

REVIEW OF IRELAND'S GREEN PAPER ON ENERGY

Phoebe Bright

phoebbright@vividlogic.ie
+353 23 55195



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INTRODUCTION

This submission for the Green Paper on Energy comes in two sections. The first section is review against the scenarios produced by Feasta and Vivid Logic for the EPA for the Envisioning Ireland Project to check that the policy is flexible enough to cope with more than one scenarios. The second section addresses the questions asked in the green paper.

The review finds that the Green Paper is appropriate for a largely Business as Usual scenario and but does not adapt well to alternative scenarios. In particular, there is a focus on large scale energy generation and an assumption that demand will increase with usage patterns staying the same.

REVIEW OF ASSUMPTIONS AGAINST ENERGY SCENARIOS FOR IRELAND

Scenario Planning

Scenario planning is a technique for exploring the future that creates several plausible but challenging alternative futures rather than making a single prediction. It has been used by commercial companies since the 1970s after Shell had used the technique and, as a result, was the only oil company prepared for the oil shocks of that decade. We adopted scenario planning because:

- **A prediction is (almost) never right.** The unexpected always happens and the assumptions, conscious and unconscious, that we can apply today may not apply tomorrow. At the end of the last century, London could see no solution to the ever increasing amounts of horse manure on the roads, and then came the motor car. This highlights the difficulty with using forecasts. We carry forward the current trends, problems and constraints and apply them to the future. Alternatively, we can look at the future and carry out backcasting, asking how we can get to where we want to be, rather than how will we be carried along by the tide.
- **Scenarios are versatile.** Scenarios can be used not only to prepare plans for the future, but to check existing plans for robustness. Will a plan work in more than one scenario or will it fail if any of the underlying assumptions change?
- **It is difficult to get consensus for a prediction.** You can either agree or disagree with other people's predictions - and we usually disagree. Scenario planning is about building plausible futures, a much less contentious task because we only need to agree that a scenario is possible to be able to use it. We don't even have to agree that it is likely. If we can develop flexible plans that will work with multiple scenarios, when the unexpected does happen, there is a better chance that the plan can be adapted to the new circumstances.
- **Good scenarios challenge one's thinking and stimulate discussion.** The human species has spent most of its history telling stories rather than looking at graphs and spreadsheets. As a result, the implications of a rich story about the future can be more easily understood by most people. It is surprising how much information a scenario can convey in a few words. For example, the following classified advertisement can tell us a lot about what 2016 might be like under a particular scenario:

For Sale: 4x4 with axle suitable for conversion to wind turbine.

This can be interpreted as:

Increases in the price of transport fuel have meant that vehicles with high fuel consumption are no longer in demand and it is becoming difficult to sell these vehicles. However, with increasing prices of home electricity, there is a boom in DIY windmills. A component of these windmills is the back axle of a car.

- **Developing an internally consistent scenario forces one to think about the impact of change, not just on one industry, but on the whole economy.** There is a tendency at present for each industry to think that it will change by adopting new energy sources, new production methods etc. - but that its customers and suppliers will continue just as they are. This of course, is not the case. Change in one area stimulates change in others and so an iterative thought process is required to explore the impact of the initial change and the changes brought about by those changes and so on.

Energy Scenarios Ireland

An overview of the scenarios is included in a separate document and there is more information at <http://www.energyscenariosireland.com>. To summarise, we developed four scenarios describing what Ireland might be like under the following conditions:

	Reactive Response	Proactive Response
Oil Peaks by 2030	<p>Business as Usual</p> <p>Ireland continues to use current assumptions until close to peak.</p>	<p>Enlightened Transition</p> <p>Ireland actively prepares for transition by encouraging efficiency and ensuring energy prices increase predictably.</p>
Oil Peaks by 2007	<p>Localisation</p> <p>Market determines allocation of remaining oil and gas. Unstable Economy. Back to the Land.</p>	<p>Fair Shares</p> <p>Pro-active response which introduces controlled distribution (rationing has so many bad connotations)</p>

Here are some headlines for 2016 for each scenario that give a feel for how different they are. Remember, SCENARIOS ARE NOT PREDICTIONS, but are stories that explore the extremes of what is plausible.

Business As Usual

- Ryanair launches plan for space
- Growing gap between rich and poor
- Half of all children born to first generation immigrant parents
- One-off rural housing now half of all new builds
- Hydrogen economy still promising

Enlightened Transition

- Second Incinerator converted to energy production
- Airships to fly over Ireland again
- Standard packaging proposal by Irish Plastics
- District heating favoured by planners

Enforced Localisation

- Allotment owners demand right to bear arms
- Irish draft horse prices higher than new tractors
- Liffey hand-dredged for bikes and prams
- Churches full again





Fair Shares

- roomgp car launched aimed at business market
- Cork port redeveloped for growth in shipping
- Good News, 5 windy days forecast!

The purpose of developing scenarios is to help in the development of flexible plans that are able to deal with a level of uncertainty.

The following section lists some of the assumptions made in the Green Paper and looks at whether these assumptions are valid for each scenario.

1. Growth in Energy Demand of 2-3% annually

Business As Usual	Enlightened Transition
	
Enforced Localisation	Fair Shares
	

Business As Usual

Energy prices increase but not enough for significant efficiency gains. Demand increases in line with economic growth.

Enlightened Transition

It is difficult to estimate change in energy demand in this scenario as there are a number of conflicting pressures for both increase and decrease in demand:

Increase in demand:

- infrastructure projects to move from convenient, low cost fossil-fuel paradigm to higher cost, wide ranging renewable solutions. This include large scale energy generation projects, work on the grid to allow for distributed energy and smart metering, public transport systems, new forms of energy creation and distribution...
- continued economic growth
- partial move towards electric vehicles creates new demand
- new forms of home heating such as ground source heat pump create new demand

Decrease in demand:

- significant gains in efficiency
- reduction in energy waste
- apparent drop in demand as some energy generated at source (home windmills etc)
- move from private to public transport
- reduction in transport need as people are located closer to work and schools
- reduction in transport of goods as move away from just-in-time delivery and goods design to last longer and be repairable.





Enforced Localisation

Dramatic drop in demand as world economy goes into depression. Many people cannot afford energy except for necessities. Some energy generated locally by DIY systems.

Fair Shares

Drop in demand enforced by Cap and Share resource allocation system. Slow development of local energy systems.

2. Energy and Finance is available for major infrastructure projects

Business As Usual	Enlightened Transition
	
Enforced Localisation	Fair Shares
	

Business As Usual

Resources available for long terms infrastructure development, but focus is on short term gain.

Enlightened Transition

Resources directed towards projects which will enable a smooth transition to a post fossil-fuel paradigm.





Enforced Localisation

No resources available for major projects.

Fair Shares

No resources available for major projects.

3.No Significant action on Climate Change

Business As Usual	Enlightened Transition
	
Enforced Localisation	Fair Shares
	

Business As Usual

Should significant action on climate change be made, this scenario will be replaced by Enlightened Transition.

Enlightened Transition

Significant action on climate change is compatible with this scenario.





Enforced Localisation

World recession causes reduction in greenhouse gas emissions.

Fair Shares

Significant action on climate change is compatible with this scenario.

4. Growth in demand means a need to increase capacity

Business As Usual	Enlightened Transition
	
Enforced Localisation	Fair Shares
	

Business As Usual

Usage patterns remain unchanged so this assumption holds good.

Enlightened Transition

Generation, distribution and usage patterns change so that current large-scale capacity is sufficiency for any increased demand. For example, implementation of smart metering means homes and businesses change their habits to make use of intermittent cheap energy. Washing is done when the wind blows rather than when a clean shirt is needed! Smart metering also gives generation companies more information about pending demand allowing for more efficient use of equipment.





Enforced Localisation

Demand decreases.

Fair Shares

Demand decreases.

5. Technology will save us

Business As Usual	Enlightened Transition
	
Enforced Localisation	Fair Shares
	

Business As Usual

Resources will be available for development of new energy sources and technology that will reduce demand, however the continuing low cost of energy gives little incentive for investment.

Enlightened Transition

Significant resources are put into developing new technology to:

- harness new sources of energy - for Ireland wave energy has big potential, but small scale develop is also significant, because while large scale is more efficient, this benefit is lost in transporting energy to where it is needed. Maybe one day all energy will be generated when and where we need it.
- energy storage both small and large scale. Hydrogen has been touted as the means of energy storage for the future, but is highly inefficient (roughly 60% compared to current battery technology of 90%).
- reduce the need for energy. Nano technology not only holds promise for generation (particularly thin-film solar) but nano machines will themselves use less energy.
- increase efficiency/reducing waste on large and small scales.





Enforced Localisation

Technology may save us in the form of the huge amount of junk that can be transformed into all kinds of more practical equipment. A significant benefit the pre-oil generations did not have. Think cars converted to carts. Freezers becoming mini-greenhouses etc.

Fair Shares

There is very little energy or money available for technology development. However, the internet is kept running and provides a valuable source of learning and sharing knowledge.

6. Ireland is particularly vulnerable due to small market, peripheral location and lack of local energy fuels.

Business As Usual	Enlightened Transition
	
Enforced Localisation	Fair Shares
	

Business As Usual

Ireland fails to develop significant local sources of energy. However, European neighbours continue their programmes so over time Ireland falls further behind in terms of energy competitiveness.

Enlightened Transition

On the contrary, Ireland has a wealth of energy sources. In particular, wind and wave and at a local level, solar and biomass. In this scenario all forms of energy source are explored and by the end of the scenario period Ireland is attracting business by providing a low cost energy environment.





Enforced Localisation

Lack of energy supplies is a national problem. Trees are cut illegally for firewood. Small scale, illegal polluting incinerators burn old rubbish for heat.

Fair Shares

Ireland struggles to keep many large scale electricity generation plant open. However reduction in demand reduces problem. By the end of the scenario period, new small scale energy plant, many are DIY solutions, are starting to provide useful amounts of energy. However, this situation is not different from the rest of the EU.

7. Ireland will continue to experience economic and population growth

Business As Usual	Enlightened Transition
	
Enforced Localisation	Fair Shares
	

Business As Usual

Continued economic growth attracts further immigration.

Enlightened Transition

Low economic growth decreases population growth. As all EU countries move towards new sources of energy, support by the EU, growth in accession states increases attracting some immigrants home.





Enforced Localisation

Economic depression drives many immigrants home, preferring to be poor in their home country than poor in Ireland. Some leave Ireland in search of a better life. Australia? Other's are attracted to Ireland, especially from the UK where city dwellers are in search of a rural life. Within Ireland a big move from urban to rural, where there is a chance of living in frugal comfort off the land.

Fair Shares

Negative growth and loss of many jobs in service industry leaves Irish people prepared to do the jobs that had previously only been done by immigrant workers. However, many are not suited to new manual labour jobs that are available in agriculture and horticulture. Many immigrants return home but some stay.

8. Current electricity consumption patterns will continue.

Business As Usual	Enlightened Transition
	
Enforced Localisation	Fair Shares
	

Business As Usual

Usage patterns remain unchanged although there are some improvements in efficiency.

Enlightened Transition

Smart metering flattens overall demand for electricity. However, more electricity is generated locally (and is not included in any statistics) which creates new, more unpredictable peaks for the large suppliers. Mild cloudy winter days with no wind create huge surges in demand for electricity, while demand drops hugely in summer. The role of the ESB is to provide high quality (ie. always available in any quantity) electricity at a high price. Local providers can only provide a limited quantity and availability may be intermittent.

Enforced Localisation

Demand decreases. ESB can only provide an intermittent service.

Fair Shares

Demand decreases. ESB continues to provide a service, though prices are high and energy rations must be used to purchase electricity.

COMMENTS ON GREEN ENERGY PAPER

Main Points:

- HIGH but STABLE energy prices are the best way to encourage investment and create a innovative and competitive market for energy supply. If we focus on keeping the price down, then we will only get incremental change as people try to make small changes to adjust to increasing prices. If we allow high energy prices, we will be forced to make step changes in the way we use energy, which will prepare us much better for the future and make us competitive, if not ahead, of the rest of Europe. However, even if prices are high, without the message that prices are stable, business will be reluctant to make investment if they feel price may well fall in the future. Ask a business leader if he wants higher but predictable energy prices or unpredictable prices as see what they say.
- Two ideas for stabilising energy price are Carbon Tax and Cap and Share, which places a cap on fossil fuels and shares them out fairly (see <http://www.capandshare.net>)
- A distributed energy network is more stable than a centrally based one (like the internet).
- In times of great change, avoid trying to pick winners - we don't know what new energy technology is going to be successful. It will depend on how our needs and how our economies evolve, so much better during this period of change, to support a wide variety of technological development.
- Current economic and social trends will not continue if energy prices continue to rise, because of the knock on effect on the economy and society. Any policy based on business as usual is unlikely to succeed.
- There is a big role for planning departments in the local authorities to ensure that there is joined up thinking when planning new development and in looking at how existing infrastructure can be modified to require less energy. For example, setting up new businesses close to their employees and to a local source of energy.
- This is trend away from direct use of oil products towards electricity which will increase demand for electricity, even if overall demand for energy does not increase.
- I would have welcomed some questions about what I liked about this report as there was much too like both in the content and the clear layouts and text of the paper.

ENSURING THE SECURITY OF ENERGY SUPPLY

3.2.1 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?

Diversify generation mix - include micro and local scale generation, in particular ESCos.

For example, local authorities or partnership companies developing plans to set up community-owned ESCos to take over responsibility for the electricity supply in areas served by particular electricity sub-stations. Their proposals are likely to involve the ESCo leasing, at a peppercorn rent, all the distribution system downstream of the sub-station and then entering into a contract with ESB Networks or another contractor for its maintenance and, where necessary, improvement and extension.

The ESCOs will then either develop some of the renewable energy resources of their areas themselves or enter into contracts with other parties for their development. We expect that, quite frequently, these energy developments will be tied in to, say, the provision of power, heat and cooling for a new factory or hospital, the project providing the impetus and base-load for a scheme which services the wider community as well. This is essentially what happened in Woking in England where the borough council took advantage to the re-development of the town centre to set up an ESCo which now supplies the Civic Offices, a new 161 bedroom hotel, another hotel, a conference and events centre, a bar, a nightclub and an bowling alley with heat, hot-water and electricity. Surplus power is exported to other local buildings and the council's sheltered housing over public wireless.

Indeed, just as factories were located beside water-power sources in the early years of the Industrial Revolution, we expect that businesses using significant quantities of energy will move to where renewable sources are available and enter into long-term contracts with those developing them. This will seem a better option for some firms than buying their energy at the variable, fossil-fuel-based prices demanded by large-scale suppliers using the transmission grid. To some extent, this trend is already apparent in Iceland, where several large aluminium smelters have been located to use the island's geothermal power instead of the more usual coal.

The ESCOs will draw on several sources for their electricity, three of which - small scale hydro, and CHP from biogas and from biomass - have the potential to provide a continuous supply of power without storage capacity being required. The ESCOs' cheapest power source will almost certainly be the wind but that supply would obviously be intermittent. It would therefore make sense for an ESCo to have a variable tariff and to supply wind electricity at the lowest rate whenever it was available. This would give its customers the option of using the cheap power for such things as water heating, storage heaters, refrigeration and the batteries of electric cars when it was available and of switching off those uses when other power sources had to be used and the price rose.

In effect, selling wind power this way passes the burden of the cost of electricity storage on to the consumer. The technology for such a system is well worked out. Information on the price of the power would be sent to a computerised "smart" meter in the customer's premises by a broadband-over-powerline system. This would allow several prices to be charged for power and for the customer's meter to be programmed to respond to each one. Enel, a large Italian utility with over 27 million customers installed smart meters for all its customers between 2000 and 2005 at a cost of €2.1 billion. The meters communicate over a low voltage power line and allow the company to turn power to a customer on and off remotely, to read usage information from the meter, to detect a service outage or the unauthorised use of electricity, to change the maximum amount of electricity that a customer can demand at any time; and remotely change the meter's billing plan from credit to prepay as well as from flat-rate to multi-tariff. Enel has estimated the savings from the system at €500 million a year.

When wind was not available, the ESCo would fall back its other sources or its storage capacity, all of which would deliver more expensive electricity than the wind. Whenever these sources were inadequate, it would turn to the transmission grid for the shortfall.

Focus on demand side management to make best use of existing plant.

Feasts report to the EPA - Envisioning a sustainable Ireland from an energy availability perspective

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

Reduce waste within the system, lines etc. (already addressed)

Provide the infrastructure for medium and small scale generation to participate in a competitive energy market.

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

There are many more benefits to be had from focusing on storage of electricity rather than storage of gas. For example making better use of intermittent sources that we have in abundance, such as wind. Currently there are no easy answers to large scale storage - it will require some lateral thinking. For example, when electric cars become common, we might have a scenario where we plug our cars into the grid when we are not using them and have a deal with the electricity suppliers that they will keep our cars charged to at least 70%. One windy days, they are fully charged, after a quite period they are only 70% charged, the rest acting a huge battery for the electricity companies.

For home heating, the first step needs to be to reduce the amount of energy a house needs to be heated. Adding sufficient insulation, stopping draughts, encouraging a switch from open fires to stoves, will all reduce the energy need. Then having establish what heat is required, continue to support the installation of solar panels.

Supporting wood pellet stoves is more problematic. The cost of transporting biomass is significant, a producing a high quality product such as a wood pellet even more so. It is viable provided transport costs are low, but is unlikely to be so going forward. Therefore using biomass or heat, needs to match the stove/boiler against the biomass available locally. This may mean log burners, wood chip or stawbale boilers.

Ground-source heat pumps are even more problematic because they are adding to electricity demand at a time when the system capacity is already stretched.

3.2.4 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?

Lack of infrastructure for distributed energy. REFIT will help, but more needs to be done.

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

There would certainly be benefit in both buying an selling electricity, however the demand must be there for it to have benefit. Of higher priority should be developing a level of affordable, locally generated energy.

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

Support the development of LOCAL energy supplies. For more details see <http://www.feasta.org/documents/landhousing/enliven.htm>

Build a flexible infrastructure for distributed energy

Ensure that energy generation, distribution and use is an integral part of the planning process.

This will create new opportunities for business and will stimulate innovation.

Run competitions for new ideas.

Encourage measurement of energy use in homes, businesses and in all council and government jurisdictions. Until we know where energy is actually being used, we can't start being more effective in how we use it. Do you know what makes up your electricity bill?

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

The most immediate thing can do is to develop our own energy supplies, and the easiest technology to develop right now is wind. The problem of intermittancy can be viewed from two perspectives. If we assume that businesses and domestic users continue to operate as normal then the amount of wind that can be incorporated into the network is very limited, figure of about 15 percent has been used. However if habits change to take advantage of the wind energy when it was available then wind can meet a much more significant segment of demand.

For example, just imagine that our washing machines had their little windmills sat on our roofs charging them whenever the wind blew. When the washing machine was fully charged, a flashing red light came on and we knew that we can now do while washing for free. Most of us would quickly change our behaviour so that we did washing when it was free rather than when it suited us (usually when we have no more clean clothes to wear!). Of course, I am not suggesting that washing machines will have their own windmills, but making the point that with the right price incentive, we change our behaviour.

In a business context, if there is significant difference in energy prices between when the wind blows on when it does not, businesses will seek to carry out high energy tasks, wherever possible, on windy days. For example a business which invest in electric delivery vans, would fully charged them on windy days, but only charge them as much as was needed on still days.

Similarly, if prices are variable so that there is a penalty for running equipment at peak times, then we can make better use of our existing generation capacity.

See http://en.wikipedia.org/wiki/Smart_meter for description of Smart metering, where it has been implemented and the technology involved.

*The world's largest and arguably "smartest" smart meter deployment was undertaken by Enel SpA, the dominate utility in Italy with over 27 million customers. Over a 5 year period beginning in 2000 and ending in 2005 Enel deployed smart meters to its entire custom base. These meters are truly smart, with integrated bi-directional communications, advanced power measurement and management capabilities, an integrated, software-controllable disconnect switch, and an all solid-state design. These meters communicate over low voltage power line using standards-based power line technology from Echelon Corporation to Echelon data concentrators at which point they communicate via IP to Enel's enterprise servers. The system provides a wide range of advanced features, including the ability to remotely turn power on or off to a customer, read usage information from a meter, detect a service outage, detect the unauthorized use of electricity, change the maximum amount of electricity that a customer can demand at any time; and remotely change the meters billing plan from credit to prepay as well as from flat-rate to multi-tariff. In various publications Enel has estimated the **cost of the project at approximately 2.1 billion Euros and the savings they are receiving in operation of 500 million Euros per year**, an astonishing 4 year payback and a testament to the power of next-generation advanced metering systems.*

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

When the military looked at developing a secure computer network, they came up with the internet. The internet is not a few big computers providing all the power, but millions of computers all connected together so that if any one, or even group fail, the network as a whole is still functional. This would be a good model to pursue for energy supply also. A distributed network of energy suppliers and users so that failure in one part of the system, still leaves a robust network. REFIT will help here, but adding a lot of small suppliers, rather than a few big ones, will, like the internet, lead to a much more stable system. There is also more that can be done by looking at demand. The ability to reduce demand if required, also increases security.

PROMOTING THE SUSTAINABILITY OF ENERGY SUPPLY

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

Create a market for energy by developing an distributed grid with smart metering that provides an easy route to market for a company that wants to sell energy. Smart metering can be two way. Not only signalling to the user the current price of energy, but signalling to the energy companies the price the user is prepared to pay for a certain amount of energy. This would allow energy generation companies to bid to fulfil a particular tranche of demand giving the best price to the customer.

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

There is great focus in this paper on electricity, but energy also include energy for transportation and heating. Transportation is actually a bigger problem, because there are fewer alternative fuel sources and the solution is likely to require a reduction in the need for transport. This will mean people needing to live closer to where they work and their children go to school. It is also important to look at how the mix of energy sources is likely to change. The trend is towards replacing an oil economy with an electric economy. Homes are being heated with electricity instead of oil (ground source heat pumps mean heating with electricity in a more efficient form) and electric cars currently appear to be the future (whether powered by hydrogen or not - hydrogen is created using electricity has been shown to be an inefficient for of transporting electricity and it seems unlikely this form of fuel cell will have a long term future. see <http://www.thewatt.com/article-1238-nested-1-0.html>).

3.2.11 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?

Assist in the measurement of energy usage with DIY audit kits. Then energy users, shocked (hopefully) at how much energy (or more importantly money) they are wasting will stimulate the market for energy saving and generation devices.

3.2.12 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?

3.2.13 In light of the Government's Science, Technology and Innovation

Strategy, what needs to be done to radically expand the national energy research capacity?

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

3.2.15 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?

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

The general policy direction is right in my view with two additions. The first is to start by measuring in details how energy is being used. What for, when, why etc. This will give much better information than we currently have available about where to target resources for quick savings and longer term reductions - "What gets measured gets done".

Set much more ambitious targets. It captures peoples imagination and stimulates step change. This was one of the comments made by a senior Johnson and Johnson executive at a recent seminar where he described why their first energy reduction project failed and why their second exceeded their targets!

ENHANCING THE COMPETITIVENESS OF ENERGY SUPPLY

3.2.17 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?

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

3.2.19 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?

The best outcome for the future would be low and predictable energy prices. We are unlikely to have this luxury and we therefore have to choose between trying to keep prices artificially low or trying to ensure that energy prices are predictable. If energy prices are predictable, businesses and consumers can make intelligent decisions about investments. Installing solar panels, buy energy efficient machinery etc. If prices are unpredictable, as they are likely to be as we approach the point where supply can no longer meet demand, it is difficult to make any investment decisions. Oil companies are not sure if they should invest in high cost new fields, businesses are not sure if they should invest in new oil or gas driven machinery and households cannot decide whether to trade in the car for a more efficient model or not. Instability does not benefit anyone except the market traders. High but stable prices, on the other hand, will encourage a faster shift to higher energy efficiency and favour the rapid development of renewable energy. High energy prices, provided they are stable, would be beneficial in the short to medium term, by encouraging what we want, energy efficient and cheaper renewable energy.

3.2.20 State-owned enterprises (e.g. ESB, BGE, BnM) 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?

3.2.21 What further action should be taken to alleviate fuel poverty?

See Cap and Share (<http://www.capandshare.org>)

Step up work to ensure that all homes are properly insulated and draught-proofed so that the least amount of heat is required.

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

The paper correctly identifies that energy price and stability is going to be a key element for international competitiveness in the future. Bearing in mind that we are already lagging behind most of our European counterparts, step change in going to be required. We are not short of resources, in particular wind and oceans, but to become a competitive country for investment, we need to be looking longer term and making some tough decisions now in order to get long term solutions. This includes thinking small as well as thinking big.

Suppose we are in 2016. Bantry in West Cork is advertising for international companies to relocate there:

Bantry is the ideal location for companies that produce energy intensive goods that need to be distributed worldwide. We have a wide range of energy resources that include wind and wave with pumped storage in local facilities providing a guaranteed supply of electricity. From Bantry, with a harbour that will take supertankers, and a first class harbour service, you can ship your goods worldwide with very low transportation costs...

About Phoebe Bright

Phoebe Bright has been an independent consultant for over 20 years, working in such diverse businesses as oil rig construction, merchant banking, insurance, aviation and food processing. Since 2001 when she attended a Business and Sustainability course at Schumacher College she has been focusing sustainable business and in particular the impact on business of increasing energy prices. Phoebe was part of the team that worked on the Energy Futures project for the EPA, helping in developing a number scenarios that explore the changes that are likely to effect us as energy price and availability change. She has also spoken at a number of conferences in recent years on the threats and opportunities presented by these scenarios.

Previous Clients include:

The London Stock Exchange

Total Oil

Bank of America

Metropolis Recording Studios

Airbase Flying School

Chase Manhattan Bank

Golden Vale

Lloyds Register of Shipping