Green Paper:
Towards A Sustainable Energy Future for Ireland

Response From:
White Young Green



Ireland

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White Young Green Ireland

White Young Green Ireland is a leading engineering, environmental and surveying and project management services consultancy offering a high quality, professional multi-disciplinary service and total project delivery across a wide range of sectors to both public and private sector clients. The company has over 440 staff based in seven offices across Ireland – Belfast, Derry, Dublin, Cork, Kilkenny, Limerick and Waterford - and 2300 staff operating from 37 locations – 31 UK and 6 international.

All White Young Green offices offer a full multi-disciplinary service to a diverse and expanding client base. Key services include mechanical and electrical engineering, civil and structural engineering, environmental services, quantity surveying, building surveying, project management, planning supervisor and town planning services.

White Young Green General Response to Green Paper

White Young Green welcomes the opportunity to comment on this green paper 'Towards a Sustainable Energy Future for Ireland'. As an organization providing the full range of sustainable energy services in the built, natural and social environment White Young Green has first hand knowledge of dealing with the challenges and obstacles faced when addressing the issue of long term sustainable energy solutions.

White Young Green is fully supportive of an energy policy that will set out a strategy for creating a Sustainable Energy Future for Ireland leading to security of energy supply, environmental sustainability and economic competitiveness. However while White Young Green is generally satisfied with the proposals in the Green Paper, it wishes to take this opportunity to address a number of issues.

a. White Young Green agree that increasing energy efficiency is '*the quickest, most effective and most economic means of reducing energy usage and emissions.'* and to this end it should be given priority. The increased efficiency target of 20% by 2020 is a soft target. A 20% increase in efficiency could be easily achieved today if the correct supports were in place. To achieve the 20% improvement in efficiency in industry the barrier is often the cost of initial study, if feasibility studies could be grant aided, as was the case previously, the number of projects undertaken and the efficiency levels would increase. *(REF Green Paper Pg.10)*

b. Small scale RE metering and reward systems are being examined. This is welcome however metering and reward systems for medium scale systems and RE that is not generated primarily for export should also be reviewed. The current practice by which all generation plant is classed in the same manner can be off-putting and act as a barrier to development. *(REF Green Paper Pg.13)*

c. The Liberalisation of the Irish Energy Market is a key feature of a sustainable energy future for Ireland. However, we believe that the role of the incumbent operators needs to be addressed quickly as there is a risk that enhanced competitiveness, innovation and promotion of new market players may be constrained. This is not fully addressed in the Green paper. A proposed option put forward by White Young Green is included in this response which would maintain state ownership of current and future assets, coupled with private sector operation/maintenance/trading efficiencies.

d. One of the biggest barriers to the development of bioenergy and biofuels in Ireland is the lack of a secure and developed supply chain. This covers feedstock availability to distribution network. This means that the element of risk associated with biofuels can inhibit project development. This issue has to be addressed by a cohesive Government team with active participation and buy in from all of the Government Departments with an interest in this area. *(REF Green Paper Pg.15)*

e. CHP needs to be re-evaluated with regard to carbon credits. Some allowance should be made for the environmental savings accruing from CHP. Currently large plants can be penalised if they invest in cogeneration as it pushes them over the 20MW emissions trading threshold. *(REF Green Paper Pg.15)*

f. The licensing process with regard to small scale CHP is acting as a barrier to its development and need to be addressed. A small scale CHP plant, connected to the national electricity grid, currently has to apply through the same licensing system as the large electricity generation plants. CHP should be included in the small scale RE metering and reward system that is being examined. *(REF Green Paper Pg.15)*

g. The Large Industry Energy Network (LIEN) should be adapted/extended to industry in general. Most of the information and experiences are just as relevant to smaller energy users and could be of great benefit. *(REF Green Paper Pg.16)*

h. Micro generation offers a significant potential benefit to renewable energy contribution and the promotion of Micro generation should be encouraged in the Green paper. One option could be to impose the introduction of renewables, such as PV, Micro CHP, small scale wind etc, into all new build domestic dwellings. Whilst the payback will not be rapid, the cost of such a measure will not result in a considerable increase in building costs The development of this sector would only be viable through the introduction of a net metering arrangement, this should also be addressed in the Green paper.

i. Biomass based district heating can result in significant benefits for new developments both in terms of efficient and sustainable energy use. However such systems are, at present, largely ignored as an option. The development of such systems should be encouraged through the provision of support taking into account issues such as waste management and heat demand.

j. It is clear that the Green paper sets out to encourage renewable and sustainable energy technologies, which is to be welcomed. However the method of promotion of these technologies appears to be on an individual basis, each technology isolated from the others. White Young Green feels that for the Green paper to achieve maximum success a more holistic and 'joined up' approach should be taken towards these technologies.

White Young Green Response to Consultation Questions posed in Green Paper

21 ENSURING THE SECURITY OF ENERGY SUPPLY

Question 1
In addition to enhancing the contribution of renewable energy, what actions could be taken to further diversify the fuel mix for electricity generation and reduce dependence on oil and gas?

Answer
Diversification of the fuel mix will be governed primarily by fuel price, suitability and availability. However the will to change and diversify also has to be in place and this needs to be driven from Government level down, through the use of carrot (incentives for cleaner and indigenous fuels e.g. carbon credits) and stick (strong legislation committing all power providers to developing their fuel mix to include sustainable and indigenous fuels).

Question 2
How can generation and transmission adequacy in the electricity sector be improved?

Answer
In general most systems can only accept about 25% as wind sourced electricity. In Ireland's case the potential wind energy resource is much greater than 25% of the system requirement, thus there is a mismatch. Expanding the totality of the network through interconnection will allow for the expansion of renewables without impacting negatively on the stability of the system.

Question 3
What actions should be taken to create strategic storage capacity in the gas sector?

Answer
Dealing with short-term fluctuations in gas prices could be reduced through the use of strategic storage of gas. This can be done through line packing to smooth very short term peaks, but the pipeline operators need to have the appropriate incentives to operate accordingly. The more strategic approach is to have underground gas storage facilities. Private investment in storage can be encouraged through the gas market. Without an open and transparent market the business case is more difficult to establish.

Question 4
What are the challenges to greater participation by new players in the development and operation of power generation plant - and how should they be addressed?

Question 5
How, and over what timeframe, should Ireland pursue greater electricity interconnection with Europe?

Answer (Questions 4- 5)
Ireland should pursue electricity connectivity with Europe as quickly as possible. This will reduce prices in the short to medium term and encourage competitive behaviors in incumbent energy companies. In addition it will address the issue of the mismatch between Ireland's potential wind energy resource and the amount of wind energy that the current electricity system can accept.

It should be noted that greater electricity interconnection will, however, provide some strategic and security of supply challenges. In the event of supply issues in Europe (e.g. Gas supply issues during early 2006 for the UK) Ireland will be exposed. There are longer-term opportunities – e.g. when wave/tidal power becomes a commercial viability Ireland could become a net exporter, but the time horizon for this is likely to be 10 to 20 years.

Question 6
What measures could be taken to encourage the exploration and production of indigenous energy resources?

Answer
The lack of availability of accessible expertise in the area of indigenous energy resources needs to be addressed. Attracting the right resources can be encouraged through initiatives similar to Techlink Ireland, sponsored by Enterprise Ireland, which has led to large number of scientists coming to Ireland to support the Biotech sector. This will also help attract more resources towards R&D and large scale pilot projects. This is particularly true in the growing of biofuels and the development of a biofuels market and supply chain.

Question 7
Given the existing level of dependence on imported fossil fuels, what needs to be done to enhance contingency measures?

Answer

Contingency measures should include:

- Promote further demand reduction.
- Increase storage capacity, ensuring that there is storage of indigenous fuels as well as imported fuels.
- Increase the efficiency of the existing systems.

- Use power stations in priority in terms of efficiency.

Question 8
Does the Green Paper generally set out the right policy directions for security of energy supply?

Answer
- See answer to question 22

PROMOTING THE SUSTAINABILITY OF ENERGY SUPPLY

Question 9
What can be done to improve the pace and range of development of renewable energy resources for electricity generation on a sustainable basis?

Answer
A big step towards addressing this issue would be to have sufficient interconnection to mainland Europe. This would not only ensure that there would be a bigger market place for the renewable electricity generated in Ireland but also that the issue of fluctuating energy supply from renewable energy sources would be minimized. This should lead to smaller sustainable energy plant being able to be integrated into the electricity grid more easily.

Increase localized electricity generation. Along with the interconnection the implementation of a net metering system for small scale generation would make small scale Renewable energy generation a feasible option for many sites.

Question 10
In addition to electricity generation, what actions should be taken to develop renewable energy usage in the transport and heat sectors?

Answer
There are two main issues in the renewable energy heating sector. The first of these is that the indigenous supply chain needs to be developed. For example, in the area of wood heating there is currently only one large supplier of wood pellets in Ireland and while wood chip is supplied by a number of suppliers on a local basis but there is no established supply chain. The second issue is around the quality of service to the consumer. The quality of fuel, equipment, equipment installation and maintenance is of major concern with regard to renewable heating. Guidelines need to be put in place for customers on quality of service and supply; standards need to be established for the fuel; and training needs to be put in place for technical staff associated with the heating systems.

In the transport sector the excise relief scheme for biofuels of €200m over five years is a supportive step in the right direction. The small number of companies who have received concessions is also a cause for some concern. This inhibits new entrants to the market. A longer-term flat rate excise reduction of, for example €0.25 to 0.50/litre with a commitment to maintain this for 10 years would provide a more robust business case for new entrants. This would also encourage motorists to make the investment to modify their vehicles. Another opportunity is to move the state owned fleets over to biofuels. (e.g. Garda, Ambulance, An Post).

A more challenging opportunity might be building a hydrogen infrastructure in Ireland. This would be a relatively easy compared with some of the larger European countries. Encouraging large corporations to use Ireland as a large pilot could be an excellent method of putting Ireland on the front foot with respect to technologies and attracting low/Zero fossil fuel transport solutions. This could be realised in 10 years if the opportunity is initiated soon. Current research indicates that alternative low grade fuel sources could be used for hydrogen production – for example, researchers at the University of Minnesota have developed a catalytic method for producing hydrogen from fuels such as soy oil and even a mixture of glucose and water (ref: MIT emerging technology bulletin Nov 06).

Question 11

What significant new initiatives could be taken to increase energy efficiency across the economy and in particular in households, businesses, the public sector, the transport sector and the built environment?

Answer

The following outline the initiatives which could increase energy efficiency across the economy.

- White Young Green endorses the proposed measure mentioned in 2.2.39 to "work with the authorities in Northern Ireland on the delivery of progress on an all-island approach to energy efficiency".

- As the Bureau Service Provider to the successful SEI supported Dublin Colleges Energy Bureau we have identified a high level of interest from 3rd level institutions in Northern Ireland to participate in the scheme. However currently there is no support mechanism for all-island energy efficiency initiatives unless they are focused in the border counties.

- As we move quickly towards all-island energy markets the logical next step is to address energy efficiency initiatives in the same way.

- Emerging and proven technologies for demand side energy management are an important feature of energy efficiency policies. Demand fluctuations cause price spikes, a need for spinning reserve requirement, fast and inefficient ramping up of generation plant and higher levels of network management. Examples of demand side management include switching off non-essential domestic appliances and utilising possible storage capacity in the home (e.g. Fridges/Freezers as energy storage devices) or ensuring industrial compressors/pumps are run during non-peak periods. Mass compliance could be achieved through the use of additional technology in white goods/electrical products. Additional research investment, alignment with the SEM and simple legislative instruments could also be employed to encourage demand side management behaviours.

- The energy efficiency targets need to be established for each sector, not just a blanket 20% across the board. This should focus attention on the key areas that need to be addressed.

- The building regulations with regard to energy and ventilation need to be strengthened.

- The success of the LIEN needs to be replicated for the medium sized industries.

- Investment in energy efficiency should be nurtured through the awarding of grant aid for feasibility studies in Industry. These feasibility studies should be made readily available to industry, building on the case studies in the LIEN.

Question 12
What additional policy measures should be introduced to significantly expand energy RTDI and what are the priority areas of research, which need to be targeted?

Question 13
In light of the Government's Science, Technology and Innovation Strategy, what needs to be done to radically expand the national energy research capacity?

Question 14
What are the key supply and demand questions to be addressed to underpin a fully cohesive National BioEnergy Strategy?

Answer (Questions 12 - 14)
A cohesive strategy would require a 'joined up' approach from Government departments. Currently Bioenergy can be split between the Department of Agriculture and Food, the Department of Communications, Marine and Natural Resources, the Department of Finance and the Department of the Environment.

Question 15
Do we need to choose between mandatory targets and better incentives for renewable energy and energy efficiency - or is a mix of both the best way forward?

Answer
While some incentives are required the legislation must also be in place to elicit long term change. Incentives while potentially effective are short term measures.

The 20% increase in efficiency target is a soft target for 2020. This could be achieved today with the correct policies and incentives and given the likely advancement in technology over the next 14 years, 20% is a small target.

Question 16
Does the Green Paper generally set the right policy directions for energy sustainability?

Answer
See answer to question 22

The method by which the 20% target is to be assessed needs to be examined. The 20% increase in efficiency target is a soft target for 2020. This could be achieved today with the correct policies and incentives and given the likely advancement in technology over the next 14 years, this target could be significantly increased.

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22 ENHANCING THE COMPETITIVENESS OF ENERGY SUPPLY

Question 17
In the context of liberalisation of the Irish energy market, what further actions should be taken to develop more fully competitive electricity and gas markets and what specific barriers need to be overcome?

Question 18
What policy measures and targets should be introduced to reform institutional arrangements and market structure, particularly in the electricity and gas sectors?

Question 19
While a significant proportion of our energy prices are determined by international oil and gas prices, what actions should be taken domestically to reduce the cost of electricity and gas to consumers?

Question 20
State-owned enterprises (e.g. ESB, BGE, Bord na Mona) have played a central role in the development of the energy sector. How should the role of State- owned energy enterprises respond to the challenges of meeting our energy needs in the future?

Answer (Questions 17 – 20)

The Irish Energy Market liberalisation is an important method of facilitating market competition to benefit the consumer, development of innovative renewable solutions and introduction of new players in the market. There are concerns that this may be constrained by the dominance of the ESB and BGE in the market. If this is not fully explored in the Green paper and there is a risk that the benefits of the market liberalisation will be suppressed.

Some of the risks in relation to the electricity market in particular the green paper poses questions that were addressed in depth in the recent Deloitte report “Review of the Electricity Sector in Ireland”.

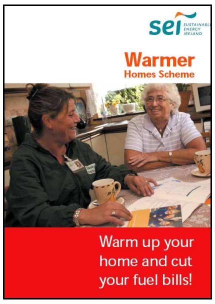
The Deloitte report identified that the fuel mix in Ireland accounts for 70% of the differential between Irish and European generation costs however 2 other issues contribute €100m per annum to generation costs:

- ESB generation labour costs 20-30% above European averages
- ESB generation availability of 80% - notably below benchmark

In addition the report identified ESB actual and perceived dominance in generation and supply as providing a barrier to the entry of private sector players. The report also states that the introduction of the Single Electricity Market (SEM) will not necessarily address ESB’s dominance and in fact, in the SEM, ESB’s dominance has the potential to have a more direct effect on end user prices. The Deloitte report makes a number of recommendations to address these issues including the sale of ESB generation and supply packages.

To address this risk White Young Green proposes the option letting of long term contracts to third parties covering the operation and maintenance of assets. The contract would also INCLUDE the trading of electricity generated. The government maintains the role of strategic portfolio management and expansion. Licenses to operate on government owned sites could be leased for new developments. The type of plant could be stipulated in the leasing agreements. This type of model has had varied success in other industries across the globe in different industries – e.g. Transport. It is generally agreed that if contracts with appropriate process performance measures are put in place these can be successful. Critical success factors include:-

1. Ensuring strategic, technical and public service needs are given an equal position to financial performance drivers.
2. Setting and communicating the objectives of a successful outcome.
3. Nominating internal and external advisors who have the depth of expertise required to ensure the best possible result.
4. Effective communications and stakeholder management throughout the entire process



Question 21
What further action should be taken to alleviate fuel poverty?

Answer
- Improve building regulations with respect to energy efficiency.
- Include innovative sustainable technologies in social housing developments.
- Expand the 'Warmer Homes Scheme' to all parts of Ireland.

Question 22
Does the Green Paper generally set the right policy directions for enhancing the competitiveness of the Irish energy sector?

Answer
Sustainable Energy and emerging relevant technologies are seen as the next 'bio-tech' opportunity for the investment community. This is a superb opportunity for the Irish Government.

Key to success of the implementation of the green paper is the management of the portfolio of government initiatives and distributed programmes. It is essential to optimise benefits, encourage investment and ensure both short and long-term opportunities are given appropriate levels of support and share of scarce resources. Management of this portfolio will require support from the private sector to augment the government efforts. The private sector can help implement portfolio management methods, change management processes, improve technical knowledge and provide financial input and objective advisory support.

Challenges are likely to include the following: –

- Portfolio management of the programmes against the current pillars – Cost Competitiveness, Environmental Protection and Secure Supplies. This has to be done within the context of current and emerging EU targets and a volatile global energy market. This portfolio management would include a benefits reporting component. These benefits measures would not only be financial, they should be designed to reflect policy delivery and the needs of different stakeholders

- Pro-active engagement and networking with key stakeholders across a complex political landscape. This is a broad change programme across industry, the public, government and investors. Stakeholders would include European Commission, large corporations, investment community, Enterprise Ireland, IDA, academic institutions, local government bodies, NGOs, public etc.

- Maintaining consistency of policy and long term incentives to ensure private financial resources flow into the sector.