



**CHAMBERS
IRELAND**
IN BUSINESS FOR BUSINESS

Generating the Future – Ireland’s Energy Options

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Forward

Given recent energy price fluctuations, businesses are more focussed than ever on the importance of energy policy in Ireland. Increases in electricity costs since 2000 have added two per cent to the base cost of larger Irish industry. Security of energy supply is a much greater concern than was the case heretofore.

The challenge posed in terms of future energy policy is a complex one. A solution must marry the needs of security of energy supply, the concomitant need to diversify our methods of generating electricity, while still ensuring a competitive environment for Irish business and wider society. We must meet our international obligations on emission levels, while acting in a manner which protects Irish jobs. We must make best use of our indigenous natural resources while ensuring that our energy supply can meet the requirements of our growing economy.

This paper examines the energy debate from the perspective of both supply and demand. We offer a range of suggestions which we believe will increase both the security and diversity of our energy supply.

This debate cannot be put off any longer, to do so will only lead to more detrimental measures in the long term. Addressing Ireland's future energy needs is a task which must be undertaken now. This document outlines our vision for how Ireland can undertake that task.

John Dunne,
Chief Executive,
Chambers Ireland

Summary of Recommendations

Chambers Ireland's recommendations are as follows:

1. **An additional East-West energy interconnector to be commissioned without delay to facilitate connectivity to the UK and European markets.** This will help deal with issues in relation to security of supply.
2. **Break up ESB Power generation to facilitate a more competitive energy market.** The dominant position of the ESB within the Irish market is in itself a barrier to increased competitiveness. Chambers Ireland supports the decision of the regulator to further break up the ESB's generating portfolio.
3. **Promote security of supply of natural gas by maintaining a fiscal regime which encourages exploration and exploitation of indigenous reserves.** With natural gas accounting for 44% of the fuel mix in Ireland's electricity system, we are heavily reliant on this source. Developing our indigenous resources ensures security of supply and provides a boost to the Irish economy.
4. **Ensure that companies that abide by the planning process, are then given the protection of the law in carrying out their operations.** In terms of future exploration, it is critical that the Government makes every possible endeavor to sustain an environment in which both exploration and production are attractive to companies. This issue also applies specifically to companies that successfully gain planning permission for wind power, gas and other energy related projects.
5. **The case for nuclear power generation here in Ireland is not yet proven.** Given the costs of commissioning a nuclear power plant and the small size of the Irish energy market, nuclear power generation is not a viable option at present. However this state will ultimately be using energy generated by Nuclear power once we fully connect to the European energy market.
6. **Promote alternative energy as a means of diversifying our generating portfolio via extension of the BES into this thematic area.** Chambers Ireland believes that developing a range of alternative energy solutions can assist in promoting energy security, while also enabling Ireland to meet its international emissions obligations. Furthermore we should extend the Business Expansion Scheme (BES) to include investment in these alternative energy sources and biofuels.
7. **Introduce a 'shadow' carbon tax to enable all stakeholders to understand the implications of such a charge.** Chambers Ireland remains to be convinced of the arguments in favour of a carbon tax. Nevertheless a crucial means of enabling a real analysis of its implications would be to put a virtual tax in place for all energy consumers so that its implications could be fully understood.
8. **In the context of national CO₂ emissions audits, put in place a plan to progressively decommission old and inefficient infrastructure.**

9. **Implement the National Spatial Strategy (NSS).** The NSS offers a blue print for responsible spatial development in Ireland. Chambers Ireland supports its implementation and believes that the consequences of our current land use patterns are unsustainable. It follows that developments that run contrary to the NSS should be forced to pay the real cost of their construction via levies and charges.

1. Introduction

This high rate of energy demand growth has occasionally strained the country's energy infrastructure and, while these constraints are generally being addressed, they increase concerns about the country's overall energy security. These concerns are fuelled in part by the country's lack of substantial domestic energy resources and consequent high level of imports. In 2000, only 15% of the country's energy came from indigenous sources. The country's relative isolation and lack of extensive international energy connections also exacerbate Ireland's vulnerability to supply disruptions and/or price spikes¹.

Chambers Ireland views the current debate on energy and emissions as one of the most important currently faced by the business community and by policy makers in Ireland. We believe that central to any analysis of the future direction of Irish Energy Policy must be the following considerations;

- Security of Supply
- Competitiveness
- Meeting our International Obligations
- Equitable Burden Sharing (Polluter Pays)

These principles are not by any means complimentary and one of the challenges in proposing an energy policy is to find a balance between these important priorities for the Irish economy.

Security of Supply

Security of energy supply, both in terms of fuel supply and generation capacity is emerging as an issue of great significance in the Irish economy. Ireland continues to produce a relatively low level of electricity from domestic sources. With a high dependency on imported fuels such as coal oil and gas, we are at the mercy of international markets in terms of both security of supply and price levels. Our supplies are coming from areas such as the Middle East and possibly in the long run Russia, regions which are not politically the most stable².

Amárach Consulting, using World Bank and ECB statistical data has concluded that Ireland is one of the most vulnerable countries in the developed world in terms of security of oil supply and sensitivity to a change in supply or price of oil. This is a position which is greatly exacerbated due to our complete reliance on oil-based sea and air transport for international connectivity³.

In terms of security of supply of generated electricity there are further issues of concern. While it is estimated that the current level of capacity is adequate to meet the needs of our

¹ International Energy Agency Report (2003). *Energy Policies of IEA Countries, Ireland 2003*. p7

² Institute of European Affairs: *EU - Russian Energy Relations in Energy Policy Newsletter*.(Nov 2006) p6

³ Forfás (2006) *Baseline Assessment of Irelands Oil Dependence..* p19

economy, recent reports, by Eirgrid, indicate that there is need for additional investment in capacity to ensure supply beyond 2011⁴. Given the long lead time in planning and construction of such facilities, it is incumbent on the Government to make provision in this regard.

Competitiveness

Irish industry is operating in a global economy where it is already facing substantial challenges in terms of competitiveness. The figures displayed in the recent Deloitte Report on the Irish Electricity Sector⁵ indicate that Irish consumers, including Irish business consumers, are supporting an inflated cost of electricity production in the region of €100m per annum due to what they describe as inefficiencies in the ESB. Since 2000, Irish industry has suffered price rises in energy costs of over 60%, this has added just over 2% to the cost base of the bulk of Irish Industry⁶.

A benchmarking exercise undertaken by Forfás placed Ireland second last of 13 countries in terms of the success of meeting the electricity needs of industry. This report measured four factors, price, security of supply, access / quality and the competitive landscape⁷.

Even prior to the Deloitte Report the Department of Enterprise Trade and Employment had characterised the electricity market as follows;

Of most concern is the fact that the market is not competitive, and does not work well for consumers, both private – and crucially for national competitiveness – industrial and other business users. The ESB continues to dominate the market, and independent generation has not been incentivised to enter the market, not least because of the circumscribed independence of EirGrid, the Transmission Systems Operator⁸.

The sectors which are most vulnerable to the uncompetitive nature of electricity generation include;

- Pharma Chemical
- Electronics
- Food Beverage
- Tobacco
- Hotel & Leisure
- Retail

The Department of Communications Marine and Natural Resources also indicates the detrimental effect that continuing rise in energy prices will have on the practice of Research and Development in the Irish economy⁹. This would be detrimental to our position as a knowledge-based economy.

⁴ Eirgrid (2005) *Generation Adequacy Report 2006 – 2012*. Transmission System Operator Ireland

⁵ Deloitte (2006) *Review of the Irish Electricity Sector* p7

⁶ Howley, O’Leary, & O’Gallachoir (2006). *Energy in Ireland 1990 – 2005- Trends issues, forecasts and indicators*.p3 Dublin: Sustainable Energy Ireland

⁷ Forfás (2006): *Electricity Benchmarking Analysis*.

⁸ Department of Enterprise Trade and Employment (2005) *Irish Electricity Market Challenges*. p3

⁹ *ibid*. P16

As we plan the future of energy in Ireland we must reduce inefficiencies and find lowest cost solutions, while still adopting best practice. Solutions should aim at being revenue neutral in the medium term.

Recent price fluctuations have focused Irish industry on the potential problems it faces in the era of increased costs for energy. Forfás this year spelled out in clear terms the importance of this issue to Irish business.

The enterprise sector in Ireland is expressing concerns regarding energy pricing and security of supply... Ireland's ability to continue attracting high levels of Foreign Direct Investment and to provide a supportive environment for Irish industry generally will depend on its capacity to deliver and secure an uninterrupted energy supply at a competitive cost¹⁰.

Chambers Ireland recognises that there may be an investment cost in addressing our energy supply needs, however the cost of failing to do this, will be far greater for the Irish economy¹¹.

Meeting our International Obligations

Under Kyoto Ireland must reduce carbon emissions from their current level to a rate 13% below 1990 levels. The challenge faced by Ireland is significant, particularly due to the substantial level of growth achieved in the economy in the intervening years and the associated rise in income levels and energy consumption.

The National Climate Change Strategy remarked that our account in terms of emission levels was already 'in the red'¹². Some six years later little has been achieved in terms of rectifying this situation and the cost to the Irish Taxpayer will now run to more than €290m (up to 2013) in what are effectively penalties for our failure to meet our targets¹³.

Equitable Burden Sharing (Polluter Pays)

Chambers Ireland advocates the polluter pays principle, based on an understanding that costs are reasonable. The polluter pays principle is central to best practice environmental policy and should be central to any discussion regarding energy policy in Ireland.

Consumers have a vital role to play in changing consumption patterns and consequently patterns of production. This demand management will help bring about the changes needed in both energy consumption and emission levels.

The Policy Context

The Department of Communications Marine and Natural Resources (DCMNR) published a Green Paper on Renewable Energy in early October 2005. The Department also released its Green Paper on Energy in November 2006. This document represents

¹⁰ Forfás (2006) *Baseline Assessment of Irelands Oil Dependence*. p3

¹¹ As indicated by Northern Foods submission to the Commission for Energy Regulation indicating that the proposed rises in energy prices had the potential to make the company unviable.

¹² Department of Environment and Local Government: *National Climate Change Strategy – The Plain Guide*. (2000) p3

¹³ Department of Finance: (December 2006) *Budget 2007: Environmental Measures*

Chambers Ireland's response to government policy and our position on the future of energy policy in Ireland.

2. Ireland's Electricity Sector

“Given the rapid GDP and electricity demand growth and the existence of tight capacity margins, the market structure needs to be conducive to the delivery of immediate new entry and security of supply. Given Government commitment to the EU internal market, the market structure needs to encourage meaningful competition; deliver fair prices to end users; ensure a fully independent and transparent network sector and address the potential exercise of dominance through the ownership of price setting plant”¹⁴.

Ireland's energy market has a number of critical and defining characteristics. The market is relatively small in global terms, representing approximately 1% of EU consumption of energy¹⁵. The market is heavily dependent on fossil fuels as a generation source, approximately 95% of our energy needs is met from such sources¹⁶. Due to our relative lack of exploited natural resources, the Irish market has a heavy dependency on fuel imports for generation purposes, running at approximately 90%¹⁷. Of this over two thirds are comprised of oil and gas, commodities with highly volatile prices.

There are relatively low levels of competition in the market place. Both the electricity and gas markets are traditional monopolies. While recent years has seen the introduction of competition to some degree, the size of the market place, lack of certainty regarding the Governments long term strategy on de – regulation and prices in the industry, has led to a shortage of new market entrants.

Price rises of between 19.6% and 21% for electricity for 2007 will put a further strain on businesses users. Lack of competition in the market place, ensures that smaller businesses have little option but to accept these price rises. The price of electricity in Ireland is now ‘notably higher than those in other European Countries’¹⁸. As indicated in the table below, Irish industry faces the third highest Electricity prices in the EU¹⁹ and its competitiveness is clearly under threat.

¹⁴ Deloitte (2006) *Review of the Irish Electricity Sector*. p17

¹⁵ Eurostat: *Energy in the EU, First Estimates 2005*. Press Briefing (21/9/06)

¹⁶ Howley, O’Leary and Gallachóir: *Energy in Ireland 1990 – 2004. Trends, issues forecasts and indicators*. p10

¹⁷ Eurostat: *Energy in the EU, First Estimates 2005*. Press Briefing (21/9/06)

¹⁸ Deloitte (2006) *Review of the Irish Electricity Sector*. p9

¹⁹ Eurostat (2006) *Electricity Prices in the EU25 in January 2006*.

Country	Jan 2006 (euro)	Jan 2006 / Jan 2005 - % Increase
Italy	12.08	+10.5
Cyprus	11.36	+38.4
Ireland	10.11	+8.7
Germany	9.94	+10.1
Belgium	9.69	+25
Netherlands	9.57	+6.5
Luxembourg	8.95	+5.2
EU 25	8.65	+16.1
Austria	8.63	+4.4
UK	8.22	+36.2
Portugal	8.17	+14.6
Denmark	8.01	+25
Slovakia	7.73	+7
Hungary	7.61	+9.2
Spain	7.57	+5
Czech Republic	7.31	+15.4
Malta	7.11	+0.0
Greece	6.68	+3.6
Slovenia	6.51	+6.4
Poland	6.33	+6.8
Sweden	5.93	+30.5
France	5.78	+0.0
Finland	5.63	-1.7
Estonia	5.11	+8.3
Lithuania	4.98	-0.1
Latvia	4.09	+0.0

Table 2.1 Electricity prices per 100 kWh, excl. VAT, for standard industrial consumer 2 000 MWh/year

Energy Provision

For many years the ESB received little support in terms of capital investment, yet it doubled supply while delivering productivity gains. It should also point out that the company has made efforts to divest itself of its dominant position in the market place.

However the recent Deloitte report on the Irish Energy sector suggests that ESB is failing to generate at an optimal level and that the ESB is generating power at a cost to consumers approximately €300m in excess of European standards.

This is as a result of a combination of factors, the largest of which (€200m) relates to the fuel mix being employed in generation. This is in part due to the use of less viable (economically) resources such as peat and highly price sensitive fuels such as Gas and Oil. ESB argues that they are constrained in terms of available fuel mix in relation to EU markets where nuclear and hydro electricity play a larger role.

The need for energy has pressed less efficient generating plant into service leading to a higher marginal cost of generation. Remedying this will require a shift in policy and a substantial investment in new plant and interconnection²⁰.

In addition to these structural issues, the Deloitte report also indicates that higher cost of labour and issues relating to production capacity represents up to 30% of the price differential between Irish and EU average prices. Labour costs are estimated to be up to 30% higher than the EU average for the sector. The upshot of this, it is argued, is an avoidable, non fuel related, cost excess of €100m²¹.

It should be noted that prices are set by the regulator as a matter of encouraging competition and price differentials in the domestic market reflect higher prices applied to low use customers, (in this case low use being equivalent to the levels used in a second home). However we believe that the issues raised in terms of wage levels and efficiencies need to be addressed within a competitive environment.

Launching the Green Paper on Energy, the Minister for Communications Marine and Natural Resources indicated that he did not support the break up of the ESB generating portfolio. This is despite the fact that both the Deloitte Report and a Department of Enterprise, Trade and Employment recommend this as a means of promoting real competition²².

These cost issues will only be addressed in a truly competitive market. We welcome the announcement by the Commission for Energy Regulation (CER) that it has reached agreement with the ESB to reduce its market share substantially by 2010²³. However we would caution that the divesting of capacity plant and generation sites, will not, on its

²⁰ The December 2006 Forfás study on benchmarking in addition to the ESRI report of the same month indicate clearly that Ireland has little spare capacity between maximum supply and peak demand. This requires that at times of peak demand that less cost efficient generating plant is used.

²¹ Deloitte (2006) *Review of the Irish Electricity Sector*. p10

²² Department of Enterprise Trade and Employment (2005) *Irish Electricity Market Challenges*. p20

²³ Commission for Energy Regulation: *Agreement to Reduce ESB's Market Share in the Power Generation Sector*. November 29 2006

own, be enough to ensure that ESB's market dominance is addressed, pricing is an issue which must also be considered.

There is a fine balance to be achieved between the need for new generating infrastructure and the need to ensure that ESB does not continue to dominate in the generating market. We believe that all possible efforts should be made to ensure that new generating capacity is accessed through the private sector.

ESB should also be encouraged to compete for contracts overseas free from interference or prejudice. With considerable expertise built up and an international reputation in both generation and transmission, ESB has a viable basis from which to compete in a European and global context. ESB needs to be free to make decisions rapidly on a commercial basis, with the support of a strong shareholder. In the long run this is a situation which may not be possible under state ownership.

Investment in Generating Infrastructure

Both the Transmission Service Operator (TSO) report and the CER have stressed the need to plan for the development of new generating capacity. We must examine the requirement to replace aging and underproductive plant²⁴. The lack of generating capacity is ensuring that some of the less efficient generating stations are being operated to meet the growing demand²⁵. We must ensure that meaningful investment takes place in generating capacity. This will not take place in the absence of a genuinely competitive environment. As the Deloitte report notes;

“The lack of independent entry of new generation capacity and the poor availability of ESB generation has led to the ESB themselves being allowed to build new facilities to address capacity deficit issues”²⁶.

Thus in this instance the monopolistic situation becomes self sustaining as Government is in need of capacity and the dominant position of the ESB means that few are willing to make the investment to provide that capacity. This in turn further strengthens ESB's dominance in the market. While we acknowledge that ESB acted correctly in making this investment, the Government needs to intervene in the market to reduce the company's dominant position.

Future generating capacity must be planned with the long term aim of reducing or eliminating dependence on fossil fuels and increasing energy efficiency in the generation process. Despite significant improvements in technology, electricity production still entails a high wastage of energy. Generation efficiency must be a priority as a means of reducing energy consumption. Strategic planning needs to include how older less efficient generating plant will be replaced with more efficient plant.

The ESRI report on electricity shortages indicates that while Ireland has technically enough generating capacity for the short term, our current infrastructure is older than European norms and is as such in greater need of repair. In November of this year, three

²⁴ Commission for Energy Regulation: (2006) *Report on Ireland's Security of Supply of Electricity*.

²⁵ Deloitte (2006) *Review of the Irish Electricity Sector* p10

²⁶ Deloitte (2006) *Review of the Irish Electricity Sector* p13

substantial plants were taken off line for repairs representing a loss of 18% of the total available supply²⁷. While much of this work was planned, it is a matter of concern that Ireland has at present only a 6% buffer between its total level of spare electricity generation over and above peak demand²⁸.

Interconnection

The opening of the all Island market for electricity is an important step to creating greater competition efficiency, it will not solve all of the security issues surrounding supply of energy. The development of interconnectors between Ireland and the UK will also provide further competition, however as the United Kingdom is now a net importer of fuels such as oil and gas, our security of supply, while enhanced, is not guaranteed by these developments.

Given the length of time involved in planning and constructing this type of infrastructure, it is important that we move with urgency to determine how best to improve our interconnection with the UK and Europe. In the medium term, the completion of a single European energy market is crucial for the development of competition and security in Ireland. This is the position of business interests throughout Europe²⁹. Such a project is likely to occur only through interconnection between Ireland and the UK and thence UK to France. It is also important to note that the development of interconnectors will be a vital component in any serious move to introduce widespread use of renewables such as wind energy in Ireland.

Lessons must be learned in relation to the strength of any pan-European network. A power blackout on November 4th 2006 in Germany, which affected consumers in eight countries and 10 million users, shows that any pan-European grid must be based on strong generating and transmission infrastructure³⁰.

Fuel Reserves

The Green Paper indicates that the Government wishes to consolidate a greater level of our oil reserves within the state. The National Oil Reserve Agency (NORA) has been given a brief to maximise the oil supply stored on shore in Ireland³¹. Chambers Ireland welcomes this development and believe where possible more initiatives must be taken to augment fuel storage within Ireland. This policy should cover both gas and oil. The development of the Marathon Gas storage facility is a positive step, but further investment in this sector is required.

The Commission for Energy Regulation (CER) report on security of Ireland's energy supply specifically targets natural gas supplies as an area of concern in terms of security of supply. With natural gas accounting for 44% of the fuel mix in Ireland's electricity system, we are heavily reliant on this source³². The development of new gas resources

²⁷ Malaguzzi and Tol (2006): Electricity Shortages in Ireland: Probability and Consequences. *ESRI Quarterly Winter 2006*

²⁸ Forfas (2006) *Electricity Benchmarking and Analysis*.

²⁹ Eurochambres (2006) *A Strategy for Sustainable Competitive and Secure Energy* p3

³⁰ *Le Monde*: La panne révèle les failles de l'Europe de l'électricité 7/11/2006

³¹ Department of Communications Marine and Natural Resources (2006) *Towards a Sustainable Energy Future for Ireland*. p64.

³² Commission for Energy Regulation (2006); *Report on the Security of Irelands Energy Supply*. p5

off the Irish coast is critical and the current impasse in relation to the Corrib Field will substantially harm the future potential for that development.

It is imperative that gas from the Corrib Field is brought ashore and plays its part in meeting our energy needs. The Bellanaboy site has been through a rigorous planning process and it should now be allowed to proceed without further interruption.

In terms of future exploration, the Government must endeavor to sustain an environment in which both exploration and production are attractive to companies. At present levels of successful drilling this requires a fiscal regime which will not place an undue burden on companies who are investing substantial funds in what is a highly speculative business.

We believe that all possible endeavors should be made to promote the success of the next phase of exploration at Porcupine Basin and subsequent exploration programmes. We support the governments target of extending the area of our national waters for the purposes of exploration.

Chambers Ireland welcomes the announcement that Shannon Development are entering into an agreement to facilitate the development of a Liquid Natural Gas Terminal in Co. Kerry. This development will substantially enhance the security of supply of natural gas. The timescale for the project to become operational is 2011 at the earliest³³.

Energy Sector Recommendations

1. Implement all possible measures to increase competition in the energy sector, including further reductions in ESB market share;
2. Future competitions for developing new generation capacity on an incentivised basis should aim to promote greater diversity of supply;
3. Development of additional connectivity between Ireland and the UK: and Ireland and the EU electricity market;
4. Future Investment in infrastructure to take account of the development needs of renewable energy suppliers;
5. Further development of the oil resources held by the National Oil Reserve Agency (NORA) and support for the development of storage infrastructure on the Island of Ireland.
6. Promote security of supply of natural gas by maintaining a fiscal regime which encourages exploration and production of reserves off the Irish coast.
7. Ensure that companies, such as Shell, that abide by the planning process, are then given the protection of the law in carrying out their operations.
8. Explore the potential for attracting further investment in Liquid Natural Gas storage facilities.

³³ Shannon Development Press Release Archive
<http://www.shannondev.ie/NewsReleases/NewsReleases2006/Title,3708,en.html>

3. Promoting Renewable and Alternative Energy

Renewable sources of energy are energy sources, which are replenishable at or about their rate of consumption. The more obvious sources include wind, hydro, wave and solar. Also included are other sources where the replenishment, although not occurring naturally, can be actively provided for (e.g. short rotation crops including forestry) or can be reliably predicted to occur in any event (e.g. wastes)³⁴.

The promotion of alternative and preferably renewable energy sources must be a central component of any future energy plan for Ireland. While the Green Paper makes commitments in terms of figures, 15% of TER by 2010 and 30% by 2020, there is a need for specific details as to how this will be achieved. This lack of certainty will not help in planning a transmission and distribution network capable of harnessing the potential of renewable energy.

At present it is not commercially viable to produce large amounts of energy from sources other than carbon based fuels. However this does not take into account the external costs of actually producing the energy in terms of emissions and depletion of scarce resources. Even at the most crude level, we are reaching a stage where the Government will be forced to face penalties (in the form of purchasing carbon credits) for breaching Kyoto targets if we do not change our emission policy. Therefore providing a subsidy for the development of non fossil fuel based energy programmes is justifiable in the short to medium term.

Given our geographic position there are certain obvious candidates for expansion, including wind and wave power. The strong agricultural base of our economy means that biomass and biofuel technologies offer opportunities.

Overall Strategy

Renewables will play a significant role in the future direction of Ireland's energy policy. Ireland must focus on those choices that will provide the best return for our economy and our society.

Any strategy should be cognizant of the following;

- The cost implications of investment;
- The time involved in obtaining a return on the investment;
- The small size of Ireland's energy market.

The following issues should be at the heart of funding decisions in relation to supporting renewable energy projects.

- Special consideration of projects which can provide continuity of supply or smooth variances;
- Developing technologies should be supported to compete in the long term with established technologies;

³⁴ Department of Communications Marine and Natural Resources definition

- Efficiency of output must be a critical factor;
- Recognition of the key energy use sectors, notably transport and electricity generation;
- Special consideration for projects which promote interconnection with UK and EU;
- Encourage industries to become involved in generation;
- Encourage competition in the energy market and enhance the competitiveness of Irish Industry;
- The long term cost of fossil fuels;
- A long term approach to provide some guarantee of return on investment;

Wind

Wind energy is the fastest growing of the alternative energy sources currently being developed in Ireland and the EU. Wind energy technology is still in its infancy in terms of large scale industrial use. Countries such as Denmark and Germany have lead the way in Europe in terms of deploying wind energy and while results have been positive in certain respects, unresolved issues remain.

By its nature, wind is not as reliable as fossil fuel based generation. When the wind isn't blowing, the turbines will not work. At present it would be impossible to replace fossil fuels completely as there must be back up supply. This has led to problems for some of the early wind farm projects and there has been a rethink among some of the European Governments in relation to the level of subsidy which should be paid to operators.

Systems which allow smoothing of supply through storage of energy which is generated at times of high wind may help to provide some stability in regard to ongoing supply. This technology is now being introduced to Irish wind farms and it will be worthwhile examining the progress is made on the issue of variability of supply³⁵. Government support in developing and rolling out this smoothing capability would be welcomed.

We welcome the announcement by Airtricity that it is seeking support for a pan-European wind energy grid³⁶. This initiative has the potential to greatly increase the efficacy of wind energy over a large geographical area. It also links in with stated EU policy on alternative energy. Connectivity is vital in the promotion of wind energy. Much of the success of countries such as Denmark in promoting wind energy has been based on their ability to obtain back up power through connectivity³⁷.

There are very few power sources which will allow us to increase renewable energy delivery as easily as wind. Such infrastructure is in the national interest. This should be reflected in the planning process and while proper environmental standards must be maintained, it is critical that wind energy be allowed to develop to its full potential.

We would support the development of corporate social responsibility (CSR) policies in relation to the location of wind farms and other types of contentious infrastructure. This

³⁵ *Irish Independent*: New Battery Back Up Wind Farm. 2/9/2006

³⁶ <http://renewableenergyaccess.com/rea/news/story?id=44858>

³⁷ ESB response to Department of Communication, Marine and Natural Resources Consultation Document entitled "*Options for Future Renewable Energy Policy, Targets and Programmes*"

has been undertaken as standard practice by the National Wind Power Group in the UK. These funds benefit the community and typically include student sponsorships, equipment for schools and village halls repairs³⁸. This approach is also being proposed by the community-based Barna Wind Group in County Cork, where substantial funding has been promised to residents of local villages for the lifetime of the plant³⁹.

In relation to offshore wind energy, we accept the contention of the Irish Wind Energy Association, that Ireland has much to gain from the development, in the long term, of offshore projects. Offshore turbines enjoy a higher wind speed and lower levels of turbulence, although capital costs at present are considerably higher. These costs currently mitigate against the widespread roll-out of offshore energy in Ireland. Chambers Ireland supports the development of research and development projects which will establish a future for offshore wind energy in Ireland.

Wind Energy Recommendations

1. Future investment in transmission equipment to take cognisance of the need to expand the level of generation through wind energy;
2. Support for projects seeking to establish increased connectivity between Ireland and the UK and Ireland and the EU;
3. Government support for research into the key area of storage of energy.

Ocean Energy

Wave and tidal energy are still at a relatively early stage of development. To date the Government has indicated only low levels of support for the development of projects in this field. As Ireland is in a relatively strong position to harness this energy source, this is somewhat disappointing. The Government's low targets for total energy regeneration from wave energy over the next fifteen years also disappoint. While still in its infancy, ocean energy has certain advantages over wind energy that make it an attractive investment for the future.

It is hoped that commercially viable equipment will be available within the next decade and it is suggested in a report for the DCMNR that Ocean energy is then likely to develop as a key component in the Irish renewable energy market⁴⁰.

We would strongly encourage an investment of resources into a research and development facility as proposed by UCC into the area of development of wave energy technology. Funding to develop technology in this area will, we believe, yield long term benefits in terms of affordable deployment of ocean based energy.

Ocean Energy Recommendations

1. Ocean energy is likely to have an important role in our future energy needs. The Government needs to set more ambitious targets in this regard, particularly for the period up to 2020.

³⁸ DTI, DEFRA, Department of Transport: Energy White Paper (2003): *Our Energy Future, A Low Carbon Economy*

³⁹ Barna Wind Energy Limited (2004): *Response to the Department of Communications Marine and Natural Resources Green Paper 'Options for Future Renewable Energy Policy, Targets and Programmes'*

⁴⁰ Sustainable Energy Ireland, The Marine Institute: *Ocean Energy in Ireland* p9.

2. R & D facilities for ocean energy research to be incorporated as part of a centre for Renewable Energy Research

Biomass

Biomass covers a broad range of potential raw materials for the generation of energy, such as municipal waste, agricultural waste (including vegetal and animal substances), wood and forestry residues.

Ireland has the lowest use of biomass in Europe⁴¹. There has been concern regarding the development of a number of biomass facilities, partly due to the concentration on projects using landfill gases. The Government has largely failed in attempts to demonstrate that biomass is a safe and clean technology which has a role to play in meeting Ireland's energy needs.

The failure to promote other biomass methods is somewhat short sighted. There is a need to examine the options for expanding the use of biomass, particularly short cycle crops and wood for use in co-firing with other energy sources. A policy of using 10% of current agricultural land for production of short rotation coppice would negate the need for coal use, as it would provide 14% of Ireland's total fuel needs.⁴² The difficulty with this is that there will be competition for land use in terms of feed production, biomass crop development, biofuel crop development and, in some cases, property development.

If biomass is to be implemented on a more widespread basis, careful planning will be required. Generating facilities should be located close to the source of the biomass materials in order to reduce transport costs and improve efficiency. Therefore plants are more likely to be situated in rural areas, this will bring its own challenges.

Biomass Recommendations

- 1 Encourage the development of biomass, particularly through the use of waste produce and where viable short term crops.
- 2 Encourage the development of co – firing of existing fossil fuel plants to reduce emissions.
- 3 Increase public awareness of the benefits of biomass from both an environmental and energy efficiency standpoint.
- 4 Ensure that biomass plants are located in areas close to the source of materials.

Biofuels

The Government has an EU agreed target of replacing approximately 5.75% of the total fuel requirement (petrol and diesel) by 2010 with biofuels. Biofuels are fuels which are derived from biomass crops or by products suitable for use as fuel. The two most common types of biofuels currently available are bio-ethanol and vegetable oil based biofuel.

It appeared that the Government would struggle to meet EU targets prior to the 2010 deadline, but the decision by NTR subsidiary Bioverda to commence operation of a

⁴¹ Sustainable Energy Ireland: (2002) *Briefing Note on Biomass*. p10

⁴² *ibid* p9

biofuel plant in Cork changes this situation substantially. The plant has the capacity to meet approximately 66% of Ireland's total requirements under EU policy.

The challenge now rests with the Government. At current levels of excise, the company may find it more profitable to export their entire output to foreign markets as opposed to trading within Ireland. This investment proves that Ireland has the capacity to be a lead player in terms of biofuel production. It will also give a focus for those in the farming community who were actively seeking to become involved in producing for the bio-fuel industry.

The IFA, Teagasc and SEI have all pointed to the high cost of establishing farm practices which are geared towards producing for biofuels. Funding for the development in this area should be undertaken in the context of the overall future of farming in Ireland. Such a subsidy should ideally be only short term. This might prove impossible due to the lower production cost of crops in other nations. However there may be scope for considering the development of such land use options as part of a broader policy to protect rural communities through farm diversification.

Chambers Ireland welcomes the measures outlined in the 2007 budget as a positive step in promoting the development of a biofuel industry in Ireland.

Biofuels Recommendations

1. Reduce duty on biofuels in line with other EU countries to promote domestic production.
2. Extend BES to facilitate the ongoing growth of companies working in this field.

Peat

Peat remains a viable option in addressing Irish energy needs, because while it does little to solve emission levels, being one of the heaviest polluters, it does offer a higher degree of security. While not renewable or even strictly speaking alternative, Ireland does enjoy resources in this area and it would be foolish not to utilise them in as effective a manner as possible⁴³.

However, it must be taken into consideration that Peat is not a clean option, even when it is co – fired with biomass. Within the first year of production at the new ESB plants, emission levels in Ireland became re – coupled with energy use. 2005 saw a 73% increase in the use of peat for generation⁴⁴. While this is something we can accept in the short term, as part of a strategy to enhance security of fuel supply, peat cannot be seen as a long term option.

Peat Recommendations

1. Peat offers some degree of security of supply and so should be maintained as a limited source of generation while renewable sources are being developed.
2. Where possible Peat should be co – fired with biomass to reduce emissions.

⁴³ It is estimated that Bord na Mona has approximately 20 years of peat reserves at present levels of use.

⁴⁴ Howley, O'Leary, & O'Gallachoir (2006). *Energy in Ireland 1990 – 2005*. p2

Nuclear

Ireland's relative dependence on fossil fuels is a direct consequence of our statutory ban on nuclear generation. Given the current market size, Chambers Ireland, recognise that nuclear power generation in Ireland is not a viable option. However the development of new technology such as pebble reactors may make safer and smaller reactors viable in an Irish context. In the context of Ireland's future interconnection with the pan EU energy market, it follows that, this state will ultimately be using energy generated by Nuclear power. If the competitive case for nuclear power generation capacity to be commissioned in Ireland becomes valid in the future, then we should be open to embracing it.

4. Supporting Research Development & Demonstration

For Ireland, an accelerated national R & D programme for energy would not only address the strategic concerns posed by oil peaking but would also develop new possibilities for enterprise growth⁴⁵.

Ireland has thus far been in a position of some disadvantage in meeting its energy needs. As a net importer of fossil fuels we have been a price taker in the energy market. Due to a lack of development of the sector, we have also been to a large degree a technology taker as well. Given our natural resources in terms of wind, wave and the potential access to biofuels and biomass, Ireland should aim to develop itself as a centre of excellence for the development of renewable energy technology.

Ireland can take a lead position, in what will be a massive market internationally, by actively supporting a research development and demonstration (R D & D) infrastructure to make real technology advances and product development in Ireland a reality. Chambers Ireland would like to see research undertaken as to the potential value of the domestic compliance market. Reports initiated by the Carbon Trust in the UK place the value of the UK compliance market at £3.5 bn per annum by 2010⁴⁶.

The Green Paper indicates that there is a substantial investment programme available in terms of Research and Development. The monies being allocated do not go far enough in terms of establishing Ireland as a centre for energy research.

We would propose an open call from the third level colleges to work with the Department and International partners to develop such a centre of excellence attached to an existing Irish third level institution.

Whether in the context of a new research centre, or in terms of individual funding commitments, we believe that the Government needs to examine the duration of funding offered to research programmes. Short term funding will do little to encourage meaningful investment in research and development.

Research Development & Demonstration Recommendations

1. Research to be carried out as to the potential size of the business market for renewable related products in Ireland and EU;
2. Establish a centre a focal point for energy research in Ireland;
3. Seek to build links between Irish companies and this centre of excellence to harness the practical experiences of Irish business;
4. Ensure that where possible, funding for R & D purposes is granted over a long term basis.

⁴⁵ Forfas (2006) *A Baseline Assessment of Irelands Oil Dependence – Key Policy Considerations*: p26

⁴⁶ Vivideconomics (2006) – *Opportunities for Innovation – The Business Opportunities for SME's in Tackling the Causes of Climate Change*. p27

5. Market Incentives and Fiscal Policy

...any proposal to use taxation as a policy tool for environmental or any other public policy objectives must be considered in the context of wider taxation policy and with regard to implications for competitiveness, inflation etc⁴⁷.

Chambers Ireland remains to be convinced of the arguments for a carbon tax, however we believe that there is merit in debate the issues which arise from such a proposal. There may be a time when carbon taxes could form part of the package of measures which would promote greater use of other energy sources. The Environmental Protection Agency (EPA) has estimated that such taxation would have the ability to reduce substantially our emission levels and change our consumption patterns⁴⁸.

A Shadow Carbon Tax

Any attempt to introduce a carbon tax should allow for the fact that business decisions on purchase of capital equipment is frequently based on an extended time period. Recent purchasing decisions, prior to the availability of information relating to a carbon tax or levy could place the viability of Irish industries in jeopardy. Therefore such a charge could only follow a period of transition. A decision to implement such a charge without substantial warning would have potentially harmful consequences for the Irish economy.

The Environmental Resource Management (ERM) report also indicates that this phased in period will not only protect businesses, but will also achieve better results from the levy as it will allow a period of time for awareness to be generated as to the impact of the taxation⁴⁹. This might be likened to the tactics successfully used for the introduction of the Euro⁵⁰.

Any carbon tax must be revenue neutral and should not harm the competitiveness of Irish Industry and should not be imposed unilaterally. It is critical that were we to impose such a tax, then it would only occur as part of an EU wide policy on the matter. We must be mindful of the fact that while the EU states may move towards policies based on a Carbon Taxation⁵¹; this is unlikely to happen in some of our other key trading partners, most notably the US and developing Asian markets.

⁴⁷ Department of Finance. Taxation Strategy Group (2003) *Environmental Taxes, Minutes of TSG meeting 03/09*

⁴⁸ Bergin, Fitzgerald & Kearney (2001): *The Macro Economic Effects of Using Fiscal Instruments to Reduce Greenhouse Gas Emissions* p30. Environmental Protection Agency

⁴⁹ Environmental Resource Management: (1998) *Limitation and Reduction of CO₂ and Other Greenhouse Gas Emissions in Ireland*. Department of Public Enterprise

⁵⁰ At present, we remain unconvinced as to whether a tax strategy which is revenue neutral can be implemented. We see the need to test such a strategy, possibly through the employment of a virtual taxation model. The comparison can be made with the Euro, which was initially introduced as a virtual currency. This initial period would show companies how much could be saved by writing off emission reductions against other taxes, e.g. PAYE / Corporation Tax etc.

⁵¹ European Commission (1994) *Growth, Competitiveness, Employment. The Challenges and Ways Forward into the 21st Century*. White Paper.

Chambers Ireland recommends the introduction of a shadow taxation to identify the impact of a Carbon Tax on Irish business and to identify potential problems with such a system. Such as shadow tax could also facilitate all stakeholders in this debate in making informed decisions regarding the impact of such a potentially radical change in our fiscal regime.

Emissions Trading

The EU Commission views emissions trading as playing a role in the development of policy in relation to both emissions control and future energy supply. Ireland will be able to play an active role in this policy, through use of technology and increasing awareness of the potential economic benefits associated with this development. However we are concerned that the Government is over reliant on the Carbon Trading Scheme as a means of meeting its Kyoto obligations. As highlighted by the Consultative Group on Greenhouse Gas Emission Trading⁵² and indeed the EU⁵³.

Voluntary Agreements

Voluntary agreements have been used successfully in a number of EU countries as a means of reducing emissions and increasing energy efficiency - most notably Denmark and the United Kingdom. The agreements are based on a commitment by the company to reduce emissions in return for some benefit, possibly a tax reduction or even derogation from further regulation⁵⁴.

The success of the Large Industry Energy Network (LIEN) indicates that there is considerable scope for developing such programmes in an Irish context. Ideally these agreements would be used as a means for improving standards prior to any introduction of market based or regulatory instruments. As the ERM report indicates, voluntary agreements have a number of benefits including ensuring that the industries buy into the policy process in a more meaningful manner⁵⁵.

Fiscal Policy and Market Recommendations

1. Introduce a 'shadow' carbon tax to enable all stakeholders to understand the implications of such a charge;
2. Emissions' trading has a positive role to play in supporting energy efficiency and emissions reduction;
3. The Government should move to encourage voluntary agreements among the private sector as a means of lower emissions and improving energy efficiency.

⁵² Department of Environment and Local Government: *Report of The Consultation Group on Greenhouse Gas Emissions Trading* (2000) p43

⁵³ EU Commission: *COMMISSION DECISION of 29 November 2006 concerning the national allocation plan for the allocation of greenhouse gas emission allowances notified by Ireland in accordance with Directive 2003/87/EC of the European Parliament and of the Council.* (26/11/06)

⁵⁴ Environmental Resource Management: (1998) *Limitation and Reduction of CO2 and Other Greenhouse Gas Emissions in Ireland* p82

⁵⁵ *ibid* p83

6. Promoting Energy Efficiency

The industrial sector has made significant effort to improve energy efficiency over the past decade. Data from S.E.I indicates that energy efficiency of the industry has improved by 50%, and services by 21%, substantially greater than that achieved by households (20%) and transport sectors (-9%)⁵⁶

Business Users

The role of business in improving energy efficiency is significant⁵⁷. The decline in manufacturing in Ireland, coupled with better energy management, has seen the industrial sector fall in percentage terms in relation to energy consumption. Further significant savings can be made through a number of initiatives targeted specifically at the business community.

Energy Audits

Sustainable Energy Ireland and the Large Industry Energy Network (LIEN) have had considerable success in working with larger industries to bring down their energy consumption. The programme is based on encouraging companies to take a strategic management approach to their energy consumption, with a view to reducing costs. To date the LIEN project has been highly successful in delivering real savings to both business and to the environment⁵⁸.

The LIEN group has targeted large companies; however no substantial programme has been put in place to address the energy use of SMEs. In this regard, we welcome the announcement by the Minister for Finance in the 2007 Budget, of a pilot scheme aimed at supporting SME's to examine and reduce their energy consumption. We hope that the €3m allocated to this scheme on a pilot basis will represent only a small fraction of what would be an extremely worthwhile long term investment, that could reduce the potential for supply 'brown outs' given our increasing energy demand.

Best Available Technology

Much of the benefit in terms of improving efficiency relates to the use of best available technology. A recent Forfás report was critical of the state's record in supporting companies to meet emissions and energy efficiency objectives⁵⁹. Chambers Ireland would like to see support for businesses to implement best available technology. This policy would compliment our polluter pays strategy, while not harming companies who have to change to more expensive technology. This funding should be delivered through Enterprise Ireland and future capital grants should be linked to energy efficiency.

⁵⁶ Department of Enterprise Trade and Employment (2005) *Irish Electricity Market Principal Challenges*. p 11

⁵⁷ Studies by the DTI in the United Kingdom have indicated that Ireland has been the most successful of the original EU 15 countries in reducing our industrial use of energy. This has not purely been a factor of reduction in output, but also a willingness on the part of business to tackle the issue.

<http://www.dti.gov.uk/files/file20329.pdf>

⁵⁸ Sustainable Energy Ireland; (2005) *LIEN Annual Report 2004* p12 - 17

⁵⁹ Forfás (2006) *Baseline Assessment of Irelands Oil Dependence*. p25

Combined Heat & Power

Combined Heat and Power (CHP) is a method of simultaneously generating both heat and electricity using the same resources. The purpose of utilising CHP processes is to eliminate some of the inefficiencies involved in conventional generation of electricity.

By recovering the majority of what would otherwise be waste heat, overall energy savings of between 20 per cent and 40 per cent may be achieved. For an energy intensive business this can represent a very substantial saving. Combined with other energy efficiency measures CHP can deliver even greater cost savings for customers... On balance co – generation can result in savings of up to 50% of CO₂ emissions compared with conventional sources of heat and power⁶⁰.

Ireland has one of the lowest rates of energy generation through CHP in the EU⁶¹. Given the nature of our economy and our settlement patterns it is unlikely that Ireland will ever be able to generate significant amounts of energy through CHP. We would, however, like to see further capital support given to the development of CHP projects and in particular CHP projects which utilise renewable resources such as biomass.

In 2001 the Irish Energy Centre indicated that there was a number of barriers to a further roll out of CHP in Ireland. Little progress has been made in overcoming these barriers and this must be addressed in any further Government energy policy⁶².

Studies into the potential of district heating would also be worthwhile as a means of exploring the feasibility of developing CHP plants. CHP is used throughout Europe to provide heat in smaller districts. Ireland has a track record of operating similar schemes at local level for water. The possibility of extending this to include efficient low emission generation of electricity is worth exploring. Sustainable Energy Ireland indicates that there is potential for the development of such District Heating projects on a niche basis in conjunction with the development of CHP projects, particularly in areas where there is restricted access to the gas network⁶³.

Promoting Energy Efficiency (Business) Recommendations

1. A supported network of advisors to work with SME's to develop energy awareness and prepare energy audits;
2. Continued support for CHP projects with additional support for companies using renewables in the CHP process;
3. Development of Pilot District Heating Projects in a number of specific locations;
4. Energy efficiency and best available technology to form part of the requirements for capital assistance from Enterprise Ireland / Enterprise Boards. Maximum funding to be increased to take account of this.

⁶⁰ Irish CHP Association and Sustainable Energy Ireland: *A Guide to Combined Heat and Power in Ireland*. p.3

⁶¹ Department of Communications Marine and Natural Resources; *Green Paper on Sustainable Energy*. Chapters 10.1 – 10.5

⁶² Irish Energy Centre (2001): *An Examination of the Future Potential of CHP in Ireland*. p4

⁶³ WS Atkins Consultants: (2002) *Assessment of the Barriers and Opportunities Facing the Deployment of District Heating in Ireland*. Sustainable Energy Ireland

Domestic Users

In terms of oil used in residential heating, Ireland has steadily increased its dependence on oil; its share has increased from 19% in 1990 to 38% in 2004⁶⁴.

The growth in personal wealth and consumer spending has been a critical factor in the increase in energy demand. While some efforts have been made in terms of reducing individual consumption, far more can be done. The International Energy Agency has estimated that up to 30% of energy consumption could be negated through effective demand side management.

Consumers have a right to choose their own patterns of consumption, but those choices should be reflective of the true cost of their actions. Consumption of electricity and energy inefficient products entails an environmental cost and consumers must be aware of this. Promotion of energy awareness is an important part of this process. Chambers Ireland would like to propose a number of initiatives which we believe should form plan of the strategy to increase energy efficiency.

Energy Efficient Appliances

The energy rating policy which applies to certain white goods should be expanded to a much wider range of consumer goods. However there are limitations with this scheme, energy efficient appliances are frequently more expensive at purchase, with the saving being made over the lifetime of the product. There is benefit to the whole society in encouraging the purchase of such goods and this should be reflected in the purchase cost. This could incorporate a differential duty to penalise inefficient equipment. This would encourage production and purchase of energy efficient technologies.

Energy Efficient Homes

Chambers Ireland supports the energy labelling of new homes. Consumers have a right to be fully aware of the future energy requirements of their home at the time of purchase. The Government needs to advertise in the lead up to the launch of this programme to indicate what the savings would be for consumers by purchasing an 'a' rated home.

Retrofitting of Older Homes

Considerable progress has been made in terms of increasing the energy efficiency of new homes in the last decade. We believe that the Government should follow the example of the UK authorities and ensure that older houses are retro fitted where possible and that home owners would be supported to do this on a means tested basis. We acknowledge the considerable work already done to date by SEI in supporting the installation of energy efficient technology such as wood pellet burners. On this point we would like to see SEI work to facilitate smaller minimum deliveries from wood pellet suppliers – this we feel would greatly encourage greater take up of the technology. This is particularly important in built up areas where space constraints may make it difficult for users to store bulk quantities of this fuel source.

⁶⁴ Curtin, J. (2006); *Towards an Oil Free Economy in Ireland: Lessons from the Swedish Commission for Oil Independence Report*

Other measures which have proved successful in the UK include⁶⁵

- Cavity wall insulation;
- Loft insulation;
- Installation of heating controls.

Consideration should be given to schemes aimed at installing such features in addition to promoting more energy efficient lighting.

Domestic Generation of Electricity

The scope exists for new homes to generate much of their own energy through solar power, pellet burning and small scale CHP devices. One of the present draw backs to undertaking this course of action for developers or individual home builders is the inability for consumers to feed excess energy into the grid. The option of net metering needs to be thoroughly examined as a means of promoting domestic generation through alternative sources.

Information Campaigns

Information campaigns have a proven track record in Ireland and the EU in promoting improved energy efficiency. In the face of rising energy costs information campaigns should be aimed not merely at the environmental message, but making people aware of the savings available from energy.

Chambers Ireland welcomes the new 'Power of One' information campaign and the work which has been done by groups such as Sustainable Energy Ireland. .

Promoting Energy Efficiency (Domestic) Recommendations -

1. Explore mechanisms for increasing the competitiveness of energy efficient appliances.
2. Government funding, on a means tested basis, for the retro fitting of homes over 15 years of age on an energy efficient basis.
3. Introduction of net metering allowing domestic producers the chance to offset the cost of electricity purchased.

Government

Government has a key part to play in promoting a culture of change in terms of energy use. In most successful EU states where change has been effected, Government purchasing decisions have been to the fore in promoting markets for renewables.

The Forum for Public Procurement estimates the total state procurement budget at €20bn per annum⁶⁶. The Government has a unique opportunity to act as a key player in the target of reducing both energy consumption and emissions. All Government departments are involved in making significant capital expenditure decisions. It is important that where possible expenditure is made in a manner which promotes best practice.

⁶⁵ DEFRA(2006) *Assessment of EEC 2002 – 05 Carbon, Energy and Cost Savings* p6-7

⁶⁶ Information supplied by Forum for Public Procurement, October 2006.

Each Government department and state agency should undertake a specific review of where opportunities exist within their organisations to address the issue of emissions control and reduction of energy use.

We are proposing an environmental proofing on all Government capital expenditure to ensure *inter alia* that within reasonable limits of expenditure, the energy rating and emissions standards of purchases should be a consideration. This policy should be established at both central and local Government level, with local Government receiving sufficient funding to implement this policy. Examples where this could work include

- Fitting of wood pellet burners for heating purposes in smaller buildings;
- Development of micro CHP plants in larger buildings;
- Energy audits for all existing state buildings;
- All new buildings to be energy rated and to conform to highest possible standards;
- Purchase of low emission vehicles as part of the public transport and central and local Government logistical fleets.

Promoting Energy Efficiency (Government) Recommendations

1. Government departments, local authorities and state agencies should take a lead in promoting energy efficiency within their own organizations;
2. Government departments, local authorities and state agencies should develop comprehensive plans for developing energy efficiency and target emissions reduction;
3. All major capital procurement and tendering processes to include a requirement that consideration be given to energy efficiency emissions.

7. Transport, Planning and Land Use Policy

During the period 2000 – 2004... Ireland had a higher growth rate than any EU 15 country. Energy usage in transport in Ireland increased by 132% (6.2% per annum on average) over the period compared with 28% (1.8% per annum) in the EU 15”⁶⁷.

The transport needs of our society pose some of the most challenging problems in terms of addressing our energy agenda. The sector now accounts for 33% (5,089 ktoe) of Ireland’s primary energy demand and is responsible for 33% (15,273 kt CO₂) of Ireland’s energy related emissions, higher than any other sector⁶⁸. Addressing the fuel use of the transport sector must be a central part of any energy strategy.

Despite fuel efficiency advances agreed at European level with auto manufacturers, Irish fuel consumption in the period between 1990 and 2005 rose by 151%. The transport sector is the fastest growing sector in Ireland in terms of fuel use⁶⁹.

	Growth		Average Annual Growth Rates				Shares %	
	1990 – ‘05	1990 – ‘05	1990 – 1995	1995 -2000	00 – ‘05	05	1990	2005
Industry	39	2.2	1.8	4.8	0.1	4.5	23.7	19.1
Transport	150.9	6.3	3.4	11.3	4.4	8.0	27.8	40.6
Residential	27.1	1.6	-0.3	2.7	2.4	-0.3	31.1	23.0
Commercial	83.1	4.1	3.3	5.2	3.8	7.7	13.9	14.7
/ Public								
Agriculture	29.0	1.7	6.2	-1.4	0.5	3.6	3.5	2.6
Total	72.2	3.7	2.0	6.2	2.9	5.2	100.0	100.0

Table 6.1 Growth Rates and Share of Total Fuel Consumption. Source Sustainable Energy Ireland SEI

While presenting challenges, there are a number of opportunities in this sector to greatly reduce energy demand and emissions.

Commercial Road Transport

As an island economy, the commercial freight sector plays a critical role in supporting businesses and consumer needs in Ireland. In the period of the SEI study (1990 – 2005) the number of goods vehicles registered in Ireland rose by nearly 105,000. This was accompanied by a shift in the average size of vehicle, with a greater prevalence of larger vehicles.

While there can be some progress in terms of fuel switching for commercial vehicles, there has been more progress with private car fuel switching. The opportunities for fuel reduction in the commercial sector lie in better fleet management and the reduction of the age of the national fleet.

⁶⁷ Sustainable Energy Ireland (2006); *Energy in Transport, Trends and Influencing Factors* p48

⁶⁸ *ibid* p7

⁶⁹ *ibid* p10

Fleet Management

Implementation of fleet management software by hauliers could reduce fuel consumption by up to 15%, by improving the efficiency of both the driver and the machine⁷⁰. This process is becoming more common among larger hauliers; however there is less penetration with smaller companies and independent hauliers. This weakness in the smaller and medium size hauliers is consistent with the findings of Chambers Ireland own survey in 2005, which indicated a poor take up of productivity enhancing e-technology among Irish SMEs⁷¹.

Fleet Age

While it is estimated that vehicles of up to five years are relatively fuel efficient, older vehicles and particularly those over 10 years of age pre date many of the emission and fuel efficiency improvements made by manufacturers. According the SEI transport survey, there are currently 51,400 vehicles in excess of ten years of age in the Irish commercial fleet. The goal of reducing the age of vehicles on the road is supported in the Forfás report of April this year⁷². A government funded scrappage scheme could assist in removing older, less fuel efficient HGVs from our roads.

Commercial Transport Recommendations

- | |
|--|
| <ol style="list-style-type: none">1. Government information campaign to publicise the benefits of fleet management systems and driver efficiency training;2. Commercial fleet scrappage scheme to be implemented for vehicles over 10 years of age. |
|--|

Private Road Transport

Ireland has a lower level of car ownership than the European average, but the rate is growing rapidly, again reflecting the growth in income levels and the economy. Aligned to the growth in car numbers is the trend towards larger engine sizes. The SEI report indicates that Irish consumers are choosing to purchase larger cars. Over the period 1990 to 2005 average engine size increased by approximately 12%⁷³. These larger cars are likely to be less fuel efficient and to emit higher levels of CO₂. The last year has seen an increase of 21% in the sales of SUVs⁷⁴. This is in comparison to a rise of 11% in SUV sales at European level and gives some indication of the shift in motoring patterns.

⁷⁰ Interview with Blue Tree Systems, October 2006

⁷¹ Chambers Ireland (2005) *SME eBusiness Survey 2005*.

⁷² Forfás (2006) *Baseline Assessment of Irelands Oil Dependence* p5

⁷³ Sustainable Energy Ireland (2006); *Energy in Transport, Trends and Influencing Factors* p25

⁷⁴ http://www.finfacts.com/irelandbusinessnews/publish/article_10006931.shtml

Petrol engine size band	Estimated fuel consumption pa (ltr)	Estimated fuel cost pa (euro)
<0.9 ltr	995	1193
0.9 - 1.2 ltr	1096	1315
1.2 - 1.5 ltr	1263	1515
1.5 - 1.7 ltr	1479	1775
1.7 - 1.9 ltr	1491	1789
>1.9 ltr	1750	2100

Table 6.2: Estimates of Petrol Expenditure and Consumption by Engine Size Band⁷⁵

Vehicle Registration Tax

We acknowledge the Minister for Finance's commitment to a national consultation on the future of Vehicle Registration Tax and Motor Tax⁷⁶.

Biofuels

Government can support the roll out of biofuels via the removal of VRT on cars designed to run on biofuels and imposing no duty on these fuel types. The EU has a target of achieving a 5.75% share for biofuels in the petrol and diesel market by 2010⁷⁷.

Hybrid Cars

As with biofuel technology, we believe that hybrid cars can make a positive contribution to the joint aims of reducing energy consumption and reducing emissions. We believe that the new system of VRT should reflect this with a low or zero rate.

Private Transport Recommendations

1. Chambers Ireland welcomes the national consultation process on reform of VRT and Motor Tax;
3. Chambers Ireland calls for an information campaign to support the use of vehicles using bio fuels;
4. We support the Elimination VRT on Biofuel vehicles;
5. We support the Reduction of VRT on Hybrid Technology.

Public Transport - Road

Chambers Ireland research has indicated that the cost of transport congestion in Ireland has now reached €2bn per annum⁷⁸; this does not include the environmental cost of higher emissions and fuel use. Public transport is a critical component of any move to reduce energy use. We do not at present have a public transport system that offers an effective alternative to public transport for a majority.

Transport 21 is to be welcomed as a multi-annual funding mechanism for public transport investments. The recent pattern of delivery of key infrastructure targets on time and ahead of schedule has been a welcome development. However there is a need to ensure

⁷⁵ Sustainable Energy Ireland (2006); *Energy in Transport, Trends and Influencing Factors* p10

⁷⁶ Department of Finance (2006): Budget 2007. Annex D & E

⁷⁷ EU Commission; *Reducing Emissions from the Energy and Transport Sectors*

⁷⁸ Chambers Ireland (2005) *Transport Users Study*. The figure of €2bn is based on the numbers of hours estimated as lost to businesses due to congestion, multiplied by the average industrial wage.

that this delivery is maintained, in particular in relation to public transport initiatives within the plan.

At present Dublin Bus enjoys a diesel subsidy. This subsidy is not only anti-competitive it also fails to promote fuel efficiency. If Dublin Bus is to be in receipt of a subsidy then it should be based on the number of passengers carried and it should be available to all private bus operators. Older vehicles should be replaced by those which run on low emission fuels or Biofuels⁷⁹. Chambers Ireland is concerned regarding claims from suppliers that the Government is stalling on its commitments, to implement a pilot programme of biofueled buses⁸⁰.

Greater competition is needed in the public transport sector both in Dublin and other urban areas. A Chambers Ireland survey undertaken in 2005 indicated that 86% of respondent business favoured greater competition in public transport⁸¹. The development of real alternatives for consumers must play a critical role in bringing about change in consumer habits. Chambers Ireland has consistently called for an increase in the level of competition in the market. While there has been some movement in this regard, we feel that there is much more which can and must be achieved to promote real competition. Put simply allowing competition in only 15% of new routes is not enough to bring about real change.

Public Transport Road Recommendation

1. Increase Competition in Bus market in major cities.

Public Transport - Rail Network

Maintaining investment in Rail, both passenger and freight, is an acknowledgement of the long term needs of our economy. While the recent investment in the railway network will lead to improved service to commuters, it is critical that the incoming government delivers on physical interconnection between different routes and modes of transport and integrated ticketing. Value for money is also an important issue. Íarnrod Éireann's staff costs currently rank among the highest in Europe as a percentage of total operational spending⁸². If the goal is to make rail sustainable, it is important that all areas of costs and investment are addressed.

Rail Freight

In terms of freight haulage, the decline in the use of the rail network has been mirrored by the increase in the spending on our road infrastructure. Rail freight can in the long term offer an alternative that is clean and efficient. Research in Ireland and in other E.U. States shows that freight trains consume about four times less energy per tonne kilometre than road vehicles. Taking the example of transporting waste - each trainload can convey 300/360 tonne of waste per train movement, the equivalent of between 25/30 individual

⁷⁹ Forfás (2006) *A Baseline Assessment of Irelands Oil Dependence* p22

⁸⁰ Bio fuel suppliers have suggested that the Government were dragging their heels on implementing a Bio Fuels pilot scheme outlined in May. The suggestion made was that the reluctance was based on a potential loss of taxation revenue. *Irish Times*. Few of Dublin Bus Fleet Using Biofuel. 14/11/06

⁸¹ Chambers Ireland (2005); *Transport Users Survey*. p4

⁸² ECORYS Nederland BV (2006); Analysis of the financial situation of railway undertakings in the European Union. P27 – 30: European Commission – DG TREN

laden truck loads or 50/60 laden/empty road vehicle movements per journey⁸³. Thus rail transport is less damaging to the road network.

At present in the absence of any mechanism to include the 'external costs' of road freight and the relatively small size of our market, rail has a limited market⁸⁴. The likelihood is that rail will have to be re-examined in terms of the long term potential it offers as road haulage becomes more expensive.

The 'Strategic Rail Review' indicates that if a business case exists for rail freight investment then the Government needs to be more amenable to investing in rail freight infrastructure⁸⁵. This is a position which Chambers Ireland supports.

Should Iarnród Éireann not be amenable to developing the freight rail network, Chambers Ireland believes that a discussion of the merits of offering the service to private operators, even on a subsidised basis, should be debated. It is possible that established logistics providers, either in Ireland or overseas, might be willing to become involved in this.

Cycling & Walking

Ireland lags behind Europe in terms of bicycle use as a means of transport. Studies indicate that this is due to concerns regarding road safety and the security of bicycles when left unattended.

Walking is similarly a healthy and environmentally friendly form of travel. Climatic factors play a part in reducing our willingness to walk to our destinations, but other features such as land use policies and the car focused nature of our towns and cities also play a role. This should be addressed and walking promoted as a sustainable means of travel.

Recommendations Cycling & Walking

1. Bicycle lanes should be provided on all urban roads (where possible) in addition to bicycle friendly public transport in Ireland's major cities;
2. Prioritisation of pedestrian needs in the development of land use and city centre developments.

Air Transport

The development of cheaper air transport has been identified as a major factor in increasing oil consumption and at increases in emission levels. The nature of our island economy and our increasing development of international trade means that air travel is critical to the development of our economy. Ireland's rate of growth of air transport use is well ahead of EU average growth⁸⁶.

⁸³ Iarnróid Éireann and the Environment

http://www.iarnrodeireann.ie/about_us/IE_and_the_environment.asp

⁸⁴ Average rail hauls are 200km and given the lack of a heavy manufacturing or natural resource based sector in Ireland, it is unsurprising that the Strategic Rail Review identified that 95% of haulage in Ireland was road based.

⁸⁵ Booz, Allen, Hamilton (2003) *Strategic Rail Review* p.xiv

⁸⁶ Forfás (2006) *A Baseline Assessment of Irelands Oil Dependence* p16

The research which is available indicates that the real issue in relation to air travel and emission rates is one of the duration of flight and the actual success of filling the planes. Indications from some observers would suggest that the worst offenders in terms of omissions are shorter routes and routes where there is relatively low-usage.

Ireland can play a substantial role in reducing EU wide emissions by developing Irish Airports as transatlantic hubs for both passenger and cargo services. At present Ireland has the ability to further increase traffic through its principal airports, while other European Airports and their air spaces are congested. US airlines are experiencing consistent delays when landing in major EU airports. This period circling airports is expensive in terms of fuel and increases emissions unnecessarily.

Recommendations on Air Transport

1. Any decisions made in relation to air transport should take account of our growing dependence on international markets for trading;
2. Development of Irish airports as hubs for trans-Atlantic passenger and cargo traffic could play a large role in reducing EU wide emissions in the aviation sector.

Implications of Land Use

National Spatial Strategy

The importance of the National Spatial Strategy in reducing our energy dependency is highlighted in the Forfas Baseline Assessment Report. Much of our consumption of energy is a direct result of our land use policy. If we are serious about changing our transport and consumption patterns, then it is critical that political considerations be put to one side and that an effective network of gateway towns and cities is established⁸⁷.

Housing

Chambers Ireland supports measures to promote higher density, energy efficient housing.

Broadband

Chambers Ireland views this debate as another critical example of the importance of the roll out of broadband to our economic development. The ability for people to work from home and for businesses to locate in regional centres can help reduce reliance on private transport⁸⁸.

Broadband is a key policy issue for Chambers Ireland and for the business community and there is continuing frustration that the broadband development in the country continues to fail to keep up with the needs of our economy.

⁸⁷ Forfás (2006). *Baseline Assessment of Irelands Oil Dependence* p13

⁸⁸ *ibid* p27

Planning Recommendations

- 1 The National Spatial Strategy needs to be implemented as a matter of urgency;
- 2 Increase the density of housing within towns and cities around the country;
- 3 Accelerated roll out of broadband to assist people in teleworking and to ensure that e infrastructure is available to support regional development by means of facilitating a next generation network infrastructure as a matter of priority.

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