services.

Infrastructural Support for Expanded Economic Activity: Growth in population and economic activity call for this to continue, except that economies should be gained from adhering to the NSS by concentrating expansion at gateways and hubs in order to use large-scale networks and plant. Realistic payment on the part of all water service users would reduce requirements considerably.

Coast Protection and Management: No evaluation has come to hand on this measure, but as increased erosion is possible with the effects of global warming some investment is warranted.

Rural Water Investment: Some further investment is required to fill the gap in achieving the last NDP's target.

In addition to the discussion in this chapter, the analysis on the capacity of the building construction sector and the impact of expanding demand for the outputs of this sector (see Chapter 5), needs to be taken into account in framing the financial recommendations. Our recommendations are summarised in Table 14.3. As was outlined above the level of Infrastructure investment implicit in the public capital programme is higher than can be prudently delivered in the absence of simultaneous measures to reduce the private demand for the output of the building and construction sector. As a consequence the level of expenditure on water and waste water infrastructure will need to be limited.

⁶⁷ According to data from the Department of the Environment, Heritage and Local Government development contributions amounted to €546 million in 2005, which constitutes a significant increase over 1996 (€46 million) and 2000 (€110 million) (see <http://www.environ.ie/DOEI/DOEIPol.nsf/wvNavView/Overview?OpenDocument&L#14>).

Table 14.3: Recommendations on Water Infrastructure

Measure	Recommendation	2006 (€million)	2007-2013 Average (€million)
Waste Water	Reduce	179.3	90
Water Supply	Increase	45.6	70
Management and Rehabilitation of Infrastructure	Increase	35.9	70
Infrastructural Support for Expanded Economic Activity	Reduce	65.2	40
Coast Protection and management	Same	3.1	3
Rural Water	Reduce	147.0	60
Total	Reduce	476.1	333

Note: The 2006 allocation is based on the figures for the NDP and is not directly comparable with the MACIF used in Chapter 5.

Investment in itself will not be sufficient to ensure efficient water and waste water services. Thus, a number of accompanying measures will be required. These were outlined in some detail in Chapter 11, so they are only summarised here.

The accompanying measures include:

- introduction of a proper pricing mechanism for domestic water and waste water,
- more extensive use of cost-benefit analysis,
- better impact measurement,
- collection of appropriate data and indicators,
- commercialisation of the sector,
- better integration with land-use planning.

15. WASTE INFRASTRUCTURE

15.1 Infrastructure: Progress Since 2000

The level of waste generation in Ireland, whether municipal, industrial or hazardous, has been rising rapidly over the last decade, driven by population and economic growth, notably the expansion of the construction sector (Construction & Demolition waste is now the largest non-agricultural waste stream).

At the start of the current decade, Ireland was towards the bottom of the class internationally in terms of waste management infrastructure, both physical and regulatory, with a high dependence on landfill and low levels of diversion to more environmentally benign channels. The landfill infrastructure was in general poor, with much of it reaching the end of (if not already past) its design life. Planning logjams and public opposition were slowing down the renewal and improvement of the infrastructure. OEE 2005⁶⁸ indicates that in 2001 there was an average of six years remaining landfill capacity around the country, with as little as two years in a number of areas.

A range of developments has occurred in the meantime, which has had a significant impact for the better. These include:

- As of 2004, remaining landfill capacity had increased to an average of 8 years, and all operating landfills are now licensed by the EPA.
- Charging for domestic waste collection has become the norm, and in 2004 the Minister for the Environment, Heritage and Local Government required the introduction of use-based charging systems.⁶⁹
- Waste collection has been privatised in many parts of the country and new private collection routes introduced, and in some cases waste disposal is also privatised, which should generate efficiency gains.
- The Plastic Bag Levy (15c per bag) was introduced in 2002, and has been successful in terms of reductions in number of bags used and in litter.

⁶⁸ Office of Environmental Enforcement, *The Nature and Extent of Unauthorised Waste Activity in Ireland*, 2005.

⁶⁹ S. Scott and D. Watson (2006). "Introduction of Weight-Based Charges for Household Waste Collection", presented at Irish Economic Association Conference, Bunclody, 28-30 April, 2006, highlights the benefits of use-related charging.

- A Landfill Levy of €15/tonne has been introduced, which at least partly internalises the environmental costs of landfill.
- Recyclables collection from the urban residential sector is now widespread, and the number of bring banks, recycling centres and Materials Recovery Facilities (MRFs) has risen significantly.

Recent guidance from the Minister for the Environment, Heritage and Local Government⁷⁰ has clarified that movement of waste across regional boundaries is not contrary to the proximity principle in waste management. This follows recommendations in the Department's policy document *Taking Stock and Moving Forward*, in the *Regional Planning Guidelines for the Greater Dublin Area 2004-2016*, and from the EPA in this regard.

The *Taking Stock and Moving Forward* document has also recognised the validity of compensating host communities for the presence of waste management facilities, through "community gain".

The Office of Environmental Enforcement (OEE) has been established within the EPA. The EPA has recently reported that problems of large-scale illegal dumping of waste, including cross-border, have reduced, due to improved enforcement and cross-border co-operation.

In addition, two new incinerators – one for hazardous waste and one for municipal waste – have passed through the planning and waste licensing processes, and should proceed to construction, though continued public opposition and legal challenges leading to further delay cannot be ruled out.

Notwithstanding progress to date, problems remain, notably:

- Waste disposal capacity problems exist in many parts of the country;
- There remain legacy issues regarding landfill sites used in the past (including illegal sites);

Despite progress in dealing with large-scale illegal dumping, illegal disposal of waste by individual households, whether through backyard burning, fly-tipping or unauthorised collection, continues. The EPA recently reported that 21 per cent of Irish households are not registered with an authorised collection system although it is not suggested that all these households are disposing of waste illegally.

One important driver for illegal dumping is the rapid increase in the price of legal waste disposal options, most obviously landfill.⁷¹ OEE 2005 indicates that the average price of landfill disposal has risen from typically €10 per tonne in 1996 to in the region of €150 per tonne in 2004, and in one case is €240 per tonne (see Office of Environmental Enforcement, 2005). The impact of these gate fees on collection charges creates a strong incentive to use unauthorised

⁷⁰ Circular WIR: 04/05, 3 May 2005, Department of the Environment, Heritage and Local Government.

⁷¹ This has also doubtless also been a major driver of the increase in recycling.

disposal methods: eliminating this at the level of small waste producers, particularly households, will represent a challenge. We understand, however, that landfill prices have fallen somewhat more recently, due to increased competition.

WASTE ARISING

Table 15.1 summarises waste arisings in Ireland since 1998, based on the EPA's National Databases for various years. There is a clear upward trend in waste generation in Ireland, driven doubtless by the strong increase in population and economic output.

However, a number of streams exhibit levels of change that are on the face of it unlikely. Construction & Demolition waste is particularly noticeable. The National Waste Report 2004 from the EPA highlights that significant improvements have been achieved in the quality of data collection over time. Given this, caution is needed in interpreting the data for earlier years and the growth rates. One would expect, however, that municipal and packaging waste data are reasonably robust over time. While still growing, there has been a slowdown in the rate of growth of municipal waste, and the quantity of packaging waste, having been on a strong growth path in the late nineties, now appears to be in gradual decline.

Table 15.1: Waste Arisings in Ireland, 1998-2004 (000 Tonnes)

Waste Stream	1998	2001	2004	Annual Avg % Growth	
				1998-01	2001-04
				%	%
Household	1,221	1,469	1,737	6.4	5.8
Commercial	755	1,157	1,227	15.3	2.0
Street Cleaning	81	78	70	-1.1	-3.9
Total Municipal Waste	2,057	2,704	3,035	9.6	3.9
Construction & Demolition	2,705	3,651	11,168	10.5	45.2
Manufacturing	4,876	5,120	5,044	1.6	-0.5
Mining & Quarrying	3,511	3,334	4,045	-1.7	6.7
Hazardous	370	492	674	9.9	11.1
Other	1,915	2,083	1,117	2.9	-18.8
Total Non-Agricultural	15,434	17,384	25,082	4.0	13.0
Packaging Waste	683	873	851	8.5	-0.8
Biodegradable Municipal	na	na	1,935		

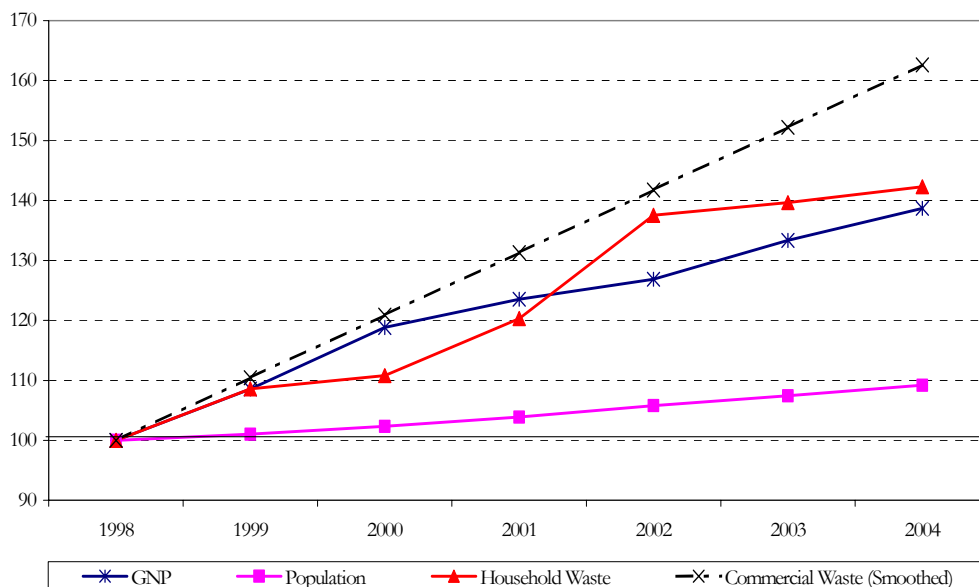
Source: EPA National Waste Database, various years, *National Waste Report* (2004).

If we compare growth in household, commercial and total non-agricultural waste with the aggregate real economic growth rate and the population growth rate, as per Figure 15.1 overleaf, it can be seen that household waste has been growing slightly faster than economic growth since 1998, but commercial waste has grown by significantly more (large year-on-year variability in the commercial waste line has been smoothed out).

DISPOSAL TO LANDFILL

Landfill still dominates as a waste management option in Ireland. A total of 6.4 million tonnes of waste was disposed of to landfill in 2004 (70 per cent of it industrial waste and 28 per cent municipal waste). Table 15.2 summarises the quantities of municipal waste landfilled in recent years, and the percentage that this presents of total municipal waste.

Figure 15.1: Growth in Household and Commercial Waste Vs Economic and Population Growth, 1998-2004



Sources: EPA, National Waste Databases/Reports, CSO, National Income & Expenditure Accounts and Population & Migration Estimates.

Table 15.2: Municipal Waste Landfilled, 2001-2004

	000 Tonnes	Percentage Change	Landfill Rate*
		%	%
2001	1,992		87
2002	1,902	-5	79
2003	1,833	-4	72
2004	1,819	-1	66

Source: National Waste Report (2004).

*Municipal waste landfilled as a percentage of municipal waste landfilled or recovered. Managed waste differs from waste arising due to household waste whose disposal method is unknown.

The proportion of municipal waste being disposed of to landfill is falling rapidly, as the recovery rate rises (see below). However, underlying growth in waste generated is eating up much of the improvement: the quantity of municipal waste landfilled fell by 0.8

per cent in 2004, having fallen by 4 per cent in 2003 and 5 per cent in 2002.

RECOVERY/RECYCLING

Table 15.3 below sets out the recovery rates in the main waste streams as of 2004, as well as the relevant targets. Since the only recovery method in use in Ireland to date has been recycling, the recovery rate equals the recycling rate. Improvements in the recovery rate in recent years have been remarkable, albeit from a low base. Ireland is close to if not already ahead of a number of the targets currently in place, notably for municipal waste and packaging waste. Municipal biodegradable waste is perhaps the stream furthest from its target: a reduction in volumes landfilled by 25 per cent between 2004 and 2006 appears unlikely to be achieved.

Table 15.3: Actual and Target Recovery Rates in Main Waste Streams

Stream	Actual		Target	
	2001 %	2004 %	%	Year
Household	5.6	19.5	50	2013
Commercial	23.8	50.8	Note 1	
Total Municipal Waste	13.3	34.0	35	2013
Construction & Demolition	65.4	85.2	85	2013
Industrial	25.5	35.4		
Packaging Waste	25.3	56.4	50	2005
Biodegradable Municipal	15.7	32.6	Note 2	

Source: EPA National Waste Database, various years, *National Waste Report* (2004).

Notes: 1. No specific target for commercial waste. 2. The original target for biodegradable municipal waste was to reduce the quantity landfilled to 75 per cent of the 1995 level, i.e. 0.97 million tonnes, by 2006. Ireland has notified the Cion of its intention to avail of a derogation on this requirement, until 2010.

Recycling of household waste, one of the two main constituents of municipal waste, has quite a way to go to reach the 2013 target of 50 per cent, and would need current momentum to be maintained over the period to reach it.⁷²

The implication is that recycling of commercial waste is making up the slack. A 35 per cent overall target for municipal waste recycling implies a very modest target for commercial waste recycling, and perhaps the balance between household and commercial recycling targets should be revisited.

We can also analyse the breakdown of household, commercial and packaging waste, as well as the respective recovery rates, by material type, as per Table 15.4. Paper & Cardboard is the most

⁷² A concern in relation to depending on continued growth in recovery rates is that we may be experiencing the take-up of easily exploitable recovery opportunities, particularly by commercial organisations, and probably driven in large part by the major increase in landfill charges. Looking forward, there may be non-linearities and “brick walls”, beyond which further progress will prove difficult.

important element in these waste streams, in weight terms. Glass, Plastics and Wood also feature, while Organics is the largest single element in household waste. Recovery rates vary greatly: significant proportions of Paper & Cardboard, Glass and Aluminium are recovered from households, but rates for other categories are low, notably organics, perhaps reflecting lack of centralised facilities. Significant levels of recovery are being achieved across most commercial wastes. The same is true of packaging waste, although the rates for Plastic and Aluminium are perhaps a little disappointing.

Table 15.4: Household, Commercial and Packaging Waste by Type and Recovery Rate, 2003

	Household		Commercial		Packaging	
	Breakdown by Weight	Recovery Rate	Breakdown by Weight	Recovery Rate	Breakdown by Weight	Recovery Rate
	%	%	%	%	%	%
Paper & Cardboard	21.0	21.6	50.5	49.2	42.5	41.2
Glass	7.0	49.0	5.6	32.4	13.0	53.0
Plastic	9.0	6.3	8.8	38.4	20.7	16.7
Ferrous			1.7	49.3	6.9	56.0
Aluminium	5.0	16.7	0.5	0.0	1.4	15.1
Other Metals			0.2	59.9	0.8	0.0
Textiles	2.0	5.8	0.7	7.6	0.1	0.0
Organics	32.0	7.7	12.1	10.4	0.0	
Garden	12.0					
Wood			11.1	95.3	10.3	94.1
Others	12.0	1.0	8.9	51.5	4.2	0.7
Total	100.0	13.1	100.0	47.4	100.0	41.7

Source: EPA, *National Waste Interim Report* (2003), Office of Environmental Enforcement, *The Nature and Extent of Unauthorised Waste Activity in Ireland* (2005).

* Breakdown of Commercial and Packaging waste streams are for 2001. Breakdown of household stream is for 2002, as quoted in OEE (2005).

Ireland's waste management infrastructure remains narrowly based, consisting almost exclusively of landfills and recycling collection and sorting facilities, as summarised in Table 15.5.

Table 15.5: Number of Waste Management Facilities, 1998 and 2004

	1998	2004
Landfills accepting Municipal Waste	76	34
Bring Banks	837	1,929
Civic Amenity sites	30	69
Households with segregated dry recyclable collection ('000)*	70	564
Percentage households with dry recyclable collection*	5.7%	40.7%
Households with segregated organic waste collection ('000)*	0	52

* Latest figure relates to 2003.

Source: EPA, various reports.

The number of landfills accepting municipal waste is now less than half what it was in 1998, as old facilities are closed down, and a

smaller number of new facilities are opened. Remaining capacity in landfills in 2004 was eight years, still too tight for comfort, given the tortuous planning process that new facilities must go through. There are areas of the country where remaining capacity is significantly less than eight years.⁷³ This implies that in some cases landfills will continue to be used beyond their design lifetime, with environmental implications, or there will be considerable shipping of waste around the country.

The numbers of bring banks and civic amenity sites have more than doubled over the same period, and there has been an eightfold increase in the number of households with recyclables collection.

Ireland's dependence on other countries to manage hazardous waste has increased significantly, with the majority of this waste being exported. Likewise, the final processing of recyclables collected in Ireland is largely occurring overseas, as Irish glass, iron and paper processing facilities have closed down in recent years. Exporting of waste and recyclables is not necessarily negative: it presumably is the most commercial (and perhaps the only) option at the moment, and may well be the best option from an environmental point of view, if economies of scale in treating such waste properly are significant.

15.2 Lessons from Past Plans

Waste management, like water services, is a decentralised public function, managed by the Local Authorities. It differs from water services in that over the last decade the Government has made (and stuck to) a decision that waste disposal should be largely self-financing. This, coupled with increasing privatisation of services, has meant most activity is not subject to central Government funding.

The current National Development Plan anticipated a capital investment of €826 million (£650 million) towards the provision of waste management infrastructure, broken down as follows:

- €572 million (£450 million) through the PPP method;
- €127 million (£100 million) through local authority own resources;
- €127 million (£100 million) through the Exchequer and EU co-funded grant scheme.

The €127 million grant scheme was to provide support towards capital costs of recycling and recovery infrastructure, as provided for in the regional and local waste management plans, and capital costs of hazardous waste landfills, to be provided in accordance with the EPA's National Hazardous Waste Management Plan.

The *Mid-Term Evaluations* of the relevant Operational Programmes indicated that slow progress was being made in delivery of investments in the waste management area, principally due to delays in adoption of regional waste management plans.

⁷³ Department of the Environment, Heritage and Local Government *Waste Management – Taking Stock and Moving Forward* (2004), p. 20.

While some progress has been made on the physical delivery of waste management facilities, most of it outside the aegis of the NDP, the question of delivery of this vital infrastructure within reasonable timeframes still needs to be addressed.

There is also a question as to whether current waste management structures are as economically efficient as they might be. Two factors lead to concerns on this issue:

(1) The price of landfill disposal in Ireland is currently high by international (particularly UK) standards, which could mean that either:

- There may be some inefficiency in delivery of or operation of these facilities;
- Ireland's landfill infrastructure is of a higher quality than in other countries;
- Landfill operators are exploiting local monopolies to charge high prices; or
- Landfill services provided by Local Authorities are not commercially priced.

We understand that landfill charges have fallen somewhat of late, as a result of increased competition, and there may be more scope for this.

(2) There are significant economies of scale in the delivery and operation of facilities such as landfills and incinerators. The regional approach to delivery of waste management services in Ireland may not be fully exploiting these economies.

These issues are worthy of further research.

15.3 Priorities for the Next Plan

The availability of waste management services is vital for the operation of a modern economy. The policy aims going forward should be:

- To deliver the optimal combination of waste management options for Ireland's circumstances, determined by the relative costs and benefits (financial and environmental) of the various options.
- To facilitate the emergence of a commercialised, economically efficient and environmentally responsible waste management sector, not necessarily totally privatised, but exposed to competitive pressures.
- To provide adequate capacity to service planned growth in the gateways and hubs as identified in the National Spatial Strategy is a particular priority. This does not mean that each gateway and hub needs to have its own individual set of waste management facilities, however, simply that it has access to such facilities at economically efficient prices.

Landfill will remain the single most important type of waste management infrastructure in the short to medium term.

Notwithstanding increasing diversion of waste to other routes (including incineration) over time, there will remain a residue that will need to be landfilled. Landfill will also act as the fall back where other routes are for whatever reason unavailable (for example, a breakdown in an incinerator or difficulties in recycling markets). Ensuring adequate landfill capacity is thus the highest single priority.

As of the end of 2004 there were 34 landfills accepting municipal waste in the State. Many of these have limited remaining capacity. With modernisation, rationalisation and increasing diversion over time, the eventual number of municipal landfills in the State should be considerably lower.

The delivery of other waste management infrastructure is also important, and the requirements of the Landfill and other Directives, and Government environmental policy, need to be taken into account. Furthermore, decisions regarding investments in infrastructures – particularly landfills and incinerators – cannot be taken in isolation, since they impact significantly on each other's waste supply streams.

As waste management services are largely self-financing, there is a limited role for central Government funding. Provided environmental externalities are fully internalised via EPA regulations and enforcement, the landfill levy and possibly an incineration levy, there should in theory be no need for further public subvention of recycling, composting or related activities.

We would see two exceptions to this general principle:

- There is an infant industry argument in favour of subventing waste management routes other than landfill and incineration in the short term at least. This should include technical and socio-economic research focusing on their usage and potential in Ireland.
- There remains a legacy issue with regard to the environmental impacts of old closed landfills that were not operated to adequate standards. The cost of remediation work to deal with these sites should not affect current and future markets for waste management services. In a competitive market this should automatically be the case (see discussion of competition issues below). This might put an inordinate burden on Local Authorities, however, and it would be appropriate for Central Government to fund the remediation of old public landfills. The remediation of old privately-owned landfills should remain the responsibility of their owners, though there is the possibility that the State will have to foot the bill in some cases, where private owners do not have the resources to do so. Care should be taken that this outcome does not become the norm, as the consequences for the taxpayer are significant.

For 2006, Central Government expenditure on waste management under the NDP is due to be €10 million for provision of recycling infrastructure, and €10 million for remediation works at existing landfills (a further €6 million is included under non-

Exchequer expenditure). We would be in agreement with this level of funding going forward.

Table 15.6: Financial Recommendations

Measure	Recommendation	2006 (€million)	2007-2013 Average (€million)
Waste Management	Same	26	26

Note: The 2006 allocation is based on the figures for the NDP and is not directly comparable with the MACIF used in Chapter 5.

Beyond public subvention, there is the question of broader investment by society in waste management infrastructure. In the context of a commercialised waste management industry, the various suppliers in the market – Local Authorities and private companies – will decide the appropriate level of investment required.

However, the level of investment in modern landfill and incineration will need to increase considerably over current levels to deliver the required infrastructure in the medium term, and eliminate capacity constraints. Enhanced levels of investment may have to be maintained beyond the life of the next NDP. Every opportunity to take advantage of economies of scale should be utilised (see Chapter 11).

16. ENERGY

The challenges facing the energy sector in Ireland are considerable, spanning a wide range of different areas and a number of difficult economic and organisational problems. The international context sees rapidly rising demand for energy due to the growth in the world economy, which is eroding the potential spare world oil and gas capacity. With limited prospects of new finds of fossil fuels over the coming decades, it seems quite likely that real oil and gas prices will rise substantially in the longer term. In addition, the need to tackle the problem of global warming will also lead to increasing real prices for fossil fuels. Preparing for a world of much higher energy prices will require significant policy changes and significant additional investment. This is the context in which energy policy is being formulated in Ireland.

Ireland does not have a natural advantage in the supply of energy, except in the area of renewable resources where, with the exception of onshore wind, the technologies are not today competitive. In order to ensure that increasingly expensive energy resources are allocated among users in an optimal manner it is essential that in all cases business and households should pay the full economic cost of energy: there should be no explicit or hidden subsidies, even if Irish costs are higher than among some competitor countries. However, every effort needs to be made to ensure that the energy required is delivered at minimum possible cost to both business and household customers. Policy on investment in energy infrastructure needs to take this into account.

16.1 Background

The overall objective of the State in regulating the energy sector is to ensure the lowest possible cost of energy in the long term subject to supply being secure and subject to meeting the environmental constraints. The need for state intervention in the energy sector arises for three reasons:

- The presence of economies of scale in parts of the industry, which make competition difficult.
- Energy is a vital ingredient of modern life and the State has an important role in ensuring a secure energy supply, including a secure supply of electricity.
- The negative environmental externalities that arise from energy production and consumption (of which the most pressing is global warming) require State intervention to move the economy to a more sustainable path.

Ireland has seen exceptional economic growth over the last 15 years. However, the growth in energy demand has been much slower. For the future the rate of growth of the Irish economy is likely to slow (Fitz Gerald *et al.*, 2005), though still remaining more rapid than that of the EU generally, while the growth in the demand for energy is likely to be slower than that for output. The two exceptions to this trend are the demand for energy from the transport sector and the demand for electricity.

Demand for energy use from transport is likely to continue to grow for the foreseeable future. While this will require a further increase in the supply of energy, even more important, it will pose significant congestion problems. The solution lies in moving Ireland towards a more sustainable model of development involving less congestion. This would, in turn, deliver significant benefits in terms of reduced energy use and emissions. This approach underlies the recommendations on investment in transport in Chapter 12.

While the growth in demand for electricity is slower than that of GNP, it is still significant. This means that for Ireland to have a secure electricity supply, investment in electricity generation and electricity transmission infrastructure will be required for at least another decade. Significant additional investment will also be needed in transmission infrastructure in order to reap the benefits of an integrated all-island electricity market.

This need for new investment makes Ireland rather different from the rest of the EU where capacity is generally adequate. The cost of the new investment will have to be paid by consumers in Ireland over the next decade whereas in many other EU countries the cost of the necessary infrastructure has already been substantially paid off. Thus, policy measures to minimise the cost of financing infrastructural investment will be more important for consumers in Ireland than in much of the rest of the EU.

Ensuring a secure energy supply for the foreseeable future is of crucial importance for the health and economic welfare of the country. In the case of oil supplies there is limited action the Government can take to ensure physical security. While very unlikely, physical interruption to supply would have grave consequences. In the very unlikely event of it happening it would affect all of the EU and an integrated response at EU level would offer the best chance of minimising disruption.

Over the coming decade Ireland is likely to become increasingly dependent on gas to supply its energy needs. In particular, by 2010 the bulk of electricity generation will depend on gas. This means that any physical interruption of gas supply could have very serious consequences. If such an interruption were to be sustained for more than a few days it could see the island of Ireland lose the bulk of its electricity supply with very serious consequences for the health and welfare of its citizens.

While the chances of a break in an undersea pipeline are very small, if such an event were to occur it would take some considerable time to repair. It is for this reason that the second gas pipeline to Scotland was of major importance to the energy security

of this island. The provision of the second pipeline greatly reduces the probability of what was already a very unlikely event. However, the vast bulk of the island's gas supply still goes through a single onshore pipeline in Scotland. As a result, it is important that the supply of gas from the Corrib gas field is brought onshore as soon as possible to enhance the physical security of Irish energy supply. In addition, consideration should be given to strengthening the onshore gas transmission system in Scotland on which nearly all of Irish gas supplies currently depend.

Ireland, along with other developed economies, faces a much greater risk to its economy from sudden shocks to energy prices than it does from a possible interruption in physical supply. For example, even if there were major disruption in the Middle East, oil supplies would still be available – at a price. However, major price shocks could have serious economic consequences and the regulatory authorities need to consider how best to insure against such future shocks. A number of instruments can be used to provide such insurance: fuel diversity and financial instruments both have roles. The National Treasury Management Agency (NTMA) should consider whether the desirability of hedging against such risks should affect policy on the portfolio of the national pension fund. The regulatory authorities should ensure that consumers are aware of potential risks and that, where feasible, suitable instruments for hedging risk are available.

As the price of gas and oil are linked and are both likely to rise in real terms it is desirable to have some diversity in the source of electricity supplies. For example, undue reliance on gas could be limited through a levy on gas used in electricity generation with the proceeds of the levy returned to consumers. The need for some diversification would suggest awarding some premium to renewable energy over and above the market price. Fuel diversity should be managed by using market instruments rather than by regulation. Research and Development in alternative energy sources will be important in securing the long-term security of energy supply for the island (see Chapter 19).

With the full integration of the island gas market consideration should be given to developing gas storage facilities either in the old Kinsale gas field or else in salt caverns near Belfast. At present it does not seem wise for the Irish authorities to specifically encourage facilities for the supply of Liquefied Natural Gas (LNG). It should be left to market forces to determine if and when such a development should take place.

An all-island electricity market is likely to confer significant benefits on consumers, reducing the long-term cost of a reliable electricity supply below what it might otherwise be. To allow an integrated and efficient all-island electricity market to develop, it is essential that there is adequate investment in electricity transmission to physically link the existing separate systems. It seems likely that a second interconnector between Ireland and Britain could produce significant benefits for electricity consumers on the island.

The structure proposed for the all-island electricity market by the two regulators seems likely to provide the best opportunity for securing a competitive supply of electricity for consumers on the island of Ireland over the next decade. The electricity pool into which all generators will sell their electricity, when combined with a suitable regime of capacity payments to electricity generators, should encourage supply at a minimum price. It should also increase the transparency of the regime making for cheaper and more effective regulation.

16.2 Investment in Energy Infrastructure

The very rapid growth in the economy over the last decade has seen the demand for electricity and gas rise rapidly. Major investment in electricity generation in the early 1980s, in particular the construction of the Moneypoint generating station, left Ireland with overcapacity in electricity generation by the mid-1980s. However, this surplus capacity was gradually whittled away over the 1990s, leaving Ireland with a shortage of generating capacity by the early years of the current decade. This has required the ramping up of investment in the utilities sector, especially in new generation, to a level previously only seen in the early 1980s. A steady stream of new generation capacity will continue to be required well into the next decade.

While demand will in all likelihood slow in the next decade, the prospect of continuing growth in GNP of around 3 per cent a year will see some continuing increase in electricity demand for years to come. Over the second half of this decade the demand for electricity will rise by around 4 per cent a year (Fitz Gerald *et al.*, 2005a). With peak demand for electricity in the Republic of Ireland currently being over 4,500 MW this suggests the need for nearly 200 MW of new generating capacity each year. As new base-load power stations tend to come in units of 400 MW this suggests the need for a new generation station at least every two years. In addition, there will be a need to replace some existing stations, partly due to old age, but also because of the increasing commercial penalty that fossil fuel plant will experience as a result of the need to tackle the problem of global warming (Fitz Gerald, *et al.*, 2005b). It is very important for the economy that such investment takes place to avoid any interruption to supply.⁷⁴

In addition to the need for additional electricity generation, the electricity transmission system on the island is inadequate for the needs of the economy. The constraints, which it imposes raise the risk of possible temporary shortages of power and they also raise the cost of delivering power to consumers. As a result, there is also a need for major additional investment in transmission capacity. The current programme of investment in transmission is the largest undertaken for decades.

⁷⁴ As discussed in Fitz Gerald *et al.* (2005), such interruptions can be very costly.

There are a number of important strategic investments in electricity transmission that are urgently needed:

- First, to make the all-island electricity market work and to reduce the costs imposed by current transmission constraints, a second electricity interconnector to Northern Ireland is vital.
- Second, it is vital for the interests of the Northern Ireland system that the transmission system in the Louth area is strengthened to allow export of power to Northern Ireland. When this new interconnector is completed it will reduce all-island costs arising from transmission constraints and it will enhance security of supply and competition on the island.
- Third, in the longer term there may well be a need to invest in additional capacity for transferring electricity between the island of Ireland and Great Britain. This investment could well be important, not so much as a source of additional power, but rather to enhance competition and security of supply. The completion of this interconnector to Great Britain may not be achieved before the end of the NDP in 2013 because of the difficulties in dealing with physical planning regulations both in Ireland and in Great Britain.
- Fourth, the scope for business to grow in the North- West of the Republic could be seriously constrained by the absence of adequate transmission. The obstacle to providing this infrastructure lies in the physical planning system. This issue may not be solved by central Government. Instead the relevant local authorities in the BMW region may need to choose whether to progress the necessary electricity transmission infrastructure or to forego the opportunity for any major expansion in business activity.

Investment in the gas infrastructure was very significant over the 1990s with the roll out of the distribution system and the completion of the key elements of the transmission infrastructure. The second gas pipeline to the United Kingdom was completed in 2002. This pipeline was needed to ensure security of supply of gas, as well as providing for a long-term increase in capacity. However, there are three additional infrastructural projects in the gas industry that need to be completed. The first is the bringing onshore of the Corrib gas. This gas is needed to enhance supply security on the island. This piece of infrastructure will be completed by the commercial operator without any implications for charges to consumers or the taxpayer. The second piece of infrastructure will be the completion of the North-South gas pipeline over the next two years. This will be of value to Northern Ireland in enhancing supply security there. The benefits to the Republic are likely to be smaller. The final piece of transmission infrastructure is the possible need to strengthen the onshore transmission in Scotland. At present all gas for the island of Ireland comes through a single pipeline in

Scotland. This leaves Ireland vulnerable in the case of a very low probability event resulting in that pipeline's rupture. However, the need for this investment in Scotland would probably be obviated by the successful rapid completion of the Corrib infrastructure.

Other gas infrastructure issues that need to be resolved are the provision of gas storage on the island and also the possibility of a LNG terminal being developed. If a company wants to install a new LNG terminal in Ireland, providing they meet the necessary (and demanding) environmental and planning considerations, it will go ahead. However, there does not seem to be a good case for Government financial support for such a venture. The gas from such a terminal would sell onto what is effectively a British Isles gas market. Thus even if the LNG could be bought at a lower price, the operator of the terminal would sell it at the going market price. Given the small size of such a terminal relative to the British Isles market, it would not affect domestic prices in Ireland. While it would confer some security of supply benefits on the British Isles market, if the recommendations above (on Corrib and the onshore pipeline in Scotland) were implemented these benefits would be no different than if the terminal were in Great Britain.

In the case of gas storage the provision of additional capacity on the island could enhance security of supply as well as possibly cutting the cost of provision by allowing gas to be stored to cover the winter peak. Two possible locations are being examined – the old gas field off the South coast and possible underground storage near Belfast. The economics of such storage remains to be determined but, as with the rest of the gas infrastructure, the final decision on whether to invest should be done on a purely commercial basis.

16.3 Efficient Delivery of Infrastructure

To ensure such investment takes place in a timely manner will require the establishment of a transparent market that will provide adequate incentives for such investment. The new all-island electricity market, which will commence operation in July 2007, should provide a suitable framework for such investment. The market will make “capacity payments” to owners of electricity generation where they make a significant contribution to security of supply while the spot market price will reward the cost of actually buying fuel. Taken together this market should provide adequate, but not more than adequate incentives to achieve the necessary investment in generation.

In the all-island market (pool) each firm will offer to supply electricity at a pre-specified price. All firms will know that they will receive most of their capital and non-fuel operating costs from capacity payments. As a result, in the auction to supply electricity to the pool each firm will bid in only their fuel costs. This will greatly facilitate the information flow to the regulator. The regulator will know the price bid by each station and will be able to check that price against the price of the fuel delivered to that station. This will

facilitate the regulatory authority in its task of ensuring a level playing field for all market participants.

The move to the all-island market will somewhat reduce the ESB's dominant position. In considering the economics of enhanced interconnection to Britain the value of such interconnection in enhancing competition on the island should also be taken into account. The growth in demand for electricity, with further new independent generation coming on-stream over the coming decade, will also reduce the ESB's market share. However, even after these changes the ESB will still be in a dominant position.

The operation of the new market structure is likely to encourage new investment in generation in segments of the market where the existing ESB plant is not very economical. This should see significant closure of ESB plant over the rest of the decade to be replaced by new plant, generally built by different operators. Together with enhanced interconnection to Britain, this should see the ESB's dominant position in the generation sector on this island substantially eroded by early in the next decade.

Finally, the ESB should sell between 500 MW and 1,000 MW of plant over the period to 2010. If this happens, with the closure of uneconomic plant, the ESB could be allowed to replace some of the plant that will close. By early in the next decade this would achieve the necessary reduction in the ESB's dominant position.

It is important that the operator of the transmission system for the all-island market should be established on a basis independent of all other players. When this happens consideration should be given to transferring ownership of the transmission system in the Republic to ESB National Grid. Whoever owns the transmission system it will be important that that company would contract with other companies, including ESB, to maintain and develop the system, ensuring competitive pressure on costs. Where possible, ESB distribution and supply should also move to buying in services on a competitive basis. This is the model that was adopted by Bord Gáis Éireann in the late 1980s and it would make the cost structure of operators transparent, facilitating regulation.

All of this investment in energy infrastructure should be delivered on a commercial basis without any requirement for finance by the taxpayer. The general principle should be that consumers of energy should pay the full economic cost (including negative environmental externalities) of energy. Ireland does not have a comparative advantage in energy. To subsidise energy consumption in any way would lead to an inefficient use of resources. To subsidise consumption in any way would then encourage business to expand into areas where the cost of producing in Ireland is higher than elsewhere, moving the economy away from the sectors where Ireland's long-term competitive advantage lies. As well as misallocating resources, a subsidy to energy would further distort the economy because of the need to raise taxes to pay for it. For example, raising taxes on income to subsidise energy would cause significant damage to the economy.

However, while the State should not subsidise energy, as the regulator it will have a very important role in ensuring that this infrastructure is delivered efficiently. As outlined above, the new all-island electricity market has the capacity to deliver a more competitive electricity system. However, as outlined in Bergin, *et al.* (2005b), there is a need for the State to ensure that the ESB disposes of sufficient plant to reduce its dominant position in the market. There is also a need to streamline the physical planning system to ensure that the necessary strengthening of electricity transmission takes place within a reasonable time scale (Chapter 11). The State will also need to ensure that the necessary legislation is put in place to allow the market to function efficiently.

So far the role of the State in developing the energy infrastructure necessary for the economy of the next decade is seen as being purely regulatory; the costs will be carried by consumers through appropriate commercial charges. However, there are still some limited areas where it may be appropriate for the state to play a more active role.

If the appropriate price signals reflecting the cost of emitting greenhouse gases were provided by fiscal instruments there might be no need for even limited State intervention. However, as reflected in Fitz Gerald (2004) the new EU emissions trading scheme (ETS) is flawed as it discriminates against renewables by providing an indirect capital subsidy to fossil fuel electricity generators. If the EU does not reform the EU ETS for the next round by providing for the auctioning of the bulk of emissions permits, the market may not give the right signals to ensure an economically efficient deployment of renewable generation. This may require some support mechanism to offset the distortions arising from the failure to auction all the emissions permits under the ETS. However, any such support should be financed as a charge on consumers rather than on taxpayers (through the Public Service Obligation – PSO). In so far as support is given for renewables it should be neutral with respect to technologies.

While the EU ETS covers nearly all of electricity generation the price of other forms of energy does not reflect the true cost of the damage done to the environment through the emission of greenhouse gases. With the entry into force of the Kyoto protocol, Ireland will face significant costs in complying with the targets set. If compliance is achieved through purchasing permits this will see a net loss of resources to the economy. A much more efficient method of achieving compliance would be to impose a carbon tax on all energy not covered by the EU ETS. As the revenue would be available to the Government to reduce taxes elsewhere the cost to the economy of reaching the required reduction in emissions would be minimised.

Finally, recent studies on energy efficiency highlighted the scope for reducing costs through investment in economically efficient technologies (see O'Malley *et al.*, 2003 and Sorrell *et al.*, 2004). The failure to invest what would appear to be optimal amounts in reducing energy consumption arises from market failure. If

instruments can be found to effectively counter this market failure they would prove worthwhile to implement. However, it is important that the effectiveness of energy efficiency policies is tested properly. It is not sufficient to show that there is a theoretical gain from any particular investment. It is important to establish what the effects of such investments are in practise.

17. TELECOMMUNICATIONS

17.1 Introduction

The vast bulk of activity in the communications sector is resourced entirely on a commercial basis. Within the current NDP there is one exception to this in the form of the E-commerce and Communications measure. The aim of this measure is to address gaps in infrastructure, to maximise the use of existing shared infrastructure and to drive demand in new services and activities in the sector.

Broadband access allows individuals and businesses instant access to the internet without dialling-up and provides a much higher capacity to access or send large amounts of digital data. It constitutes a technology that allows both businesses and individuals to change the way they operate. For businesses, broadband allows for improved communications and information transfer between plants or branches within the same organisation and improved communications and information transfer between businesses and their customers. This is particularly important in information intensive activities in the services sector or the services side of the manufacturing sector. Indeed, broadband has provided the basis for a range of innovations in business practices, which would not have been possible before. The whole range of telephony and data services are becoming part of a competitive market for those who have access to a broadband connection. Consequently, broadband has been identified as a factor that can contribute to increased productivity. For individuals the faster information transfer that is provided by broadband allows for changes in consumer behaviour e.g. downloading individual music tracks rather than purchasing entire albums. By providing more convenient and versatile access to the internet, broadband should increase PC ownership and usage and thereby increase the IT competence of the wider population, which in turn might have a positive impact on productivity. It is for these reasons that the future of a competitive telecommunications market with ready access to a suitable high-speed internet connection is of high importance for all businesses and all households.

The nature of the technology suggests that the primary gains from broadband are captured by firms and individuals directly so that any externalities are limited.⁷⁵ On that basis public intervention would not be warranted. However, the State has an important role

⁷⁵ This arises out of the fact that individuals or firms can be excluded from the service where it is available, which implies that telecommunications infrastructure/services only have very limited public good qualities.

as regulator of the sector, especially where there are monopoly elements to the provision of infrastructure. It is also clearly desirable to increase IT competence in the wider population as this may have some long-run benefits. Therefore, one should consider broadband a merit good, i.e. one the consumption of which should be encouraged, which means that there is a public interest in considering issues that prevent the roll-out and take-up of broadband. However, this does not provide a rationale *per se* for public expenditure, which is only justified if there are specific market failures that cannot be dealt with through better regulation of monopolies and which prevent roll-out and take-up.

17.2 Current Activity

Current activity in the NDP has been concentrated on a number of areas. First, the Metropolitan Area Networks (MANs) scheme, which was launched in 2004, aims at providing open access transmission networks in metropolitan areas, either through the laying of fibre optic cables or through wireless infrastructures. During the first phase of this scheme 27 networks have been constructed, of which 20 are managed by e-net. A further 90 networks were at a stage of advanced planning in the last quarter of 2005 (see Forfás 2005b).

A second scheme is the County and Group Broadband Scheme (CGBS) that was also launched in 2004 to promote roll-out of broadband services to smaller rural communities of less than 1,500 people.⁷⁶ Under the first phase €1.4 million was invested to provide broadband access for 36,000 people. The second phase, which has been in place since the start of 2005, aims to complete 119 projects covering a population of 355,000, which will cost €6 million. If these targets are achieved then 22 per cent of the rural and village population is expected to be reached through this programme.

Finally, the Department of Education and Science has been implementing a broadband programme – provision of broadband in all schools – and nearly all schools are now connected.

17.3 Experience

Over recent years a number of issues have emerged in relation to broadband. Overall roll-out of broadband has been slow resulting in relatively low broadband penetration. In an international comparison Ireland ranks second last among EU-15 countries with just Greece having lower availability (Forfás, 2005b).

One reason that has been put forward as a possible constraint to broadband roll-out is the low population density. A low population density may render a service commercially unviable since the cost of providing the infrastructure exceeds the likely return. This is likely to

⁷⁶ In 2002 the CSO *Census of Population* identified 552 small towns and villages with a population of less than 1,500 inhabitants, which accounted for a total population of 282,469 or just 6.8 per cent of the total population. Just over 1.5 million or 36.7 per cent of the population reside outside urban centres altogether.

be the case in relation to fibre-optic cables, but alternative technologies such as wireless technologies could be utilised instead, which should reduce the infrastructure cost, since at the margin an additional user will not result in additional costs.

The Forfás benchmarking study highlights the fact that other countries with a low population density, such as Sweden and Finland, have managed to achieve high broadband coverage. However, rather than focusing on density the focus should be on urbanisation. For example, while on average there are just 22 persons per square kilometre in Sweden, 78 per cent of the population reside in urban areas. In other words there are a large parts of Sweden, which are essentially uninhabited. Providing broadband infrastructure in urban areas is considerably cheaper as the total cable length required is substantially shorter. Thus, for a given investment a larger market can be served resulting in higher profitability. Thus, it may not be the low population density in Ireland that is the constraint but the spatial pattern of the population distribution, which is characterised by low urbanisation and excess dispersion compared to most other developed countries (see the discussion in Chapter 6).

Broadband take-up has been slow with Ireland ranked 25th out of 32 countries in an international comparison, despite the fact that demand has increased substantially but from a low base. A number of factors contribute to determine broadband take-up. One of the key factors has been the structure of the industry and the weakness of the regulatory framework. The incumbent had weak incentives to invest and the regulatory framework had limited power to regulate the crucial monopoly part of the business. For the future, availability of broadband will itself determine take-up but demand will determine availability. As roll-out of broadband has been slow in Ireland it should not be surprising that take-up has been slow.

Another important determinant is price. In this respect there has been a substantial improvement since cost of broadband access has reduced over recent years so that the cost of Digital Subscriber line (DSL) access has declined from a high €141 per month in 2002 to €29 per month in 2005. Of course, prices are strongly influenced by the degree of competition in the market place, and indeed the degree of competition appears to have increased across platforms and to some extent within. Nevertheless, substantial progress still needs to be made to increase competition. In the second quarter of 2005 just 2 per cent of telephone lines had been fully unbundled. In this respect the market structure is likely to be the major constraint on further rapid development, with the dominant player having little to gain from making its network available to other operators. Here stronger regulatory intervention is likely to result in significant progress.

Since broadband is primarily accessed through a PC the low demand for broadband may be related to the low PC ownership in Ireland. As is shown in Table 17.1 overall less than half of households had a PC in 2002, and just over 34 per cent had internet access. Noticeable is a significant urban-rural divide in the sense that

PC ownership is significantly higher in towns with a population in excess of 1,500. Interestingly, this difference is not quite as significant for Internet access. It is notable that PC ownership and Internet Access lags significantly behind mobile phone ownership where ownership is in excess of 100 per cent of the adult population. The experience with mobile phones suggests that once take-up reaches a certain level private demand will develop rapidly.

Table 17.1: Percentage of Households with Personal Computer (PC) and Internet Access by Type of Area

Area type	PC	Internet
Towns 1,500+	45.3	35.9
Towns 1,000-1,499	35.1	27.0
Towns 500-999	36.2	27.8
Towns under 500 but at least 50 houses	35.6	26.7
Rural – outside urban	41.7	32.1
Aggregate Rural Area (all areas outside of towns with a population in excess of 1,500)	40.6	31.1
State	43.5	34.1

Source: CSO Census of Population (2002) Volume 13.

17.4 Recommendation

Broadband can be regarded as a merit good. Thus, its provision and take-up should be encouraged. The merit good characteristic alone is not sufficient, however, to justify large-scale public intervention. Nevertheless, there are a number of issues that do require attention.

The interrelated low supply and demand for broadband can potentially be resolved through the market. However, the State still has an important regulatory role and there must be concern that regulatory problems have slowed the deployment of new technology. The regulatory powers of Comreg and the Department of Communications, Natural Resources and Marine may need strengthening to deal with the industry, in particular in dealing with the dominant incumbent Eircom. The current model of regulation is designed to deal with a situation where the incumbent faces effective competition through technical change giving rise to competing technologies. However, new technologies do not appear to be providing such competition effectively and the telephone wire (or optical fibre) connection to individual homes and businesses remains a key in providing broadband services.

As a result, the regulation of this key link and the powers of the regulatory authorities need strengthening. The regulator should ensure that the key final link to individual households is made available to competing suppliers of telecommunications services at minimum cost, subject to maintaining and developing the network. The investment in this final link is a key part of the national telecommunications infrastructure and is a de facto monopoly. The incumbent can potentially limit access for competitors through pricing or connection policy. The regulatory authorities have taken

action to ensure that this does not happen. However, the incumbent also has a strong incentive to get a return on its capital investment in a very short space of time, giving rise to a potentially very high long-run rate of return.

As with other vital infrastructure this key part of the system is a long-term investment and the regulator should have the power to control pricing so that the monopoly provider achieves its return over the life time of the asset, not just in the first few years. In addition, the regulator needs to have the power to require adequate investment to be made in upgrading the system.

Because of its monopoly status, and the resulting relatively certain return for investors, it is appropriate to allow a relatively low rate of return on this investment related to the interest rate on corporate bonds. One of the problems with the current situation has been that Eircom has a high level of debt finance. This could restrict the regulator's freedom of action. It means that if the regulator forces a pricing regime that involves temporary losses as the firm builds up business, it could pose financial difficulties for the firm.

The takeover of Eircom in 2001 and 2006 and the leveraging of that investment by new owners in 2001 restricted the company's ability to invest and price for the long term. In turn this has put pressure on the regulatory authorities to be less exacting on the incumbent. The recent takeover compounds these problems. It is now important that the regulatory authorities are given the powers to regulate the monopoly element of the business to promote long-term development of the telecommunications system.

Demand has increased strongly over recent years and this is likely to stimulate further roll-out of broadband. Demand can be further stimulated at no (or relatively low) cost to the Exchequer in a number of ways. Resources have already been devoted to providing broadband access for every school in the country. However, it is not clear exactly how this access is to be used. The obvious use is for computer studies classes. However, a more progressive approach would be to integrate the use of information technology including broadband in all subjects. This clearly requires the curriculum to be developed appropriately. This would develop IT competence among pupils and stimulate broadband demand at home as broadband access becomes an integral part of the education system. It is difficult to recommend the most appropriate mechanisms through which this should be done. Therefore, a number of different approaches should be developed and piloted in schools.

A further stimulus to broadband provision can be provided by Local Loop Unbundling (LLU) as this will generate additional competition. This should result in greater product variety and lower prices, thereby stimulating demand. Rather than requiring exchequer resources this can be achieved through effective regulation.

As was indicated above, the spatial distribution of the population in Ireland is such that provision of broadband infrastructure by the private sector in some areas may be slow and, indeed, without public intervention some areas may never receive provision. In this case there is a clear market failure, which needs to be assessed

thoroughly. The fact that a particular area does not have broadband access is in itself not sufficient to warrant intervention if there is not local demand for that service. This point is important since if no demand exists the resources expended on broadband infrastructure will have been wasted, at least in the short term.⁷⁷ In general the use of wireless facilities, which could be put in place in response to demand from the private sector, which would then require a lower level of subsidisation, is preferable, especially outside of the centres designated in the NSS.

CBGS has already made a significant impact on providing infrastructure in smaller more remote communities. Likewise MANs have also progressed. A key issue affecting these networks is proper integration into the wider national infrastructure to allow for backhaul. The lack of this backhaul facility may be deterring the take up of these facilities by service providers. As these facilities are already in place, or at the stage of advance planning, there is a risk that the resources that have already been devoted will be wasted. Included in the recommendation in Table 17.2, is a provision for limited support to linking these local infrastructures to the backbone infrastructure which should be considered. In order to ensure value for money such links should only be provided if a service provider can be found for the network and this service provider should be required to make a contribution to the cost of linking the network.

More important than any financial provision by the State will be the implementation of an appropriate regulatory framework. The current framework may need strengthening to deal with the monopoly elements of the system and to ensure that they are managed in a way that produces an appropriate long-run rate of return for the owners while at the same time delivering a cost-effective service to consumers.

Table 17.2: Financial Recommendation

Measure	Recommendation	2006 (€million)	2007-2013 Average (€million)
E-Commerce	Reduce	26.7	20

Note: The 2006 allocation is based on the figures for the NDP and is not directly comparable with the MACIF used in Chapter 5.

⁷⁷In this respect the experience in Northern Ireland is instructive, in that it shows that broadband availability does not guarantee high take-up rates. While there is 100 per cent broadband coverage take up is limited to 25 per cent of households, representing 52 per cent of households with internet access (OFCOM, 2006).