IRELAND: BANANA REPUBLIC - GREEN AND UNPALATABLE

By: Pat Swords BE CEng FIChemE CEnv MIEMA

- How many days a week do you work for the Irish Administration?
- At least two and potentially three!
- You would think they would respect you, even acknowledge your Rights.
- Dream on!
- If you want to know more, maybe even find out what you are legally entitled to, even some compensation - then read on.

In a Nutshell!

The Irish Landscape on Completion of the Government Wind Energy Programme – three thousand of these wind turbines plus doubling the electricity grid by an extra 5,000 km.

So to save the planet about €10 million per annum in environmental damage related to slightly warmer temperatures, we are undergoing a capital investment of over €30 billion which has already added €0.5 billion per annum to our electricity bills and will end up as about €3 billion extra per annum. What a fantastic pyramid scheme, just like the recent mania on house building. Another juggernaut out of control, as the Department of Communications, Energy and Natural Resources states: "The Government target is 40% renewables by 2020, although Minister Ryan has consistently said this will not be the limit of our ambitions".

Amazing, surely the public should be told about these issues and allowed to express their wishes that such public money, instead of building useless wind turbines, should go on building schools, hospitals, infrastructure, etc!

You are right; this is what EU Environmental Legislation clearly states!

Same legislation that dictates that companies like Shell Corrib should be able to complete their industrial projects, which bring employment, goods to be exported, security of energy supplies, etc. Same laws that state you should have Access to Justice through a legal process that is fair, equitable, timely and not prohibitively expensive.

Now why would they give you that when you are already working nearly three days a week for them and their friends are happy?

However, you do have a Right to a Good Administration (Charter of Fundamental Rights - Lisbon Treaty), which applies to the Member States when they are implementing Union law. Indeed, every person has the right to have the Union make good any damages caused by its institutions or by its servants in the performance of their duties.

Lots of damages occurring in Ireland, in fact the place is a Banana Republic!

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Dedication: This book is dedicated to Irish Citizens, who as they do not have a Good Administration as defined by EU Legislation (Charter of Fundamental Rights – Lisbon Treaty) are seeing an enormous reductions in their quality of life. However, as the last living patient of Sigmund Freud reported in the Süddeutsche Zeitung on 27th March 2009, Sigmund said to her "Do not forget – to be an adult, one must dare to ask, why and how so and also express one's own opinion or opposition. If you do not do that, you will always remain a child and it will always be the others that decide over you!"

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1. EXECUTIVE SUMMARY

2. INTRODUCTION

In early 2010 it became clear to all in the Republic of Ireland that the country was in serious trouble, this was not just an economic blip on the world's markets, it was clearly "Houston; we have a problem".

- The first stage in addressing a problem is to admit to it!
- The second step is to start to fix it.
- Simple!
- However, how does one 'fix it'?

"Change is an inconvenience even when it goes from worse to better". Personally I am sceptical that the culture of the Irish is willing to accept the necessary changes that are required to ensure that the nation functions in the top half of the EU Member States. There is another saying; "if you don't like something change it, if you can't change it then change your attitude – or go elsewhere". Currently it is unfortunate that the price to be paid for by being based in Ireland in terms of loss in personal and financial development has become too high. The best and brightest are not wiling to accept this and are leaving - the country is going into even steeper decline. Ireland will either have to change or stagnate at the bottom of the EU league.

On a Friday evening in October 2009 in Zagreb I ran into a former colleague from Macedonia. I had worked with Bosko previously on EU Technical Aid projects implementing industrial pollution control and control of major accident hazard legislation. He introduced me to an Austrian technical expert who he was working with on another EU technical aid project. This Austrian expert was deeply, deeply frustrated and cynical about the waste of money, (his and our money), the manner in which legislation was being improperly applied in Austria and elsewhere, etc. I calmed him down: How many in Austria had the same in-depth technical experience of so many industry sectors as he had? How many also spoke another language fluently? How many had extensive experience working in many Member States and further a field? How many had a thorough understanding of EU legislation and proposed legislation? How many had implemented it and seen its successful and unsuccessful adoption in different countries? His answer was about five; I explained that as regards Ireland it was probably one that met that criteria!

However, I'm only one of four million....

Deeply frustrated in summer 2008 at what was occurring in Ireland, in particular the first Lisbon vote and the stupidity that was clearly manifested over the Corrib development; I had then decided to do something about it. This led directly and indirectly to a book entitled "Ireland's Choice: EU Environmental Policy or Green Economy", which was submitted as part of a call for Submissions to the Joint Oireachtas Committee on Climate Change and Energy Security in July 2009[(1)].

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[1] See: http://www.oireachtas.ie/viewdoc.asp?fn=/documents/Committees30thDail/J-Climate_Change/Submissions/document1.htm . Note the book can also be downloaded from: http://www.scribd.com/doc/20740872/EU-Environmental-Policy-or-Green-Economy-F

This book and the resulting follow up actions led me in October 2009 to lodge a complaint with the EU Ombudsman over the serious non-compliances with EU Legislation that were occurring in Ireland and despite these being highlighted to them the lack of relevant enforcement action by the EU Commission. The European Ombudsman investigates complaints about maladministration in the institutions and bodies of the European Union. However, the Ombudsman **cannot** investigate complaints against national, regional or local authorities in the Member States, even when the complaints are about EU matters. After investigating my complaint the office of the EU Ombudsman decided that a detailed investigation was warranted in relation to implementation in Ireland of:

- Directive 2001/77/EC on the provision of electricity produced from renewable energy sources in the internal electricity market and;
- Directive 2003/4/EC on public access to environmental information; and the apparent failure of the EU Commission to deal properly with the complaints I had raised.

See Attachment 1 for full details. According to EU Ombudsman's procedures the institution being investigated, in this case the EU Commission, has two months to reply. Then the person making the complaint, i.e. myself, has a further month in which to make a further Submission.

The purpose of this book is to highlight the breaches of EU Legislation, in particular the two Directives above, which are systematic in the Irish State and having a devastating impact on its proper economic and social development.

The principles of the European Union include a social market economy, respect for human dignity and respect for democracy. In particular under Article 41 of the Charter of Fundamental Rights (Lisbon Treaty) the citizen has the Right to Good Administration, the provisions of which are also directed to the Member States when they are implementing European Law. The Right to Good Administration includes:

- The right to write to the Union and receive a reply.
- That the Union must make good any damages caused by its institutions or its servants in performance with its duties, in accordance with the general principles common to the laws of the Member States.

On a personal basis the systematic non-compliances with legislation that are occurring in Ireland has resulted in projects that I have worked on being subject to what I can only describe as 'witch hunts'. Furthermore I have had to endure both financial losses and losses in future career opportunities. Damages have also occurred to many other citizens engaged in the area of industrial development and indeed all citizens who pay for electricity in the Irish State have incurred financial losses.

Will Ireland change sufficiently to become a compliant Member State? As I have already pointed out I am only one of four million. However, given my technical experience and over a decade of experience implementing EU Environmental Legislation in Central and Eastern Europe, from an ethical perspective I could not just walk out without highlighting the dreadful state of non-compliance and resulting lost opportunities that were occurring in Ireland. This book and the preceding one fulfil this duty. I intent to be compensate for the losses that I have incurred according to the principles in the Charter of Fundamental Rights, but one individual cannot and will not change Ireland on his or her own.

3. SOME IMPORTANT DEFINITIONS AND CLARIFICATIONS

3.1 A Banana Republic Rife with Political Patronage

When I was a teenager in the 1980s in Ireland, Bob Geldof, the local boy from Glenageary[(2),], was singing the hit 'Banana Republic' with his band the Boomtown Rats:

- "Banana Republic: Septic Isle: Screaming in the Suffering sea: It sounds like crying: Everywhere I go: Everywhere I see: The black and blue uniforms: Police and priests".

The administration of the country and its economy were in a desperate state, the nation was essentially insolvent and haemorrhaging its youth to a better life elsewhere. A **banana republic** is a derogative term originally used to refer to a country that is politically unstable, dependent on limited agriculture (e.g. bananas), and ruled by a small, self-elected, wealthy, and corrupt clique. There was a hefty dose of realism in what Bob Geldof was singing.

As will become clearer through this book the current situation in Ireland does not support independent thinking or business development. The country is bedevilled with corruption, while there may not be brown bags of cash changing hands the system of Administration is rampant with **political patronage**.

In the past patronage tended to arise wherever a royal or imperial system and an aristocracy dominated a society and controlled a significant share of resources. It is the support, encouragement, privilege, or financial aid that an organisation or individual bestows to another. Political patronage is:

- The practice or custom observed by a political official of filling government positions with qualified employees of his or her own choosing[(3)].

You look after them and they'll look after you! As has been so often been the case with such appointments, they are more likely to be filled with those with political loyalties to honour rather than those with the best expertise in the field and loyalty to the public at large.

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[2] Glenageary: Suburb in South Dublin near the port of Dun Laoghaire, which in the 1980s produced two world renowned singers in Bob Geldof and Sinead O'Connor.

[3] The former Taoiseach (Prime Minister) Bertie Aherne, who dominated Irish Politics in recent years, had no compunction in admitting he appointed personal friends to State Boards, no politician criticised this practice, which is deep rooted within Irish political culture. The consequences is that the Civil Service becomes politicised and there is a demoralising effect on the staff who realise it is not expertise or efficiency but networking or political affiliation that will reward them.

While the general public in Ireland would not be aware of it, given that it does not seem to be applied, we do actually have anti-corruption legislation on our Statute Books, the Prevention of **Corruption** (Amendment) Act, 2001. This not unsurprisingly is derived from EU and International requirements[(4)]. The eight pages of this document are a worthwhile read. It applies from the level of Government Ministers right down to the most junior officials in the State Administration and Public Bodies. In short any gift, consideration or advantage, which acts as an inducement to or reward for doing an act or making any omission in relation to his or her office is considered an offence.

It is worth specifically noting that the granting, refusal, withdrawal or revocation by a public official of any licence, permit, certificate, authorisation or similar permission is specifically highlighted. Where any gift, consideration or advantage has been given or received by a person and the person involved in the giving had an interest in the above, then this shall be deemed to be corruption unless the contrary is proven.

It is important to remember this point as it is clear in Ireland that the regulatory processes, in particular the decisions of An Bord Pleanala (the planning appeals board), do not follow the legislation on the Statute Books. This is not an idle or throw away statement, the Irish Academy of Engineering in their Review of Ireland's Energy Policy, 2009, which also formed a Submission to the Joint Oireachtas Committee on Climate Change and Energy Security, stated:

- *"It is difficult to have any confidence in the ability of Ireland's planning, regulatory and legal framework to facilitate the delivery of new energy projects on time or on budget. Large infrastructural projects in Ireland cannot be planned and completed in a predictable economic timeframe. The risk return calculations for such projects are currently little better than a lottery. Whether it is the experience with the Corrib project, construction of wind farms of delivery of new electrical transmission infrastructure (or indeed Ireland's road infrastructure), there is huge uncertainty about the final delivery date and overall cost which is not the case in other jurisdictions. Indeed following what can only be described as a debacle in relation to the Corrib field, Ireland is viewed as a high risk location for such large scale international investment precisely because of the unpredictability of its permitting processes".*

Furthermore StatoilHydro, who have a share in the controversial Corrib project in County Mayo, stated to the Media in August 2009:

- *"When we look at political risk with practical consequence to project progress then Ireland unfortunately stands out as an example".*

Why is our legislation so different that other Member States? It isn't. The reason is that its interpretation is being hijacked for political gain. If a project meets all legislative requirements and is turned down or obstructed by the authorities for political or individual gain then this is clearly fulfilling the definition of corruption.

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[4] Prevention of Corruption (Amendment) Act, 2001, which gave effect in domestic law to the OECD Convention on Bribery of Foreign Public Officials in International Business Transactions, and two other Conventions, concerning corruption in criminal law, and corruption involving officials of the European Communities and officials of the EU Member States.

3.2 Green – Just a New Model of Populist Ideology

One of the biggest 'buzz words' of the present is '**Green**'. We have 'Green Economies', 'Green Technologies', etc, but what exactly is Green? Let's forget about the planet and this chemical and that chemical: "History repeats itself". This is not a cliché, it is a fact – we are simply not learning from it. As a society how has our decision making process evolved?

Feudal societies dominated medieval Europe, which were characterised by the legal subjection of a large part of the peasantry to a hereditary landholding elite exercising administrative and judicial power. Indeed many European monarchs held that their power had been ordained by God and that questioning their right to rule was tantamount to blasphemy. These conventional views were challenged at first by a relatively small group of Enlightenment intellectuals, who believed that human affairs should be guided by reason and principles of liberty and equality. In many respects one can interchange the word rational with reason. Step by step in Europe in the 19th century the power of political authority by noble blood was broken down and replace by Liberal Democracies.

However, the principle of liberal democracy is increasingly under threat from **populism**, a political strategy based on a calculated appeal to the interests or prejudices of ordinary people. The grievances that populism taps are often genuine. However, its rhetoric and remedies are usually oversimplified and dangerous – there are echoes of the rise in fascism in Europe in the 20th Century. Two examples would be:

- For the past few decades Republicans in the US have found a winning formula in putting forth presidential candidates manifestly unqualified for the job yet hugely appealing to a significant segment of the population which isn't comfortable with anyone leading them who knows more than they do.

- In Latin America and other developing regions populist leaders essentially throw 'red meat' to the crowds and do very little to advance long-term economic growth and social improvement.

While in the past populism was normally characterised by nationalism and intolerance to minorities, in Western societies it has in the last decades become increasingly characterised by a suspicious, resentful and downright paranoid view of education, culture, and finance. The populist impulse has been to play upon one public emotion above all - anger. This anger has typically been directed at a diffuse enemy at the top—the monopolies, the interests, or elites of various kinds, in particular with regard to Green populism, those that pursue scientific and technical progress.

In my previous book "Ireland's Choice: EU Environmental Policy or Green Economy" I clarified and stressed the difference between **environmental protection** that was based on consideration of costs, benefits and alternatives and the Green Ideology that was based on spin and not substance. At the end of the day it is simple numbers. Money = Time and Resources, there is only so much of real money about; if you want more you have to earn more. Money can be spent on a number of things, such as health, education, infrastructure, aid programmes to developing countries, environmental protection, having a good time, etc.

It should be clear that whatever we spend it on we should spend it wisely and that means quantification, which as engineering professionals we are experienced in. It is easy to dream up schemes, such as running the whole country on wind and wave power, it is another thing to build something that is optimised to bring maximum benefit to society in which the costs, benefits and alternatives have been rigorously addressed.

Working in private industry when a project is under development and goes for capital approval, the costs and expected return on investment have to be quantified in detail. Full justification has to be provided as to the alternatives and why less expensive options cannot be applied. However, in Ireland when I point out the grandiose nature of schemes related to wind and wave power that would bankrupt the country for little or no environmental gain I am treated like a heretic. Maybe this is related to the fact that the Administration has deliberately failed to inform the public but there is also the aspect of Irish Culture that I concluded with in my previous book:

- *As the last living patient of Sigmund Freud reported in the Süddeutsche Zeitung on 27th March 2009, Sigmund said to her "Do not forget – to be an adult, one must dare to ask, why and how so and also express one's own opinion or opposition. If you do not do that, you will always remain a child and it will always be the others that decide over you!"*

Irish culture simply is not to look and facts and figures and question authority. However, decision making clearly has to be coupled to transparency with enforcement action taken for those that step out of line, such as by deliberately misinforming the public (give them a bit of ideology!) and divert huge sums of money to their friends.

In reality it is the same scam going on for centuries, just new actors, ideologies repackaged and a bit of new technology thrown in to get the pyramid scheme functioning.

Die Geschichte wiederholt sich..... or 'its the same old story'.

3.3 Global Warming and Renewable Energy – The New Pyramid Scheme

The World we live in is ever more complex and technology will continue to advance. Many people are convinced when they see the clear evidence of technological progress around them that they have intellectually advanced to the same extent relative to their forefathers. This is a false and dangerous assumption. For instance at the peak of Dutch tulip mania in February 1637, tulip contracts sold for more than ten times the annual income of a skilled craftsman. This tulip mania is generally considered the first recorded speculative bubble or economic bubble. Many individuals grew suddenly rich. A golden bait hung temptingly out before the people, and, one after the other, they rushed to the tulip marts, like flies around a honey-pot. Every one imagined that the passion for tulips would last for ever, and that the wealthy from every part of the world would send money to Holland, and pay whatever prices were asked for them. The riches of Europe would be concentrated on the shores of the Zuyder Zee, and poverty banished from the favoured clime of Holland. Nobles, citizens, farmers, mechanics, seamen, footmen, maidservants, even chimney sweeps and old clothes women, dabbled in tulips.

The tulip bubble burst and the aftermath of the tulip price deflation led to a widespread economic chill throughout the Netherlands for many years afterwards. Joe Kennedy, JFK's father, said after the crash of 1929 when he was asked why he hadn't lost all his considerable assets, he explained he chose to exit in a timely fashion after a shoeshine boy gave him some stock tips. He reasoned, "if the shoe shine boy is in the market, who is left to buy? Simple really – radio shares had boomed with the rapid and widespread introduction of this technology. Participants had bought overvalued assets in anticipation of selling it to other speculators (the greater fools) at a much higher price. Such bubbles continue as long as the fools can find greater fools to pay up for the overvalued asset. The bubbles will end only when the greater fool becomes the greatest fool who pays the top price for the overvalued asset and can no longer find another buyer to pay for it at a higher price.

Unfortunately we are not learning from this at all. Two perfect examples are the DotCom Bubble and the current Housing Bubble. In both cases there have been huge consolidations, bankruptcies, and deterioration of asset values. All of this has occurred in less than a decade. This has not been the only such situation in the same decade. Hans Blix and his team of weapons experts forensically dissected Iraq for Weapons of Mass Destruction, yet a populist agenda had the Western World whipped up to such fever pitch that the end result was an invasion with disastrous consequences. Disastrous for the country of Iraq and the soldiers and civilians, who were either killed or maimed in the conflict and for Afghanistan where the resources should have been dispatched in the first place. However, it was excellent business for those who supply military hardware.

Let's face it a mild mutation of the flu virus, a media that is ready to whip up hysteria at a moments notice, incompetent regulators and politicians, what do you get? 16,500 global deaths from swine flu, most of which were related to individuals with existing medical complications, a fraction of the number that die from flu each year anyhow and a cool $18 billion into the cash registers of the pharmaceutical industry. Poland was an exception, their health minister Ewa Kopacz is a medical doctor. She laid it down clear in the parliamentary debate over a potential mass vaccination programme; "as a doctor it is my fundamental rule, to harm nobody". Poland never purchased any vaccines for the swine flu. Would she have been listened to in Ireland?

So clearly despite our increasing technical sophistication there is clear evidence of lack of reason in our social order which is being manifested repeatedly in 'tulip mania' events. However, these have created very good business opportunities for astute people and the latest gig in town is **Renewable Energy**, which has all the characteristics of developing into another 'tulip mania'? The whole media and political process is dominated by it but it is quite shocking how little the public know about it. In Spring 2009 the EU issued Directive 2009/28/EC on the promotion of the use of energy from renewable sources and defined 'energy from renewable sources' as comprising the following eleven sources:

- Wind
- Solar
- Aerothermal
- Geothermal
- Hydrothermal

- Ocean Energy
- Hydropower
- Biomass
- Landfill gas
- Sewage treatment gas and;
- Biogases.

The goal of the EU is obviously to reduce greenhouse gas emissions, reduce dependency on energy imports and therefore improve security of supply. The really significant issue is that the general objectives of the Directive are to achieve a 20% share of energy from renewable sources in the Community's gross final consumption of energy and a 10% share of energy from renewable sources in each Member State's transport energy consumption by 2020.

So how much do the Member States of the EU spend on energy. Surprisingly this is a very difficult figure to find out, fuel prices and taxes do of course vary but it is not a figure that is published. However, there is a reference in 2008 from Commission President Jose Manuel Barroso, presenting the "Strategic Energy Review package", who said EU energy prices had risen by an average 15% in a year, and 54% of Europe's energy was now imported at a cost of about £550 for every citizen. Essentially therefore each of the 470 million citizens in the EU is paying about €1,200 per annum for energy. For the EU as a whole that is a staggering number of zeros and even 20% of it is a still a staggering sum of money in the order of a hundred billion Euros each year. If we simply look at the Irish State then each year about 28 TWh of electricity is generated. The cost of electricity in Ireland for industrial users is about 14 cent per kWh and 20 cent per kWh for households. Using an average value of 17 cent per kWh then the amount of money we pay in electricity bills is about €4.8 billion each year.

Under the normal scheme of things competition keeps prices in check and reasonably transparent. There are also the authorities, at national and EU level, which break up the cartels that form when companies try and price fix. However, now we have a new game in which 20% of the EU's energy is going to be removed from these checks and balances and given preferential treatment, such as conventional generators that will have to be taken off the grid and replaced with intermittent renewable sources at higher costs. More about this in Chapter 4, but why are we doing this?

The 2009 Directive on Renewable Energy is clear in that is connected to a number of aims:

- To reduce greenhouse gas emissions.
- To reduce dependency on energy imports and therefore improve security of supply.
- Promote technological development and innovation. In particular the development of energy from renewable sources should be closely linked to increased energy efficiency.

- Provide opportunities for employment and development, especially in rural and isolated areas and strengthening the role of local or regional small and medium-sized enterprises (SMEs).

- Reduce the EU's dependency on oil for transportation.

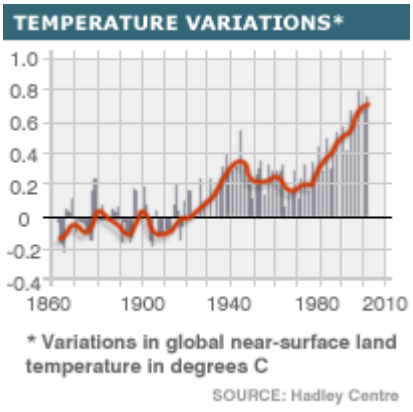
- To reduce the environmental impact associated with land filling of waste and land spreading of agricultural wastes.

The main one is of course the famous greenhouse gases. However, what is this actually all about? In Spring 2009 when I was preparing my book "Ireland's Choice: EU Environmental Policy or Green Economy" I entitled Chapter 4 as "Environmental Brand or Pragmatic Approach" and presented the question:

- "Global warming may be the biggest environmental threat we humans are facing but the planet has already been through upheavals that have been far, far worse – it can look after itself. The question is if it is worth spending the considerable time and effort combating climate change to reduce those impacts on us to a manageable level? Has climate change become a new brand to justify a new Green Ideology and support new business models?"

Indeed I gave a lot of thought and careful consideration to writing the section that followed in which I stated:

- "Scientific evidence clearly shows that the climate has always been a variable rather than a constant parameter. **Greenland** got its name from the verdant pastures that attracted the Norse settlers under Eric the Red in 986, if he had arrived in 1800 during the mini-ice age, in which ice fairs regularly occurred on the River Thames in London, he would not have been able to sell that demo-disc or he may have had to call it Whiteland! However, the majority of scientific opinion is that greenhouse gases are contributing significantly to the global temperature rise illustrated below that has occurred in the recent decades.



- Yet there are significant number of other scientists who do not agree with this assessment and who point out with strong evidence that the computer models we have to predict the future climate are simply not proven enough to model such a complex system with accuracy. On this second point I agree with them".

Things have certainly moved on since Spring 2009 and while it was not reported in any great detail in the Irish media, it didn't suit the Agenda, what came out in late 2009 in the so called 'Climategate', when the Climate Research Unit (CRU) in the UK was hacked into and files downloaded, was clearly shocking. Note the CRU is one of the official scientific bodies on the United Nations Intergovernmental Panel on Climate Change (IPCC). Data analysis had been falsified; qualified scientists who questioned the output of the CRU and IPCC were being treated like old style heretics through the use of scorn and abuse. Even worse the whole impact of climate change was being pumped up so much that press releases were being sent to Greenpeace for review and modification before release to the general public.

It is now clear that the impact of the Medieval Warming Period, which I had referred to above with regard to the Vikings and Greenland, had been grossly underestimated by the CRU. Furthermore the level of exaggeration in terms of the impact of climate change was not limited to the CRU. There are many examples of this now coming to the fore, such as how Der Spiegel reported in February 2010 that the UN IPCC stated in Chapter 12.2.3 of its 2007 Climate Change report that 53% of the Netherlands lay under sea level. This resulted in 63% of the Gross Domestic Product (GDP) of the Netherlands being generated in this area which was threatened by rising sea levels. The truth is that only 26% of the Netherland is below sea level accounting for about 19% of economic performance. Even more puzzling is that this data in the IPCC report is then officially attributed to the Netherlands State Environmental Authorities Planning Bureau (PBL).

It is not that I am disputing that there could be impacts related to global warming from the continued discharge of greenhouse gases. There could potentially be significant impacts over an extended period to us the human race! The question is if it is worth spending the considerable time and effort combating climate change to reduce those impacts to a manageable level? So we are really back to costs, benefits and impacts again. With regard to the proposed wind energy programme in Ireland, this has a capital cost of more than €30 billion, more about this in Chapter 5, as I pointed out in the previous book:

- "We are going to get the princely benefit of reducing our CO_2 emissions by 4 million tonnes per annum. In other words, a maximum of 5% of what the country currently discharges, not to mention that we live on a planet that discharges 49,000 million tonnes per annum. Even the EU (ExternE) estimates that CO_2 is damaging the planet by €70 per tonne, so we have only saved €280 million worth of environmental damage per year for this outrageous investment!"

It now looks like I had been supplied with false information; the ExternE figure of €70 per tonne that I was using had come from the German Federal Environment Agency (Umweltbundesamt) in their 2007 report. As I had pointed out in Chapter 5 of the previous book about eco-nonsense German style:

- "Personally I had turned away from using the website of the Ministry of the Environment (www.bmu.de) and that of the Federal Environment Agency (www.uba.de) as a useful source of information on environmental protection – they were just increasingly becoming unbalanced".

However, as I had pointed out in the same book "the UK Stern report suggested $85 per tonne of carbon dioxide". So the two of them couldn't be wrong? Wrong! It is now clear that the Stern report completed for the Tony Blair administration was never peer reviewed. Detailed examination now clearly shows that considerable exaggeration had been used, such as taking the worst of the worst scenarios and even using false figures for potential losses due to hurricane damage. So what is the real figure in terms of money per tonne of carbon dioxide for environmental damage due to global warming?

3.4 What Benefit is Gained in Avoiding Carbon Dioxide Emissions?

This is the really important figure, every single financial decision related to investment in climate change measures must be justified by this number! Yet there isn't an official figure present that is agreed. Personally I have enormous respect for the analysis and output of the Danish Economist Bjorn Lomborg, who came to prominence with his first book the 'Sceptical Environmentalist'. He uses figures not emotions, as do I. I can strongly recommend his second book 'Cool it' and will leave the reader who is strongly interested in the subject to global warming and the related costs and benefits to pursue this excellent text. Bjorn Lomborg does not deny that there is an impact occurring on the climate but he is estimating that the true figure of environmental damage due to global warming to be about $2 dollars per tonne. As I was saying in my previous book it was outrageous to be spending €30 billion in capital investment to simply save €280 million per year in environmental damage. However, this €280 million was wrong and could easily be €10 million per annum!

- ***It certainly shows that before investing what can be enormous sums of money it is essential to actually work out what the costs and benefits are going to be.***

In reality we do have the means of assessing cost / benefits and alternatives as is required by EU Legislation, more about this later. As I pointed out in the previous book:

- "Unfortunately global warming has become the **Global Brand of the Eco-campaign**! Emotional arguments are reigning supreme and pragmatism of the engineering profession no longer features when there are 'visions' of a new Eco-order or a fast buck".

- "Winston Churchill is attributed with saying "a lie can be half way around the world before the truth can get its boots on!" There is also no doubt that profitable businesses or even political careers can be forged on the basis of ignoring the facts in favour of half truths or even false conclusions. These then become more and more entrenched with time as to change and publicly support the true situation would be fatal in terms of business profitability or career prospects".

It really comes down to the very simple concept – money should be spent wisely where it generates greatest benefit to mankind. There are a lot of things not perfect with this world, such as poverty, disease, lack of education and proper infrastructure, inadequate environmental protection, etc. Spending what are absolutely enormous sums of money on what are little more than 'eco-brands', with limited benefit to mankind is a criminal waste of resources – it is also offence against the proper implementation of EU legislation. Should this enormous sum of money be spent to greater benefit in other areas? Could adaptation to climate change, such as flood defences or better land use planning be far more effective rather than throttling economic development to reduce discharges of greenhouse gases? The answer as Bjorn Lomborg points out is overwhelming yes, yes!

Personally I can also offer my own observations; in the early part of 2010 I spent some weeks working in Azerbaijan. The capital Baku lies on the Caspian Sea, an inland sea that is every bit as large as the Baltic, with a coastline of 7,000 km. The Caspian Sea is subject to considerable water level fluctuations. A decrease of 3 m was recorded between 1930 and 1977 and even more in geological times. Between 1978 and 1996 an increase of 2.5 m was recorded, but after 1996 levels fell by 0.5 m. These water fluctuations are mainly caused by natural phenomena but are also subject to anthropogenic effects. Was it bothering anybody in Baku? Well nobody ever mentioned it to me, life went on there as normal, people simply adapted!

So what is 'Green'? As I pointed out in the previous book:

- "Scientists and engineers, regardless of whether they work in industry or as regulators, would be the first to admit that they do not get it right all the time every time. However, as professionals they are required to provide detailed justification of their position and are constantly refining and improving their knowledge base and moving forward. In contrast those in the Green Ideology often rely on emotionally based arguments and seldom are called upon to provide a factual account of their position or their alternative proposals to meet the challenges of the future".

Let us face it 'history repeats itself'; Green is just a populist movement based on an ideology that is completely intolerant of science and reason. The consequences are a feudal society in which authority and decision making are concentrated at the top to benefit those in power and their 'friends', those that question the basis on which these decisions are made are branded as heretics. Believe me in Ireland over the last two decades, whether it was the Chemical and Pharmaceutical Industry in Cork, projects in Municipal Waste Incineration or the Shell Corrib gas pipeline, I've seen it all – the witch hunts, the constant stream of abuse and false accusations not to mention the bullyboys with their violent and anti-democratic behaviour.

Violent clashes between the Eco-warriors and police became routine in spring 2009 at the Corrib Gas Terminal construction site. All of us in Ireland both as consumers of gas and electricity and as taxpayers will pick up the bill for this behaviour!

Others can see this! As was stated when my previous book was highlighted in the Spanish on-line environmental magazine Iberica 2000.org (Attachment 2):

- It's a mess and all because people can't accept facts and figures. Instead, they insist on their visions and abuse those who do not conform to their ideology. Competence has become irrelevant; as in the Middle Ages, faith is trumping science.

4. THE THREE PILLARS OF THE AARHUS CONVENTION

4.1 The Environmental Acquis

As you no doubt have figured out I am not a Green Disciple; I'm a specialist in environmental protection. So what is Aarhus about other than a city in Denmark with a funny spelling? Unfortunately public opinion in Ireland seems to reflect the fact that Environmental Legislation relates to the birds and the bees and maybe even the fishes. There is simply no understanding of what the Environmental Acquis are and why they are so important, maybe they simply haven't been told? The Acquis is in fact the body of EU Legislation to date. The Environmental Acquis primarily relates to 300 or so Directives in the 'Environment' sphere. These Directives are not simply related to nature protection but also address, energy, transportation, agricultural practices, building quality, water, waste, air quality, pollution control, industrial risk, public participation and access to justice, etc. See http://ec.europa.eu/environment/enlarg/benefit_en.htm

This is a structured way of utilising resources to improve the quality of life for the Citizen. Fundamentally it is based on costs, benefits, examination of alternatives, the principle of proportionality and public participation. All Member States must implement the Environmental Acquis. Is it working? Certainly in those Member States that have achieved a good record of implementation. What is most pleasing to me is the dramatic improvement in the quality of life in the new and candidate Member States in Central and Eastern Europe as I have spent a decade in that region on EU Technical Assistance projects helping to implement this legislation. For instance see the report from the World Bank on "Why adopt the Environmental Acquis" and the positive benefits that are now visible in the Balkans:

- "Adoption of the Acquis introduces an approach to environmental governance that creates stronger ownership and an opportunity for citizens to influence government decisions, more transparency and local responsibility for natural resources; improved project programming and planning capacity; and a more predictable legal framework for foreign and private sector investors". http://siteresources.worldbank.org/INTECAREGTOPENVIRONMENT/Resources/511168-1191448157765/Chapter1.pdf

With regard to the section on page 29 relating to "Macedonia leading the way on IPPC performance" I was the IPPC (Integrated Pollution Prevention and Control) key technical assistance expert.

So it is now clear that there are absolutely enormous sums of money involved with the Environmental Acquis, for example as I pointed out previously the 20% of the EU's energy supply that is being diverted to renewable technologies has a value in the order in the order of a hundred billion Euros each year and is being removed from the normal checks and balances of the social market economy. Given such enormous sums of money being regulated by an administrative structure history shows us time and time again that 'absolute power corrupts absolutely', it is human nature that abuses will occur. So what are the checks and balances within the legislation?

As a technical specialist who has spent over a decade implementing the Environmental Acquis in Central and Eastern Europe I was obviously concerned with my own technical areas, such as pollution control, major accident hazards and energy. However, I also had the benefit of learning from my colleagues, who like me were presenting to and training an audience of regulators, representatives from industry and representatives of the public. I knew therefore that the Aarhus Convention existed, but at the time did not pay much heed to it as I was more concerned with my own technical issues – that most certainly is no longer the case!

4.2 The Rio Declaration and the Aarhus Convention

So what is the Aarhus Convention? The United Nations Conference on Environment and Development met in Rio de Janeiro in June 1992 and issued the Rio Declaration. Principle 10 states that:

- "Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided".

In June 1998 the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters came into being at the Fourth Ministerial Conference in Aarhus, Denmark. The purpose of the Convention was to help contribute to the strengthening of democracy in the region of the United Nations Economic Commission for Europe (UNECE).

Unfortunately the Aarhus Convention has not been ratified by the Irish State, the only one of the 27 Member States that has not done so. Indeed if we come back to Azerbaijan again, this country ratified the Convention in 1999. As Ireland was holding up the whole EU ratification process it came to a position in September 2007 that the EU had to draft a note setting down in writing certain explanations given verbally, such that Ireland will be obliged to respect the commitments arising from the Convention where they concern provisions falling within the competence of the Community. Nevertheless, this obligation has an impact solely on Community legal order.

There are essentially three 'pillars' to the Aarhus Convention and their relationship to EU and Irish Law can be summarised by:

- Access to Information on the Environment is enacted by Directive 2003/4/EC. In Ireland Statutory Instrument (S.I.) No. 133 of 2007 gives effect to this legislation. Note: This directive relates not only to access to information on request but requires information on the environment to be made available and disseminated to the public in order to achieve the widest possible systematic availability and dissemination.

- Public Participation in Decision-making is enacted by Directive 2003/35/EC. The position of the Irish State is that these measures

incorporated into existing legal provisions. However, the implementation of this Directive is subject to ongoing legal challenges. Indeed the European Court of Justice (C-427-07) has found against the Irish State in a case taken by the European Commission over the implementation of this Directive.

- Access to Justice. While the EU has yet to finalise a Directive on Access to Justice, although measures are incorporated into Directive 2003/35/EC, it is clear that Ireland is non-compliant with these requirements. Infringement proceedings are currently on-going.

4.3 The Miserable Situation in Ireland with Respect to Aarhus

It is a pretty miserable situation that all we can claim to have on our Statute Book is one of the three 'pillars' that are essential to the proper functioning of a modern European democratic state. Furthermore as will become abundantly clear in the course of this book and the resulting procedures being taken at EU level, access to information on the environment, i.e. Directive 2003/4/EC, is simply not even attempted to be complied with.

However, the third pillar is pretty fundamental; after all if something goes wrong and inevitably it will at some time, there is no point in having laws on paper if you can't access the justice system! So what is the situation in Ireland? Directive 2003/35/EC is clear in that:

- Any such procedure shall be fair, equitable, timely and not prohibitively expensive.

The European Environmental Bureau (www.eeb.org), which is the main European Non-Governmental Organisation (NGO) on environmental issues and works with the EU Commission and Parliament, concluded in its Aarhus Convention in Operation report on Ireland with regard to compliance with Pillar 3 on access to justice:

- "Quite definitely not. Access to justice is for the rich or for the very poor, takes as much as years to resolve cases, there is no expertise amongst the judiciary and there is a lack of enforcement in particular cases".

The EU commissioned a report on the system of justice in each Member State to see if it met the requirements of the Aarhus Convention. The Milieu Report issued in July 2007 concluded that there are major problems with the Legal System in Ireland, particular the huge costs and timeframes involved but also the variability in interpretation, much of it which must be due to the power of the Courts to exercise their discretion. "The Legal System in Ireland is therefore a significant impediment to access to justice and may arguably be in breach of the Aarhus Convention".

Not unsurprisingly therefore the EU Commission is trying to force an improvement with regard to access to justice in Ireland, indeed we cannot ratify the Aarhus Convention without it - Ireland just signed it but never ratified it. A case has been taken in the European Court of Justice, but it is a slow process. However, we have the completely pathetic situation that as Irish taxpayers we are paying the salaries of the officials in the Attorney General and State Solicitor's Office, who then go to Europe to deliberately obstruct us being provided with our Rights as EU Citizens.

On the domestic front the outgoing head of the Competition Authority Bill Prasifka highlighted these issues in March 2010.

- “The Department of Justice, in terms of our recommendations regarding the legal profession, has been less than forthcoming. It's very important that the reform of the legal profession is looked at very seriously, and we cannot take as a starting point the positions of the legal bodies. We have to look at this from a public interest perspective. Every time an outsider looks at the way we regulate the legal profession, it is obviously wrong. The era of self-regulation is over. The Bar Council doesn't even have a statutory basis."

- Asked if the legal profession had "too much clout", he added: "You got it in one. All we can do is continue to highlight it, but it's up to the Department of Justice to implement reform."

So it’s a mess! However, let’s look at the first ‘pillar’ on access to information on the environment and its implementation in Ireland S.I. No. 133 of 2007. There are also Guidance Notes issued by the Department of the Environment, Heritage and Local Government, the procedure required is outlined by the following steps:

- A request is made to the relevant Public Body, which has one month to reply to the request. All you need is to explain what you are requesting under S.I. No. 133 of 2007 and provide your contact details, there is no charge and it can be done in letter or by e-mail. The guidelines require that Public Bodies offer assistance to members of the public to formulate requests.

- After this period the Public Body is legally required to respond and offer the member of the public the right to an internal review.

- If the member of the public requests an internal review then there is a further month in which a more senior member in the public body has to respond to the information request.

- At the end of this internal review period a reply has to be made to the member of the public in which the option of an appeal to the Commissioner of Environmental Information has to be offered.

- The fee for an appeal to the Commissioner of Environmental Information is €150 and has to be lodged before an appeal can be accepted. There is no timeframe on the appeal but the Commissioner has the power to enter and seize documentation or initiate a High Court action.

- Note: The basic requirements for which public authorities must comply with include:

    - Informing the public of their rights and providing information and guidance on exercising those rights; and

    - Making all reasonable efforts to maintain environmental information in a form that is readily reproducible and accessible.

More information on this subject can be found at the website of the Commissioner for Environmental Information: http://www.ocei.gov.ie/en/

5. IRELAND'S CEAUŞESCU STYLE PROJECT WITH WIND ENERGY

5.1 Renewable Energy – But How Does it Work?

I spent about 7 months in Romania between 2001 and 2007 assisting them implement the EU industrial pollution control and major accident hazards legislation as part of their accession process. The legacy of Ceausescu was visible not only in the buildings in the centre of Bucharest but in the economic devastation that had been left behind, indeed Der Spiegel reported in 1989 that that Romania was 'the land of the living dead' and that the centre of Bucharest was like a concentration camp. Couldn't happen here in the West with all our technology, legal framework and sophistication! Well maybe one should take the short flight to Iceland and ask them about their 'Grand Banking Project', which not only they will be paying dearly for over the next decades but will also have to be paid by their children yet to be born. Furthermore one should not forget that it was being said in early 2009 and not without much truth that the only difference between Ireland and Iceland was one letter and about six months.

In October 2008 the Irish Government announced:

- *Minister for Environment, John Gormley T.D. has announced a revised ambitious target for renewable penetration in the electricity sector. The new target of 40% is a significant increase from the previous goal of 33% and exceeds considerably both current EU targets of 20% and the UK's current target of 15%.*

  The Minister said: "One of the most effective ways of reducing our national greenhouse gas emissions is to generate as much electricity as possible from renewable sources rather than from fossil fuels. The previous Government adopted a target that 33% of electricity consumed would be from renewable sources by 2020. Today I can confirm that the Government has now agreed, on the recommendation of my colleague, the Minister for Communications, Energy and Natural Resources, Eamon Ryan, T.D. to increase this target to 40%. The target is underpinned by analysis conducted in the recent All Island Grid Study which found that a 40% penetration is technically feasible, subject to upgrading our electricity grid and ensuring the development of flexible generating plant on the electricity system."

It had been estimated that 6,000 MW of wind energy on the grid is feasible based on All Island Grid Study, which translates into a 40% penetration of wind power:

- http://www.dcenr.gov.ie/Energy/North-South+Co-operation+in+the+Energy+Sector/All+Island+Electricity+Grid+Study.htm

Although many would doubt this is technically achievable without running the risk of severe instability and frequent blackouts on the grid and this point was highlighted in the Irish Academy of Engineering's Submission to the Joint Oireachtas Committee on Climate Change and Energy Security, which can be downloaded from the same web link as my previous book, namely:

- "The All Island Grid Study is not a sufficient robust exercise on which to base Ireland's future energy policy".

Anybody who ‘dips in’ to my previous book will soon find that I am totally against wind energy. Why?

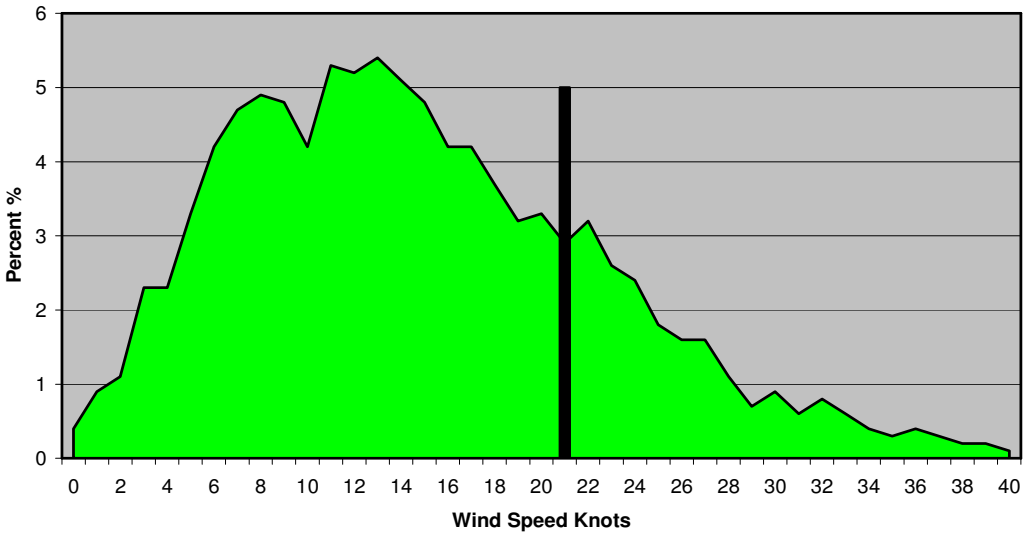
Simply put we have an electricity grid that will function perfectly without a single wind turbine or interconnector to the UK and mainland Europe. The only reason there are wind turbines is that when there is a strong wind they generate power which enables fossil fuel plants to be turned down or even off, thereby reducing carbon emissions. However, like nearly everything else in life if you think there is a simple answer to a complex issue you are wrong!

For instance one could put an infinite number of wind turbines on the grid, but if the wind isn’t strong enough, which it isn’t for considerable periods of time, there are only two choices, go without electricity or turn back on the fossil fuel plants. The glorious wind energy project in Ireland is therefore about building a second completely duplicate grid, which will only generate significant amounts of power when the wind speed is double our average, which basic maths will tell you doesn’t happen very often. As I stated in the previous book quoting an article I had published in December 2008:

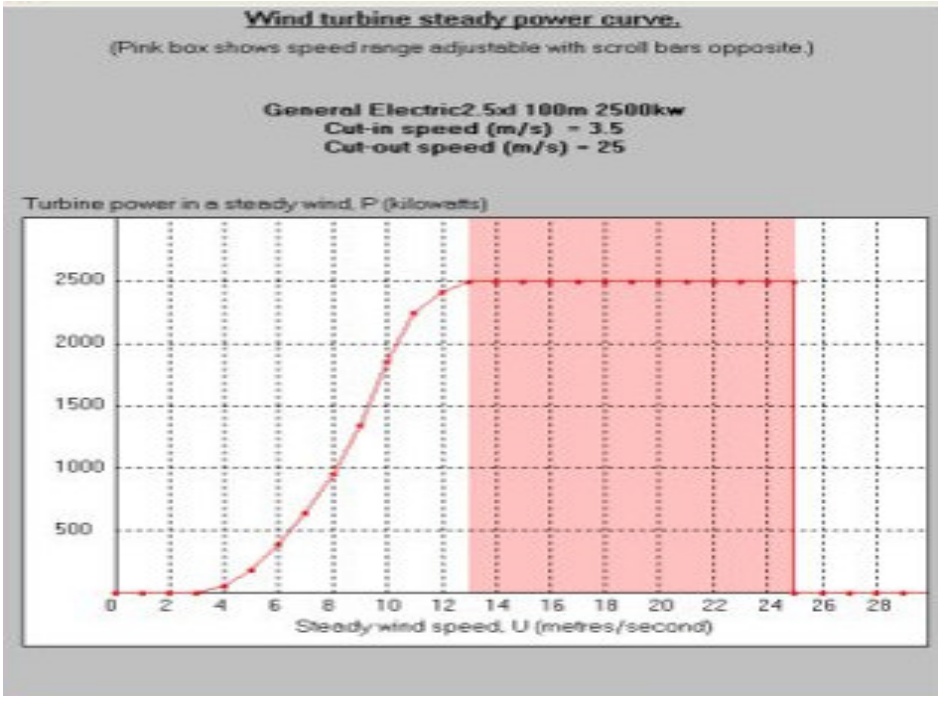
- *“Relative to other countries it is somewhat windy in Ireland, but our average wind speed is about 11 knots - a strength at which a wind turbine only starts to turn and produce about 5% of its rated output. To the public this would feel like a gentle breeze”.*

- *“By the time our forecasters are issuing a ‘small craft warning’, the wind speed is double the average at 22 knots and the turbines are only close to producing their full output. With stronger winds of about 44 knots the turbines trip, playing havoc with the grid. So over a full year one only gets 0.3 MW for each MW installed as the turbine will only deliver significant power when the wind strength is to the right of the line on Graph 1”.*

Graph 1: Average Hourly Wind Speed Measured over a Year



Most people don't like maths, but despite this things function according to sums and not wishful thinking. No matter what people may say the reality is that the power obtainable from the wind is related to the cube of the wind velocity (V^3). So if the wind speed is halved the power output from the turbine goes down by a factor of eight.



GE Wind Turbine Power Curve: With a small craft warning at double the average wind speed in Ireland (22 knots or 11 m/s) the turbine is at about 80% of its rated power. If that wind speed halves to Ireland's average wind speed (11 knots or 5.5 m/s) the turbine is producing about 5% of its rated power.

Basic observation also confirms that the wind just so happens to go up and down. Indeed Graph 1 above of Ireland's average wind speed shows that most of the time the wind speed in Ireland, as in other countries, will be fluctuating to the left of the 22 knot line, where the power output of the turbine rapidly changes as the wind rises and falls. The net result is that the more turbines you put on the grid the more instability occurs and the fossil fuel power stations therefore have to operate in 'urban driving mode', revving up and down and burning more fuel.

5.2 Jobs for the Boys - Build a Completely Duplicate System

OK – let's go back to the fundamentals, why are we spending all this money on a second duplicate grid powered by wind? Is it to create 'jobs for the boys' and a really decent few bob for the friends in this new 'Green' technology? I would hope not as such an approach is certainly illegal under the terms of the EU Environmental Acquis. So if the purpose is to reduce carbon emissions what are the costs, benefits and alternatives considered? After all Article 2 of Directive 2003/4/EC is clear in that Energy is included in the definition of environmental information as are cost benefit and other economic analyses and assumptions used.

Let's talk money again, as highlighted in the previous book by the time one adds up doubling our grid by an extra 5,000 km and installing all those turbines one won't get any change out of €30 billion, not to mention we will be adding to our landscape the visual impact of over 2,000 of these wind turbines and all that extra grid infrastructure to serve them. It gets worse, this electricity is not cheap – it is considerably more expensive than convention generation, see below. Actually no wind turbines would be built in a free open market place but when politicians interfere to give large subsidies to this sector and force conventional plants off the grid whenever the wind starts to blow, sure isn't it a great gig - if you happen to be in this wind generation industry rather than the one paying electricity bills.

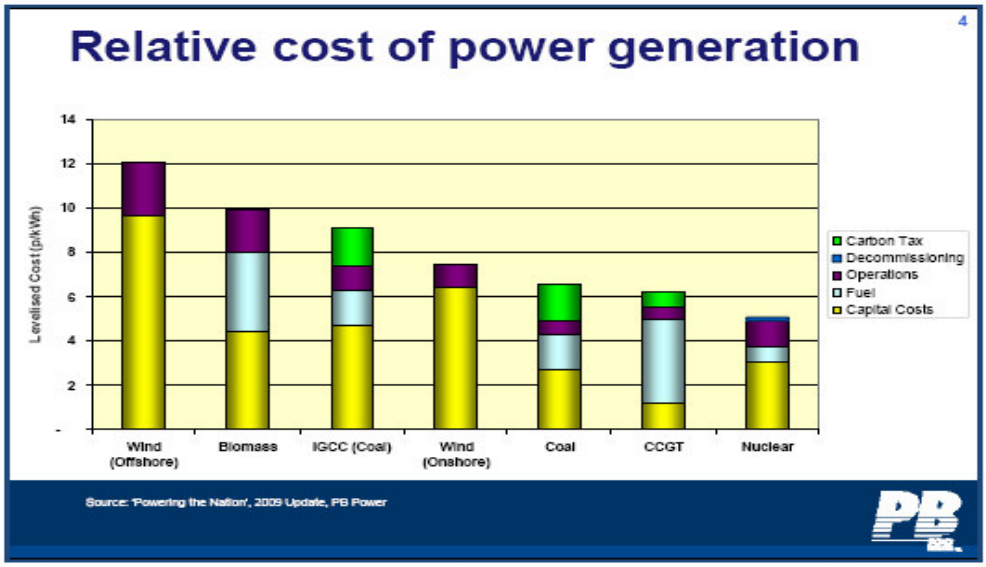


Fig. 1.4 - Source PB Power, 2009 update. Based on CO_2 costs of €20 per tonne

Taken from Irish Academy of Engineering Submission to Joint Oireachtas Committee on Climate Change and Energy Security: July 2009. Costs include penalties for carbon dioxide emissions (IGCC – Integrated Gasification Combined Cycle; CCGT – Combined Cycle Gas Turbine).

However, let's not restrict ourselves to simple grid connections and turbines, we now have a little problem in that while we have a Government Programme to install 6,000 MW of wind turbines on our grid, what do we really need?

It's not rocket science, there are lots of ways of generating electricity; one could for instance hook up the bicycle machines in a gym to little generators. What would happen if people didn't turn up to cycle them, bit of a bummer just like the fact that it's a very small percentage of the time that wind turbines are actually producing their rated power. So we need five things in a successful grid that brings economic and social prosperity to a nation:

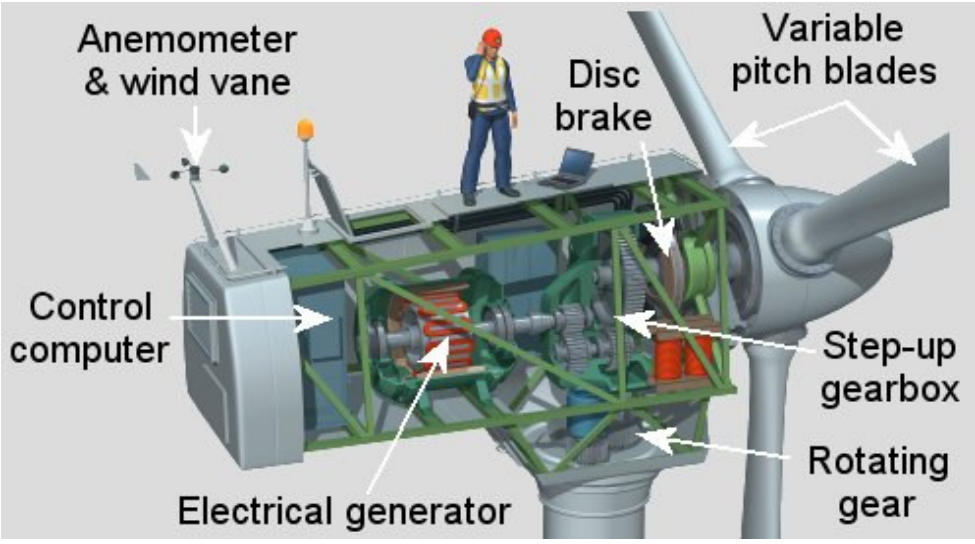
- Electrical power that is economic, such that we don't generate hundred of thousands of P45s[(5)] and export all our employment overseas.
- Electrical power that minimises environmental impacts, this can only be assessed by doing sums and not by preaching from the soap box.

[5] The Irish official document for tax purposes that accompanies cessation of employment.

- Electrical power that is generated at the periods when we need to use it, otherwise what alternative arrangements do we have to make when it isn't there or is there when we don't want to consume it.

- Electrical power that is reliable and doesn't lead to faults and trips on the grid.

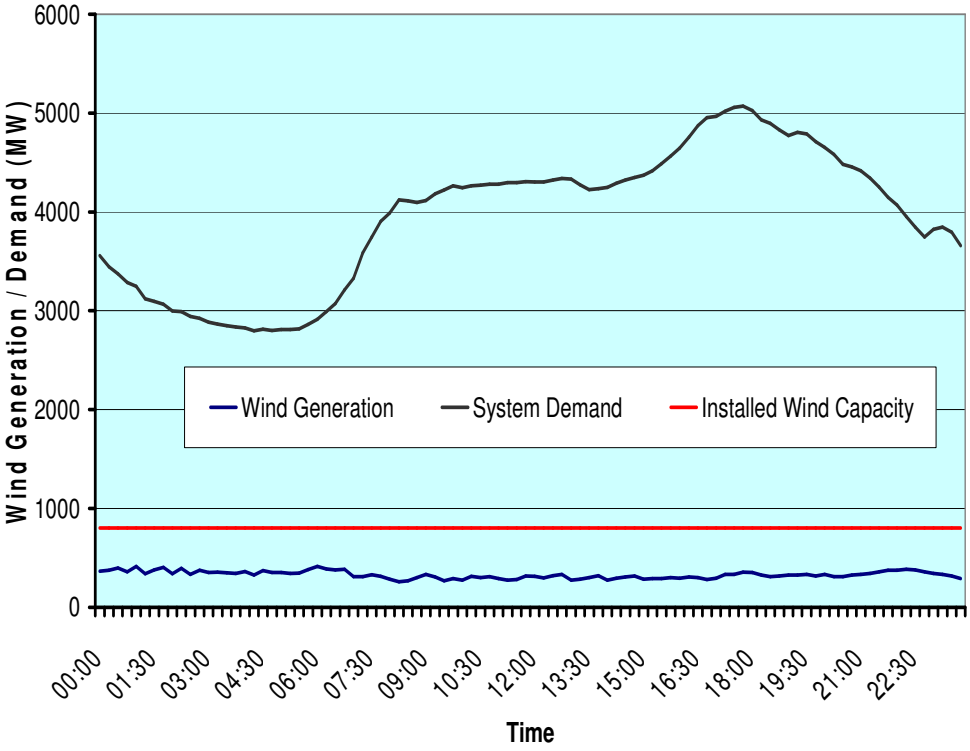
- Electrical power that is produced in equipment with a decent lifespan and therefore gives a respectable return on capital investment. Note: While conventional power stations on the existing grid have a lifespan of well over 30 years, the new wind farms will have a far shorter economic life – gearbox failures on wind turbines, which amount to about 30% of the cost of the turbines regularly occur after 5 years.



Replacing a gearbox on a wind turbine is a major job – how does one get a suitable mobile crane out to an offshore location like the Arklow Bank?

It is of course necessary to have an appreciation of how the grid actually works and the interrelationship between demand and supply from both intermittent renewable sources (wind) and conventional generators. For example on the 9th January 2008 the wind was quite blustery in the morning, measured wind speed in Dun Laoghaire started at 16 knots, dropped to 1 knot in the early evening and then by the end of the day was back to 12 knots. The system demand in the Republic of Ireland reached a peak of 5,000 MW, one of the highest ever. However, it can be seen how much power was actually contributed by the 800 MW of wind generation then installed on our grid. The rest had to be provided by conventional power generation plants.

Graph 3: System Demand and Wind Generation on 9 January 2008



Northern Ireland doesn't make a huge difference to the demand characteristics as the peak loads on the All Island Grid from the Republic of Ireland and Northern Ireland do not coincide. Currently the maximum peak on the All Ireland Grid is about 6,500 MW, see below.

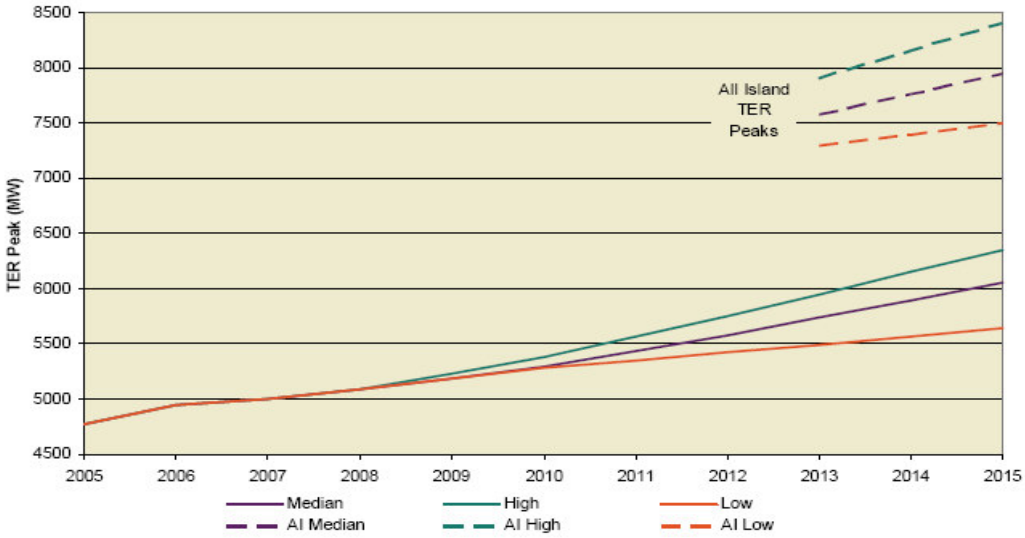


Figure 3-4 The TER peak forecast, incorporating the NI load from 2013-2015.

Peak Load for All Ireland Grid - Forecast from Eirgrid Generation Adequacy Report 2009 – 2015 (TER = Total Electricity Requirement)

However, there will be considerable periods when the 6,000 MW of wind power to be installed on the All Island Grid will be producing more than we require, particularly as in the summer months electricity demand in the Irish Republic is regularly lower than the 2,800 MW trough recorded on the 9th January 2008. Indeed the summer low of 2009 was 1,632 MW. So what are we going to do with this surplus electricity when the wind is at full strength and the demand curve is low?

5.3 Interconnectors - It Just gets Bigger and Bigger

Well the Ceauşescu style project just gets bigger and bigger, now we are going to build electrical interconnectors to criss cross the Irish Sea to the UK. Isn't this wonderful, aren't we clever boys becoming the new Sheiks of the new renewable electricity market! Well let's look at the sums first even though it is not part of the Irish cultural way of doing things. As I stated in my previous book with regard to the situation in Denmark, which has less than half the amount of wind generation on its grid, which the Irish Administration is proposing for ours:

- "Thermal plants in Denmark are often linked to district heating systems, an ideal energy efficient form of urban heating. In the winter these have to be kept running to heat the houses. However, winter is also characterised by low pressure systems tracking across the country, so that the output of the wind generation and the thermal plants often exceeds the country's electricity demand profile. This surplus wind energy, paid for with significant subsidies has to be 'given' at dumping prices or zero cost to the neighbouring grids of Germany or Sweden. As this wind energy supply is inherently variable and unpredictable and the generating capacity in Germany or Sweden is running at low capacity and low efficiencies during the night hours they are just not interested in this electricity feed in, let alone paying significant money for it. A writer in The Utilities Journal (David J. White, "Danish Wind: Too Good to be True?" July 2004) found that 84% of western Denmark's wind generated electricity was exported (at a revenue loss) in 2003, i.e. Denmark's glut of wind towers provided only 3.3% of the nation's electricity".

- "Worse in the winter months there are huge volumes of water in the hydro-plants in Norway. This could easily be used to supply the electricity from the wind generators in Denmark that is being 'dumped' to the neighbouring countries. Instead the sluices have to be opened to bypass the turbines. Is it little wonder that in 1998, Norway commissioned a study of wind power in Denmark and concluded that it has "*serious environmental effects, insufficient production and high production costs".*

For those of you who can recall reading in the media and Danish press releases that 20% of Danish electricity is produced by wind energy – it is a lie! The sad thing is an awful lot of highly subsided wind energy is simply dumped onto the neighbouring grids, for more details see the Renewable Energy Foundation's (REF) "Wind Power and Spot Prices: German and Danish Experience 2006 – 2008": http://www.ref.org.uk/Files/spot.price.leaflet.05.09.pdf .

This is not starting to sound very clever; we are spending a fortune building a duplicate grid that is wind powered, most of the time it isn't producing enough power so we have to run our existing fossil fuelled power stations, but now in an inefficient variable mode. The wind power it produces, when it does produce, has to be highly subsidised, and now we are going to dump it for little or no revenue, but first we have to invest in very expensive interconnectors to do so – wonderful if you are in the business of supplying wind turbines and electrical equipment but for us who will pay dearly for it?

With regard to interconnectors there is an existing 400 MW interconnector between Northern Ireland and Scotland and a plan to build a second one of 500 MW between Co. Meath and North Wales. As The Irish Academy of Engineering stated in its Submission to the Joint Oireachtas Committee on Climate Change and Energy Security:

- "In July 2006 the Irish Government decided to construct and interconnector from Ireland to Great Britian. It would appear that this decision was taken without the benefit of a robust techno-economic study or cost benefit analysis. In February 2008 Eirgrid submitted a "Business Case" to the CER supporting the investment. The estimated cost is €596 million and the EU has indicated support of up to €100 million resulting in a net investment of €496 million".

If the Irish Times on 4th March 2010 is to be believed, there are no limits to our Ceauşescu, i.e. Eamon Ryan of the Green Party and Minister for Communications, Energy and Natural Resources:

- "The Minister also revealed his department was in talks with authorities in Britain on "about three" new electricity interconnectors across the Irish Sea".

However, the UK isn't as stupid, their regulator is unwilling to approve any financing for the project. The Irish Academy of Engineering pulled no punches in its Submission in June 2009:

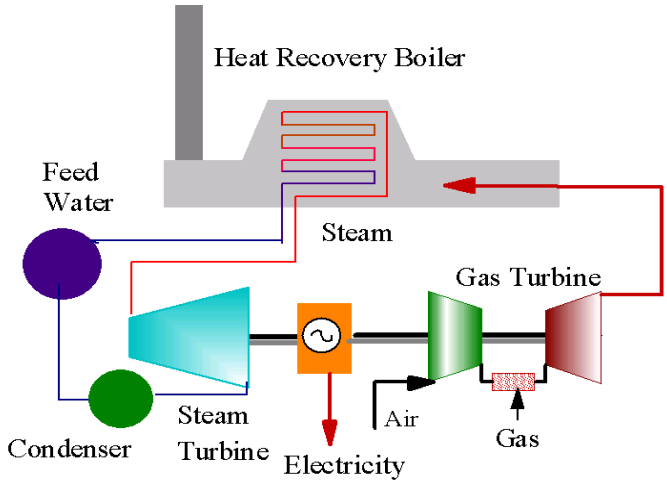
- "Defer East – West interconnection pending a full techno-economic study confirming its early requirement and economic viability".

However, they weren't listened to; the Irish cultural thing is not to do sums.

5.4 What do we do when the Wind Speed is not Twice the Average?

However, to close out the technical side first, what do we do when the wind is not twice our average wind strength and there isn't sufficient electricity generated by all the turbines we have installed? In the late nineties the Irish electricity market was deregulated and an era of construction of new power generation capacity began. Approximately half of Ireland's power generation was replaced with new power plants, many 1.5 times more efficient than the ageing plants they replaced. Something like 60% of the Republic of Ireland's electricity is now generated in modern Combined Cycle Gas Turbine (CCGT) plants. How do these work?

Gas turbines installed in such power plants are fundamentally similar in design to an aircraft jet engine in that they consist of an air compressor and an expansion gas turbine coupled together on a single shaft, rotating at 3000 rpm. Air from atmosphere is drawn into the compressor section. The compressed air then passes into a number of combustion chambers where it is mixed with a controlled amount of fuel, usually natural gas (with oil as backup) and is then heated to a high temperature by the direct combustion of the fuel. The heat produced causes an expansion of the gases across the gas turbine producing motive power. A part of the power output is used to drive the compressor, with the remaining power used to drive the electrical generator which produces electricity.



Simplified schematic of a Combined Cycle Gas Turbine (CCGT) power plant.

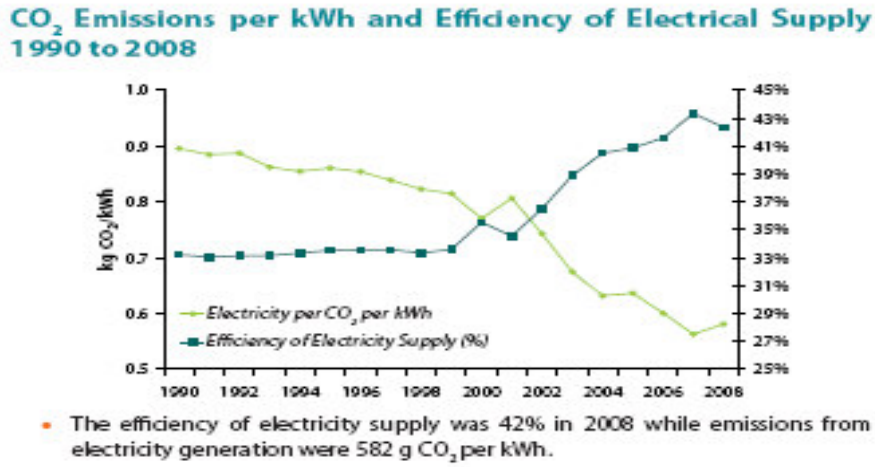
The exhaust gases from the gas turbine are at a high temperature of circa 600 °C and this energy is recovered in a heat recovery boiler where superheated steam is generated. This steam is expanded in the steam turbine producing motive power to drive the second electrical generator, which generates electricity. This form of generation is the most efficient available with about 55% of the energy in fuel being converted to electricity. This compares very favourably with standard plants built in the 1970s, which would have had efficiencies in the low thirties.

However, this form of plant needs to be kept running at a steady load, if the load drops below about 80% the efficiency really starts to drop. In reality the demand curve on the grid is fairly predictable, such as what season it is or whether it is a weekday or weekend. In the past power generation could be scheduled in to meet the expected demand curve. However, as I pointed out before we now have wind generation on the grid, if the wind speed halves then the power output from the wind turbines drops by a factor of eight. Despite what people will claim it has proven impossible to forecast ahead with accuracy the wind energy output. In reality the weather systems that are sufficient to provide the wind speeds in excess of twice our average in order to bring the turbines up to full output are moving rapidly and are usually of reasonably limited duration. The result the more wind generation on the grid the unavoidable fact is that the grid simply becomes unstable.

However, as consumers when we flick a switch we expect our electricity to work reliably. So what do power generation companies have to do now? They have to take off the Combine Cycle Gas Turbines and replace them with Open Cycle Gas Turbines (OCGT). These are simply aero derived gas turbines that can rapidly respond to load changes. However, the hot exhaust gases are simply vented direct to atmosphere, there is no heat recovery with an additional steam turbine, so while the efficiency of a CCGT is about 55% that of an OCGT is in the low forties. However, they hold this efficiency down to about 50% power output and have as mentioned already a fast response time.

The new €350 million 350 MW Flexible Gas Turbine plant for Ferbane in County Offaly approved by An Bord Pleanala in March 2010. Sole purpose is to balance the fluctuations on the grid due to wind energy.

So know as we are putting more wind energy on our grid in Ireland we are embarking on another round of power plant investment, this time in additional OCGT power plants. One can actually see this clearly in the statistics published by Sustainable Energy Ireland (SEI). The period of investment in new power plants that followed the deregulation of the power supply market to meet EU regulations in the late nineties brought huge benefits in terms of efficiency. However, that has started to go backwards as power plants are no longer being operated as efficiently due to the increased variability on the grid. Indeed the amount of carbon dioxide inherent in a unit (kWh) of electricity in Ireland has actually started to increase again!



Efficiency in Electrical Supply and Carbon Dioxide emissions in each kWh. Source SEI - Energy in Ireland Key Statistics 2009.

5.5 The Fantastic Business Model for Equipment Suppliers

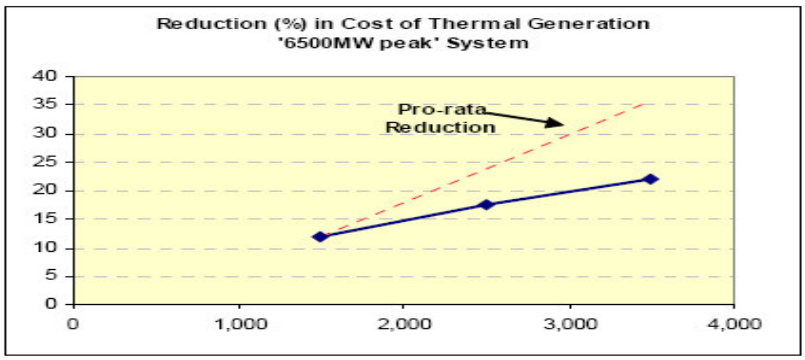
It's not as if all of the above wasn't known before – it was. Every power engineer will tell you this is what will happen; they will also tell you that when you install wind turbines you have to install gas turbines to match them. It is a fantastic business model, why do you think the two biggest gas turbine manufacturers, GE and Siemens are also heavily involved in wind turbine supply and the promotion of wind energy? It's not rocket science, it is the perfect win, win model for them, instead of investing in one efficient grid system we now have political interference dictating that duplicate generation and duplicate transmission be built[6]!

Manna from Heaven! Again a few quick sums, if we were to take a medium sized power plant of 800 MW, to build this as a CCGT unit would cost in the region of €700 million and it would require a single connection line to the grid. If we were to supply this 800 MW of electrical power in a country like Ireland with good wind resources then at best over the year the wind turbines would deliver 30% of their rated capacity. So to deliver this power we would require about 2,600 MW of wind turbines. This equates to 1,300 turbines of 2 MW each, which would ideally need to be spaced about 700 m apart in order to prevent downwind turbulence reducing the output of the adjacent turbines, i.e. a string of turbines of about 900 km in length. The installed cost of each 2 MW turbine is €2 million, so a nice €2.6 billion in wind turbine investment and an awful lot more in 900 km of grid connections to link them up, note these transmission lines would need to be sized for full load even though they will be used for an average of 30% of that load. Despite this huge investment there would be considerable periods in calm weather when there would be little or no power output, which can with a high pressure system last for well over a week if not two weeks. So we would still need to keep our power station ready to run at a moments notice.

It's not as if engineers don't know this and see the absolute futility in it, they do. The technical term used is penetration, the more wind energy on the grid the greater the penetration, the greater the penetration the less effective this technology is in reducing the carbon dioxide emissions inherent in the electricity produced on the grid.

In February 2004 Eirgrid published a report on the "Impact of Wind Power Generation in Ireland on the Operation of Conventional Plant and the Economic Implications". As I said before it is simplistic to assume that when the wind blows the thermal power plants can be turned down or even off thereby saving fuel. In fact with greater wind penetration the costs for the thermal plant reduce at a lesser rate. This is because of increased costs and less efficient operation of these units. The result, the rate of reduction in thermal fuel cost savings reduces with increasing wind energy penetration as is shown below giving diminishing marginal returns.

[6] There are also farmers benefiting from selling godforsaken plots of land at the top of hills and mountains at ridiculous sums of money.



Reduction in cost of Thermal Generation from Eirgrid 2004 Report for installed wind energy capacities of 1,500, 2,500 and 3,500 MW.

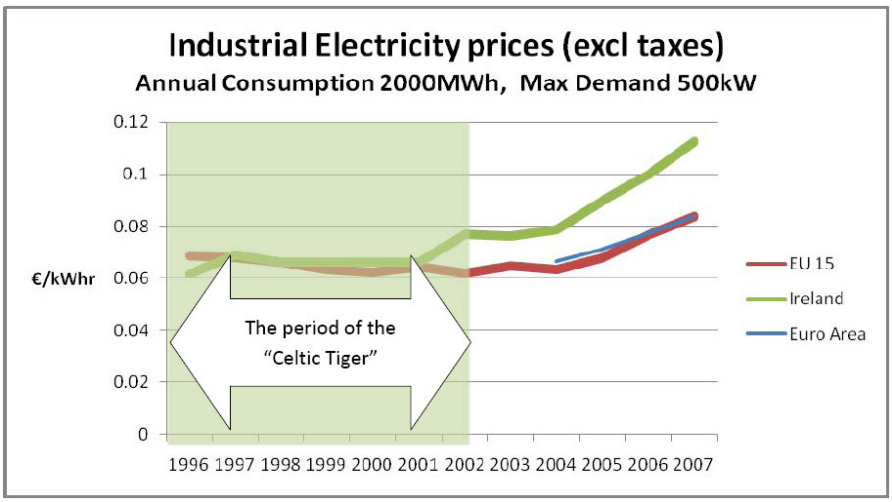
5.6 How much are we now paying?

Unfortunately the technical content of this very good 2004 report was ignored and the Ceauşescu style 6,000 MW project became the order of the day. Once can ask why this is the case and the reality is that the Irish culture has zero respect for people that do sums, it prefers Snake Oil[7] salesmen. However, this Snake Oil of the Green variety carries an enormous price tag as will become increasingly apparent.

- **You would think that the Irish Public had learnt something from the recent property debacle that has left them a failed banking sector and a bill of over €60 billion, not a bit of it, they are rushing into another bill with capital investment of more than half that again all for the glory of saving about €10 million in environmental damage per year!**

If we look at what our industry pays for electricity, see below, the prices are soaring and diverging rapidly from the EU norm, Ireland already has industrial rates that in 2009 were only surpassed in the EU by Slovakia and Italy. If I was an industrial user and could easily do so I would go to France where they are only half of what has to be paid in Ireland or to Poland, where that are just above 60% of Irish rates. Industry works very hard in a year such that hopefully there is a 7 or 8% margin available as profit at the end of the year. Irish electricity rates cannot be passed on to the price of a product, as it is a competitive environment, and are therefore coming out of the profit margin.

[7] Snake oil is a term used to describe methods and products which as considered bogus or fraudulent. The name derives from Snake Oil, one type of Quack Medicine widely available in the United States in the 19th Century.



Source: Irish Academy of Engineering June 2009 Submission to Joint Oireachtas Committee on Climate Change and Energy Security.

There is of course a limit to what the industrial consumer will pay before he leaves the country. Currently in March 2010 the situation was according to EirGrid chief executive Dermot Byrne "there were currently 1,260 MW of wind energy connected to the Irish grid. In addition, there are 1,300 MW under construction and a further 3,990 MW would be sanctioned under the next round of allocations". So who pays for all of this? Well the domestic consumer is taking a hit!

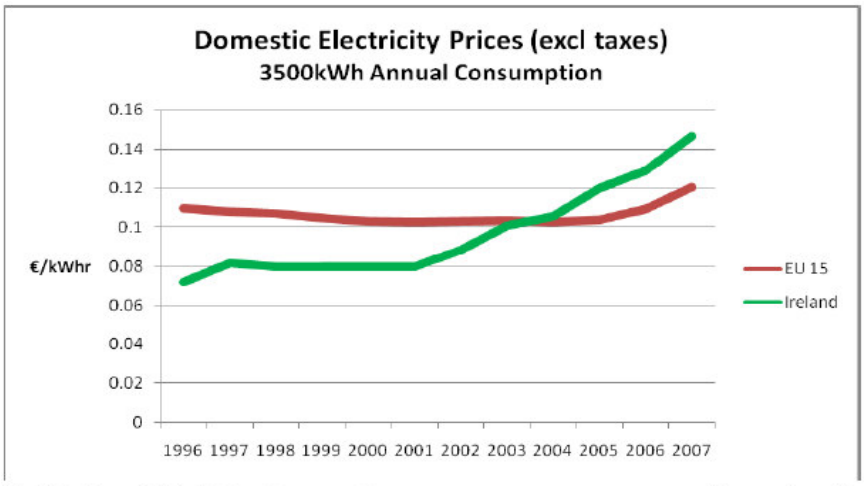
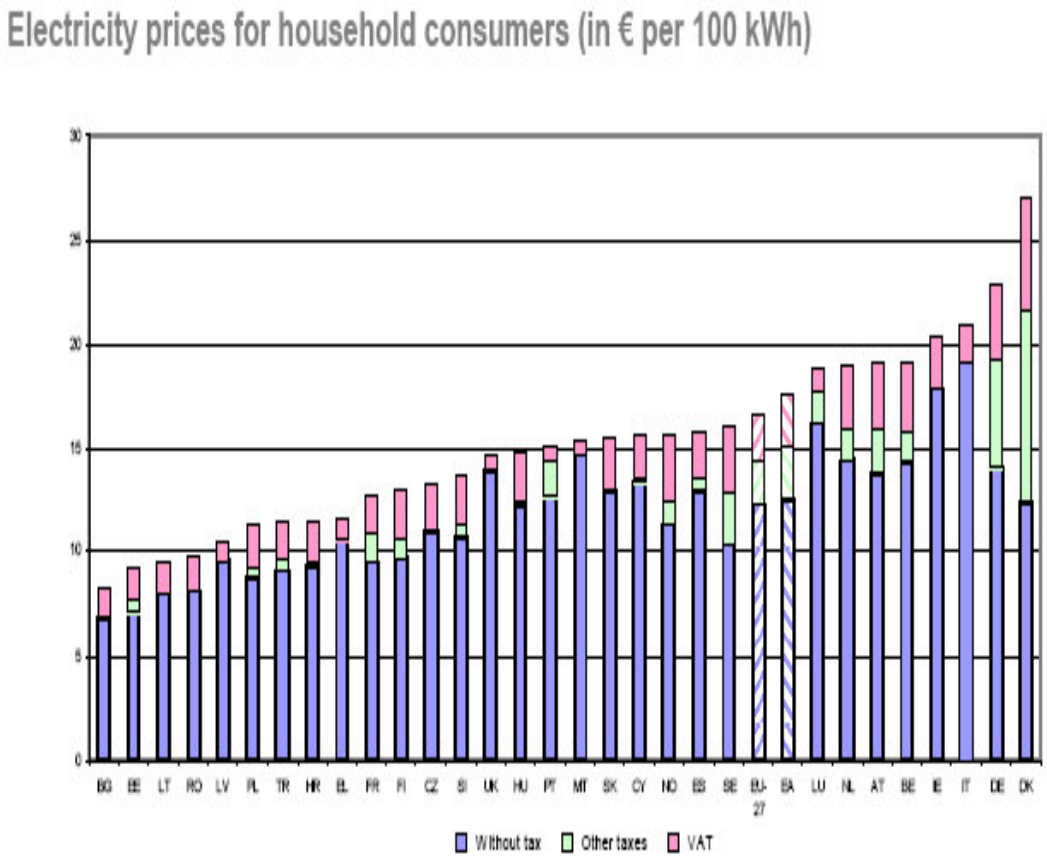


Fig. 2.3 - Domestic Electricity price comparisons *Source - Eurostat*

Source: Irish Academy of Engineering June 2009 Submission to Joint Oireachtas Committee on Climate Change and Energy Security.

As I have said before Denmark has installed on its grid less that half the amount of wind energy that Ireland is planning to do, the results are frightening, see below. Industry can't be hit with charges that are higher then the neighbouring countries so the domestic consumer has to carry the cost! German costs are going the same way as they have the next highest amount of wind energy to the Danes and we are rapidly closing in behind.



EU domestic electricity prices – 1st semester of 2009. The highest charges are in Germany and Denmark where there have been ambitious wind energy programmes. (Costs in € per 100 kWh = cent per kWh).

A staggering 27 cent per kWh is what they are paying in Denmark as opposed to 12.3 cent in France and an average of 16.7 cent for the EU-27. The Irish figures are also not encouraging, 18.7 cent in 2008 which has increased to 20.4 cent in 2009, in a period in which the average oil price went from $91 per barrel to $53 per barrel (Note; all fossil fuel prices track oil prices). The sad thing about it as I stated in my previous book, figures reported to the EU for carbon dioxide emissions in power generation clearly show that there is about ten times the amount of carbon dioxide in a unit of electricity generated in Denmark as there is in France!

The 2004 Eirgrid Report that was ignored clearly highlighted what was going to happen:

Total Costs (€M) based on Bid Prices

Wind Capacity (MW)	Cost	Increase in Cost	Increase %
0	1283	---	---
1500	1479	196	15
2500	1592	309	24
3500	1717	434	34

Percentage increase in Generation Costs based on Wind Energy Capacities of 1,500, 2,500 and 3,500 MW – Source Eirgrid 2004 Report.

There has already been 1,260 MW installed on the grid and generation costs are about 70% of the cost of the electricity delivered to the consumer. Bottom line we are paying more than 10%, i.e. a cool €0.5 billion more in electricity costs per annum we have to pay as a nation for this wind energy gig so far. However, there are an awful lot more wind turbines to be installed, what on earth is going to happen to our electricity bills?

5.7 How much will it Cost in the Future?

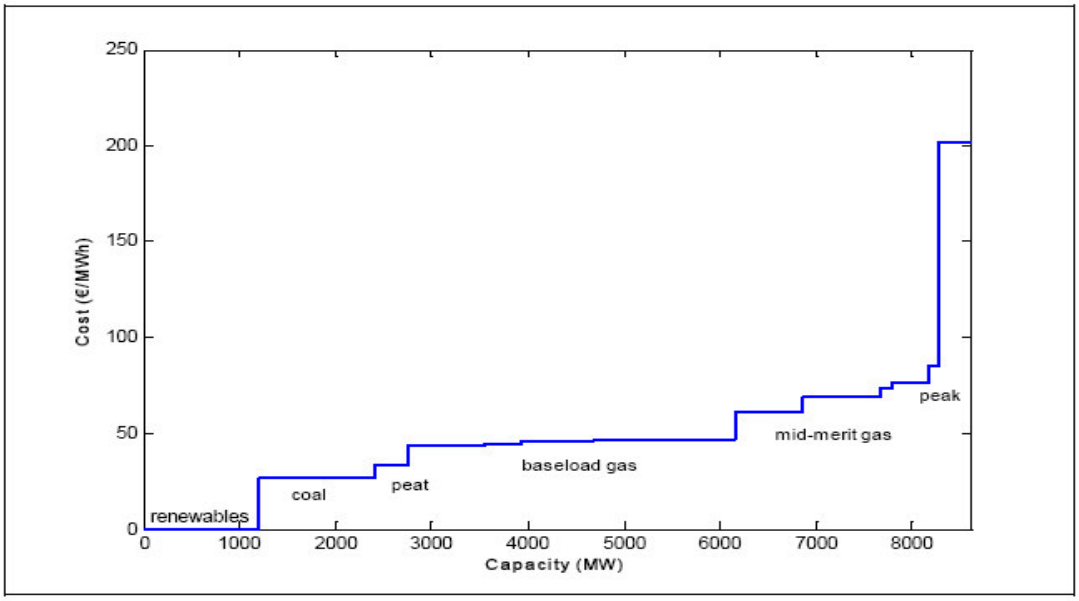
Clear indication of this was provided by the Finnish engineering company Poyry, who completed in July 2009 a comprehensive study of more than 20,000 man hours on how the electricity grids of Great Britain and Ireland would function if the proposed Wind Energy Programmes were completed.

- http://www.poyry.com/index_cases/index_cases_12.html

On all grid systems the power input has to match the demand requirement, if it doesn't there are voltage drops called 'brown outs' and even potentially 'black outs' when there is insufficient power to meet the demand. If too much power is fed to the grid in excess of demand, then surges in voltage occur, which can damage electrical equipment. Therefore the grid operator has a fine balancing act to follow.

If we consider a traditional grid system in which no wind energy is installed then the grid operator schedules in power plants based on merit according to the demand that arises, which in reality he is able to predict based on experience. If we look at the graph below from the ESRI Working Paper of 2009 we can see the merit curve for 2007 for the All Island Grid, which is given in cost (€/MWh). This is provided without any cost for carbon. The peak load on the All Island Grid comprising the Republic of Ireland and Northern Ireland is about 6,500 MW. If we look at the graph below and ignore the 1,200 MW attributed to renewables, then it is clear that this 6,500 MW could be dispatched for a cost basis of in or around €50 per MWh (Note: In 2009 the system average price was actually about €40 per MWh). Essentially therefore for conventional generation capacity there is a 'spot price', the power plant which can provide the electricity at the lowest price is the one that is brought on line to meet the demand. As the demand goes up, such as during late afternoon as was shown previously for the 9th January 2008, so too does the spot price and the mid-merit plants and 'peakers' are then brought on-line to meet the peak demand periods.

Figure 1. Merit order dispatch curve for Ireland, end of 2007

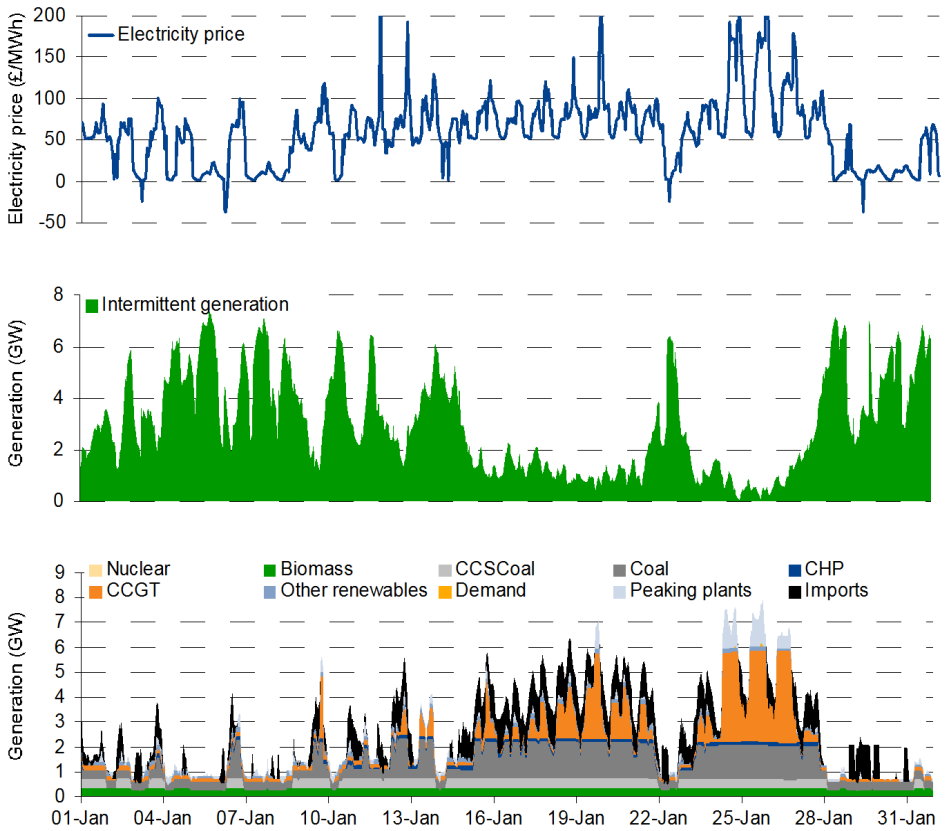


Dispatch Costs for All Ireland Grid - Taken from ESRI Working Paper No. 334 of December 2009.

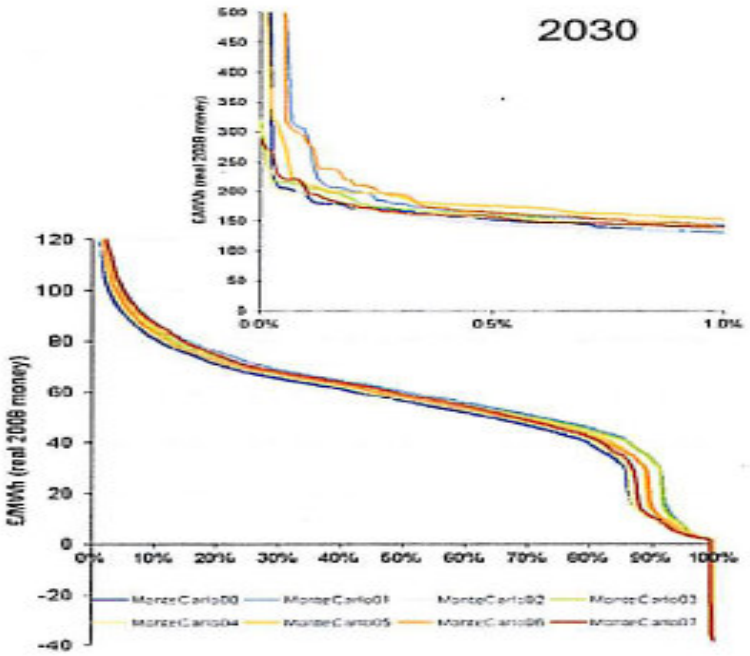
However, now we need to consider what happens when we have a non-traditional grid in which we have renewable generators that are an intermitted source, namely wind, which over a year in Irish conditions will generate 0.3 MW for each installed MW. Two things start to happen then (a) the legislation requires the grid operator to give preference to these renewable generators, in other words conventional plants have to be brought off line when the wind energy is being produced and (b) a different cost basis applies for the renewable generators. In Ireland the feed in tariff for wind energy under Renewable Energy Feed In Tariff (REFIT) 1 is currently about €67 per MWh. However, new tariffs of €140 per MWh for offshore wind were announced in January 2009.

Simply put when the wind speed picks up to about double the average Irish wind speed the wind turbines start to produce electricity and the far cheaper plants have to be taken off line. This causes huge inefficiencies in that the power plants are now operating in a variable mode rather than on a steady power output, i.e. they are less efficient and burning more fuel. Furthermore the more wind energy that is installed on the grid there is a reduction in the number of hours of electricity production that is available to the conventional power plant, so it becomes more difficult to finance and pay back the capital and operating expenses. The result the 'spot price' has to go up to cover these costs. For the consumer it is a 'lose – lose' situation. When the wind blows there is a higher renewable feed in tariff. When the wind doesn't blow the spot price is higher than it would otherwise have been. The more wind energy there is on the grid the worse the 'lose – lose' situation becomes.

This is why the Poyry report is so important as it predicts what will happen when the Government's Wind Energy Programme is completed. The graphs below from the report clearly shows the predictions for electricity prices in Ireland in 2030 corrected for 2008 prices given completion of the proposed wind energy programme.



Irish Market in 2030 with weather of January 2000 - Fig 17 from the Poyry Impact of Intermittency Report of July 2009. (Note January is consistently a windy month with high wind outputs compared to other months)



Price duration curve in Irish Market for completion of Wind Energy Programme in 2030: £/MWh (2008 money) – taken from Fig. 12 of Poyry Report.

Clearly by 2030 when the Wind Energy programme is in place electricity prices would be consistently (more than 70% of the time) above £50 per MWh (> €57 per MWh) and regularly (10% of the time) rising to above £90 (> €100) per MWh. Figure 12 of the report is showing electricity prices that the consumer will pay will rise by about 60% above the no wind case assessed before of €50 per MWh.

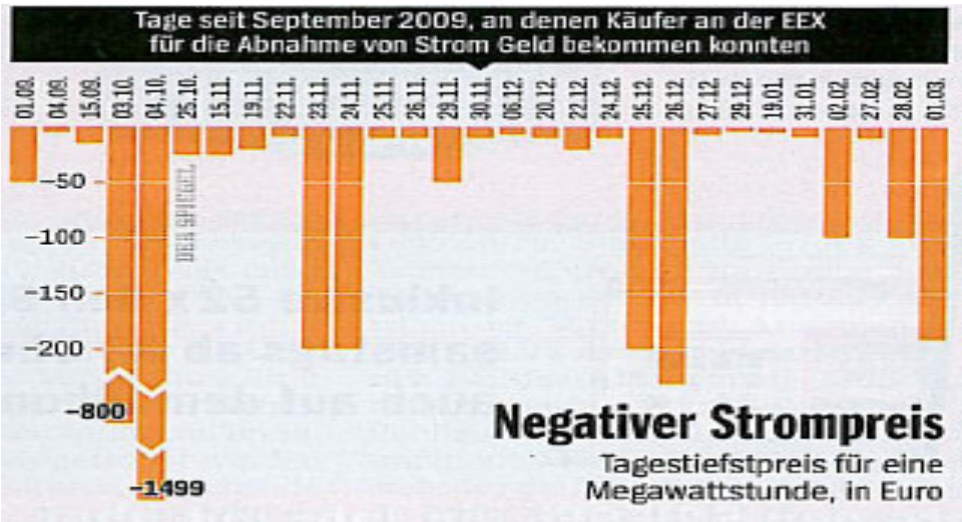
Each year about 28 TWh of electricity is generated in the Irish Republic and the cost of electricity in Ireland for industrial users is about 14 cent per kWh and 20 cent per kWh for households. Using an average value of 17 cent per kWh then the amount of money we pay in electricity bills is about €4.8 billion each year. Seventy per cent of this is related to generation costs, which clearly are going to go up by about 60%. Furthermore massive grid expansions are required under the All Ireland Grid Study to double our grid capacity by an extra 5,000 km to facility this Wind Energy Programme:

- €4 billion at least is earmarked for Eirgrid: http://www.dcenr.gov.ie/Press+Releases/The+Green+Economy+is+here+%E2%80%93+Minister+Eamon+Ryan.htm

This will also serve to push up transmission charges as this expenditure in capital and operational costs has to be recovered.

The Poyry report and the above are clearly demonstrating that the Wind Energy Programme is going to drive up the cost of electricity in Ireland by at least €2.9 billion each year (i.e. 60%) over the no wind situation. Further conclusions of this report relates to the complete inability to fund new thermal plants to meet EU forthcoming environmental standards and the lack of justification for interconnection between Britain and Ireland that cannot be seen as a magic bullet.

In fact it may well be that Poyry are underestimating the impact of the wind energy on the grid. Remember the Irish programme is for 40% wind energy penetration, in Germany the penetration is now nearly 20% and it is playing havoc with the grid.



Negative electricity prices in €/MWh for electricity prices on the European Energy Exchange (EEX) – Source Der Spiegel March 2010. (€ per MWh divided by 10 = cent per kWh).

In periods of low demand and a storm front the wind energy starts to dominate the grid. The existing power stations and grid are simply not able to respond and absorb it. As I mentioned in the previous book, if one takes a CCGT power plant off-line, it takes several hours to bring it back to operational conditions and each stop / start cycle is equivalent in wear and tear to a month's continuous operation. The traditional large plants on the German grid installed prior to the renewable energy craze simply cannot be stopped and started at short notice. The market forces then respond to drive the prices in the negative zone to penalise them for producing electricity and force them off the grid. However, the wind energy providers are receiving a legally fixed price all the time they are producing, which is set at a level significantly above the average price on the exchange. All of this has to be paid for by the consumers as the spot price has to rise above what it would otherwise have to be on other occasions to compensate the power plant operators for the periods in which the EEX price had gone into the negative, i.e. lose – lose.

One could build pumped storage units, smart grids, open cycle gas turbines, etc, to compensate for these fluctuations. Indeed given the wild fluctuations in price they would be very profitable. However, while again this is 'Manna from Heaven' for the equipment suppliers, the grid worked perfectly well for years without them. They are in effect just another secondary and indirect cost of the Wind Energy Programme that must be added to the direct costs of wind turbines and grid expansion. As the Renewable Energy Foundation (REF) pointed out in July 2008 in their "Wind Power Study Reveals Hidden Costs and Reliability Issues":

- "Wind power does not obviate the need for fossil fuel plants, which will continue to be indispensable. The problem is that wind power volatility requires fossil fuel plant to be switched on and off, which damages them and means that even more plants will have to be built. Carbon savings will be less than expected, because cheaper, less efficient plant will be used to support these wind power fluctuations. **Neither these extra costs nor the increased carbon production are being taken into account in the government figures for windpower**."

In the UK there is still, although not as strong as it might be, a culture of listening to people who do sums. The House of Lords Economic Affairs Committee on the Economics of Renewable Energy simply stated the obvious in their Conclusions and Recommendations:

- "We have a particular concern over the prospective role of wind generated and other intermittent sources of electricity in the UK, in the absence of a break-through in electricity storage technology or the integration of the UK grid with that of continental Europe. Wind generation offers the most readily available short-term enhancement in renewable electricity and its base cost is relatively cheap. Yet the evidence presented to us implies that the **full** costs of wind generation (allowing for intermittency, back-up conventional plant and grid connection), although declining over time, remain significantly higher than those of conventional or nuclear generation (even before allowing for support costs and the environmental impacts of wind farms). Furthermore, the evidence suggests that the capacity credit of wind power (its probable power output at the time of need) is very low; so it cannot be relied upon to meet peak demand. Thus wind generation needs to be viewed largely as additional capacity to that which will need to be provided, in any event, by more reliable means (paragraph 230)".

- "We consider that the Government, if it pursues a renewable energy target in addition to its targets for reducing carbon dioxide emissions across the board, should prioritise the development and promotion of the other effective and economic options, both to bring down carbon dioxide emissions and to achieve security of electricity supply. It will be important to ensure that incentives to promote those renewables which offer only intermittent supply do not divert attention from, and deter investment in, other low-carbon generation options and thereby risk power shortages. So far as reliability is concerned, the best options amongst renewable sources of generation are tidal barrage and biomass, which are problematic for other reasons, and hydro power, which is not, but is already near the limit of its potential in the UK. The most reliable low-carbon alternative to renewables is nuclear power (together with conventional fossil fuel generation with carbon capture and storage, if and when that becomes available) (paragraph 231)".

At the end of the day it is a fantastic business model for GE, Siemens and others, who supply wind turbines, gas turbines, grid infrastructure, etc, and those that get into the pyramid scheme early and develop and sell on wind farms – same old story, history repeats itself. However, what are we the public going to get out of it?

5.8 What is the Benefit?

So now we are in heretic's corner, where Pat the Engineer does the sums on the wonderful benefits we are going to do to the planet with our €30 billion plus capital expenditure and extra electricity charges, which are going to exceed €2.9 billion per year, such that we all live happily every after. As I highlighted in the previous book in December 2008 I had an article published in Inshore Ireland.

- *"So, for an investment in the range of €30 billion, we are going to get the princely benefit of reducing our CO_2 emissions by four million tonnes per annum".*

- *"In other words, a maximum of 5% of what the country currently discharges, not to mention that we live on a planet that discharges 49,000 million tonnes per annum. Even the EU (ExternE) estimates that CO_2 is damaging the planet by €70 per tonne, so we have only saved €280 million worth of environmental damage per year for this outrageous investment!"*

As I had mentioned previously in Chapter 3 how much exactly is a tonne of carbon dioxide causing in environmental damage? The ExternE (External costs of Energy) European Research Network I had dealt with already in more detail in the previous book. It is a project that has been underway from the beginning of the nineties to determine the external costs caused by energy production and consumption, i.e. the monetary quantification of its socio-environmental damage. By quantifying external costs through a scientific and rigorous analysis, information can be provided to policy makers to assess renewable electricity targets, energy taxes, quantified objectives to reduce green house gases emissions, state aid exception for clean energies, energy efficiency standards, etc.

In 2003 the ExternE programme produced the EU Commission's "External Costs – Research results on socio-environmental damages due to electricity and transport". In Rugby parlance they 'kicked to touch':

- "Damages caused by global warming provoked by greenhouse gases have been assessed on a global level within ExternE; however the range of uncertainty is much higher for global warming impacts than for other damages. In addition to the damage cost estimates, for impacts on ecosystems and global warming, where damage cost estimates show large uncertainity ranges, marginal and total avoidance costs to reach agreed environmental aims are calculated as an alternative second best approach – For global warming, a shadow price (i.e. like a virtual taxation) for reaching the Kyoto reduction targets is used".

Couldn't figure it out so came up with a number which they reckoned the public would pay to reach a target set by political means (Kyoto). In the 2005 "ExternE – Externalities of Energy Methodology 2005 Update" Chapter 8 addresses the Impacts of Global Warming. However, it quickly becomes apparent that the ball is still being 'kicked to touch' and most of the chapter is dealing with the shadow price relevant to meeting the Kyoto targets. However, circa €9 per tonne of carbon dioxide is published as the derived damage cost estimate in which they state the figure is conservative in the sense that only damage that can be estimated with a reasonably certainty is included. To me this is the way it should be, if you don't have a factual basis to justify it, then it has no reason being there.

The latest publication that appeared related to this area was from the German Federal Environment Agency (Umweltbundesamt), who in April 2007 published their report using the same consultants as the EU Commission in the 2005 report, namely the Institute for Energy Economy and Rational Energy Usage (IER) at the University of Stuttgart[(8)]. The recommended a figure of €70 per tonne of carbon dioxide for global warming effects, which I had used in my 2008 article. Turns out on detailed examination of the source material that they had derived it by looking at the published literature and what other people were 'guessing', in particular the Stern Report of $85 per tonne of carbon dioxide. As the Umweltbundesamt concluded:

- The authors determined that there is a significant agreement among the experts that the costs are with large certainty higher than €14 per tonne of carbon dioxide.

Sounds like a straw pole to me!!! So what is the actual figure?

Bjorn Lomborg is a man who impresses me as he does his sums and stands over them, not to mention takes a lot of abuse head on. I think he is right and the damage sum is $2 per tonne, so our 4 million tonnes of carbon dioxide savings on the Irish Wind Energy Programme[(9)], if we even get them, on this basis are not going to be worth more than €10 million per annum in environmental damage avoided.

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[8] Ökonomische Bewertung von Umweltschaden: Methodenkonvention zur Schätzung externer Umweltkosten – Ecolological evaluation of environmental damage: Method convention for estimation of external environmental costs.

[9] 4 million tonnes of Carbon Dioxide savings derive from the All Ireland Grid Study Work Stream 4 – Analysis of Costs and Benefits, which projects for portfolio 5 (42%) renewables carbon dioxide emissions of 15 million tonnes per annum. Note these are theoretical savings that have not been realised in other countries that have installed wind energy programmes, such as Denmark. Indeed the Australian Government Electricity Supply Industry Planning Council stated in their 2003 Wind Power Study that actual greenhouse gas savings would be some 60% less than what is claimed. Current emissions due to electricity production in the Irish State are 18 million tonnes and if we add in N.

Let's face it even if one was to use the €9 per tonne figure one would still be only looking at €36 million per annum in avoided damage. For a price tag of over €30 billion in capital investment and €2.9 billion per annum in additional running costs and where the key equipment items will start to fail after as little as 5 years – are people out of their minds?

History is dominated by stupidity and ignorance, so that's why we put laws in place to try and reduce the damage caused by some humans losing the run of themselves. How many laws are being broken by the Irish Wind Energy Programme? As will become apparent – lots!

An overriding principle of EU Legislation is the Principle of Proportionality, which requires that the extent of the action must be in keeping with the aim pursued. When applying the general principle of proportionality, the European Court of Justice frequently states that the principle requires an act or measure to be "suitable" to achieve the aims pursued, or it rather concludes that a decision is disproportionate because it is "manifestly inappropriate in terms of the objective which the competent institution is seeking to pursue".

Article 5 of the Common Provisions of the Lisbon Treaty requires that the institutions of the Union shall apply the principle of proportionality as laid down on the application of the principles of subsidiarity and proportionality. The Protocol on the Principles of Subsidiarity and Proportionality is clear in that draft legislative acts shall take account of the need for any burden, whether financial or administrative, falling upon the Union, national governments, regional or local authorities, economic operators and citizens, to be minimised and commensurate with the objective to be achieved. Furthermore each institution shall ensure constant respect for the principles of subsidiarity and proportionality, as laid down in Article 5 of the Treaty on the European Union.

Given that we now have Directive 2009/28/EC on the promotion of the use of energy from renewable sources, which is going to remove 20% of the EU's energy from the normal checks and balances of the market economy and increase considerably the costs we as consumers are going to pay for it, it is a complete failure of good governance that the EU Commission has not properly established and referenced a financial figure for the environmental damage that carbon dioxide is causing. Without this figure how can it be demonstrated that the financial burdens are commensurate with objective to be achieved?

However, it is not completely fair to lay all the blame for this on the EU. Prior to the 2009 Directive on Renewable Energy, in 2001 Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market. For Ireland a 13.2% national indicative target was set for electricity to be produced from renewable energy sources (RES-E) to be achieved by 2010. Article 3 is clear in that:

- Member States shall take appropriate steps to encourage greater consumption of electricity produced from renewable energy sources in conformity with the national indicative targets referred to in paragraph 2. **These steps must be in proportion to the objective to be attained.**

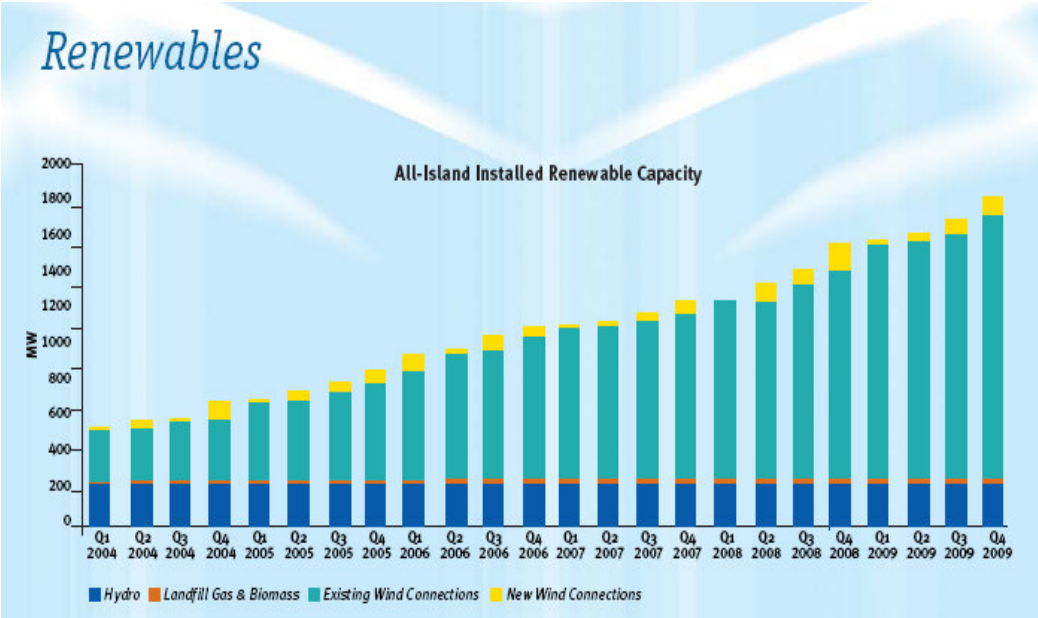
Ireland this figure rises to about 22 million tonnes. Given that N.Ireland is unlikely to implement this wind energy programme and the costs and infrastructure are being primarily incurred by the Irish Republic, the actual benefits are more likely to be in the region of 4 million tonnes.

5.9 Costs that clearly cannot be justified!

Yet we have in Ireland a Government Policy since October 2008 with a target of 40% for renewable penetration in the electricity sector. Furthermore it's to all extents and purposes based around wind turbines. If we consider the definitions in Article 2 of Directive 2001/77/EC then:

- 'Renewable energy sources' shall mean renewable non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases);
- 'Biomass' shall mean the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste;
- 'Electricity produced from renewable energy sources' shall mean electricity produced by plants using only renewable energy sources, as well as the proportion of electricity produced from renewable energy sources and including renewable electricity used for filling storage systems, and excluding electricity produced as a result of storage systems.

However, what renewable suppliers have we got on our grid? According to Eirgrid installed renewable capacity on the grid on 31st December 2009 was 1,441 MW.



All-Ireland Installed Renewable Capacity 2004 to 2009 – Source Eirgrid Quarterly Review 2009.

If we consider the above it is clear that we have the same hydro-electrical resources that we had prior to the 2001 Directive, such as the 80 MW Ardnacrusha plant that was built after the foundation of the State in the 1920s. The implementation of the Directive has been nothing but a complete Wind Energy programme, which as I have previously mentioned according to EirGrid chief executive Dermot Byrne in March 2010 "there were currently 1,260 MW of wind energy connected to the Irish grid. In addition, there are 1,300 MW under construction and a further 3,990 MW would be sanctioned under the next round of allocations".

What has happened to the other technologies that are listed in Directive 2001/77/EC? More about this to come in the later chapters of this book! However, this is a disastrously financial way of reducing carbon dioxide emissions. It's not as if this fact wasn't known, it was and clearly documented.

The Eirgrid 2004 report concluded that meeting the target of 13.2% set in Directive 2001/77/EC by installing only 1,500 MW of wind energy on the grid (i.e. a penetration level of 11.7%), would increase electricity costs by 15% and would translate to a carbon dioxide abatement cost in excess of €120 per tonne. This is a massively inefficient cost for carbon dioxide abatement, technologies such as carbon capture and storage are being developed with projected costs of in the order of €30 per tonne and energy efficiency projects have always been traded on the EU Emissions Trading Scheme at less than this, e.g. currently in early 2010 about €15 per tonne. As the Irish Academy of Engineering pointed out in their Submission to the Joint Oireachtas Committee on Climate Change and Energy Security:

- "In terms of carbon abatement, international authorities are unanimous that energy efficiency programmes are the most cost effective way to tackle the problem".

If we go back to the House of Lords and their Economics Affairs Committee:

- "Our calculations suggest that the total extra annual cost of increasing the share of renewables in electricity generation from 6% to 34% in 2020 would be £6.8 billion or an extra 38%. — This implies that the additional cost is about £130 per tonne of carbon dioxide emissions avoided".

We can also look at the situation in Denmark:

- Following a study of Danish conditions, the Organisation for Economic Co-operation and Development (OECD, 2000) stated that subsidies to the wind turbine industry have been and continue to be very large, and come in three main categories: production subsidies, tax subsidies for co-operatively-owned wind turbines, and guaranteed prices for wind-generated electricity. It criticised the Danish government for not publishing any kind of cost-benefit analysis for its wind turbine programme, and gives its own evaluation that "the environmental benefits of using wind turbines instead of gas are far less than the subsidy to wind turbines".

The Eirgrid engineers in 2004 simply stated the obvious:

- "The cost of carbon dioxide abatement arising from using large levels of wind energy penetration appears high relative to other alternatives".

They were ignored and Government Policy decided to completely ignore technical and economic considerations for perceived political benefit. Where do we go to now? The Irish Academy of Engineering in their June 2009 Submission to the Joint Oireachtas Committee on Climate Change and Energy Policy clearly called for a halt to the Renewable Energy Programme pending a robust technical-economical analysis.

- "Evidence based research, rather that ideology, should determine public energy policy".

However, nobody listens to facts and figures in Ireland, as I wrote in the December 2008 article:

- *"As the American philanthropist Warren Buffet says: "A public opinion poll is no substitute for thought". Does anybody in Ireland ask: "How much is this going to cost? What am I going to benefit by? What were the cheaper alternatives?"*

- *"It's your choice Ireland, start looking at facts and figures and listening to your engineering profession or pay a terrible price!"*

However, there are administrators who are appointed to deal with the proper implementation of Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market and other Directives in the Environmental Acquis. For instance Article 3 of Directive 2001/77/EC is clear in that:

- "Not later than 27 October 2002 and every five years thereafter, Member States shall adopt and publish a report setting national indicative targets for future consumption of electricity produced from renewable energy sources in terms of a percentage of electricity consumption for the next 10 years".

A second general report on the analysis of the success in meeting national indicative targets has to be published by the Member States for the first time not later than 27th October 2003 and every two years thereafter. The EU Commission is required to assess these reports and publish its conclusions for the first time not later than 27th October 2004 and thereafter every two years. Do these reports by the EU Commission reflect the costs of the electricity from renewable sources and whether the steps are in proportion to the objective to be obtained (Article 3 (1) of Directive 2001/77/EC)? If we consider the 2005 report on the support of electricity from renewable energy sources Annex 3 "Costs of current support schemes and effectiveness"; how did they assess wind energy?

- "How effective are these support schemes? The definition of effectiveness has been taken as the electricity delivered in GWh compared to the potential of the country for each technology".

If we look at the 2007 EU Commission "Green Paper follow-up action – Report on progress in renewable electricity", it simply does not even mention the costs and benefits of the programme or the principle of proportionality. The only report I can find that does attempt to raise these issues of costs is, as was highlighted in the previous book, the EU report of 2008 - Progress on promotion and growth of renewable energy sources and systems, Final Report, Section 3.9 on Financial Impact:

PROGRESS

promotion and growth of renewable energy sources and systems

Final report

Contract no.: TREN/D1/42-2005/S07.56988

Rogier Coenraads, Gemma Reece, Monique Voogt - Ecofys, the Netherlands
Mario Ragwitz, Anne Held - Fraunhofer ISI, Germany
Gustav Resch, Thomas Faber, Reinhard Haas – Energy Economics Group, Austria
Inga Konstantinaviciute - Lithuanian Energy Institute, Lithuania
Juraj Krivošik, Tomáš Chadim - Seven, Czech Republic

Utrecht, 5 March 2008

- This report has a projected cost of €308 billion for the 25 Member States (EU-25; Romania and Bulgaria excluded) for capital investment in new renewable electricity generation for the period 2005-2020. As highlighted above the cost for Ireland alone is projected at more than €30 billion Euros, i.e. more than 10% of the total for a country that has less than 1% of the population of the EU-25!

- The average annual cost of generating this renewable electricity in the EU-25 is estimated in the report at €5.7 billion Euros. As I have already highlighted our Ceauşescu style project is going to cost at least €2.9 billion per annum in additional electricity costs, more than half that projected for the EU-25 total.

- The **additional** generating costs for renewable electricity for the period 2005 to 2020 in the EU-25 is estimated at an average of 1.74 cent per kWh. The wind energy programme in Ireland for which only 20% of the projected turbines have been installed is **already** costing us an extra 10% in electricity charges, i.e. essentially this 1.74 cent per kWh.

Clearly the situation is completely and utterly out of control and horribly depressing when one realises that it will only save the planet about €10 million per annum in avoided environmental damage. Even worse is where is this money going to come from, the country is already completely broke with a bank bail out of over €60 billion to be funded from the recent 'property mania'? All the evidence is clear is that yet again it is going to be borrowed!

- On 27th February 2010 it was reported in the national press that the State owned Electricity Supply Board (ESB) had borrowed just over €300 million through the sale of sterling bonds. The company intended to raise over €3 billion in debt from financial institutions over the next few years to help fund €22 billion investments in the area of renewable power generation, clean electricity and energy efficiency.

- On 4th March 2010 a National Summit on Renewable Energy was held in Dublin. It was reported how Donald Murphy director of Global Project Finance with Bank of Ireland stated that the bank had a fund of €800 million for renewable energy and this was "certainly not a sector that was being ignored".

Let's face it Bank of Ireland are one of the largest component of the €60 billion bank bail out that the Irish tax payer has to pick up. They are insolvent and only being kept alive by massive injection of State funds – yet now they have €800 million to inject into the renewable energy gig!

God help us - how on earth did this juggernaut get totally out of control? After all the Department of Communications, Energy and Natural Resources highlight in their 2nd December 2009 press release:

- **"The Government target is 40% renewables by 2020, although Minister Ryan has consistently said this will not be the limit of our ambitions".**

Ceausescu lives on – read on!

6. THE SYSTEMATIC DISSEMINATION OF FALSE INFORMATION – LIES AND MORE LIES

6.1 Pork Barrel Politics – But if you are not told the facts?

Let's remember our United Nations Rio Declaration, which lead to the UNECE Aarhus Convention:

- "Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided".

In the US they talk about 'Pork Barrel Politics[(10)]'. The Irish Wind Energy Programme is the mother of all pork barrels; the recent National Asset Management Agency (NAMA) take over of the Irish banks' bad and toxic loans amounting to some €60 billion perhaps being the exception. The Wind Energy Programme is 'Manna from Heaven', i.e. a fantastic business model for those who supply wind turbines, gas turbines, grid infrastructure, etc, and those that get into the pyramid scheme early and develop and sell on wind farms. A complete disaster for us, who are the knaves in the feudal society, and have to pay for it out of the money we earn each week. Surely "knaves in a feudal society" is a bit extreme – read on!

There are very, very few people in Ireland in March 2010, who know that the Irish Wind Energy Programme has a capital cost of over €30 billion, already costs us more than €0.5 billion per annum in increased electricity charges, which will rise to at least €2.9 billion per annum and will only save environmental damage that amounts to some €10 million per annum. Why so? If we look at first 'pillar' of the Aarhus Convention, i.e. Directive 2003/4/EC, Article 2 clearly defines energy and cost benefits and other economic analysis and assumptions as information on the environment. The Directive is clear in that it requires dissemination of information on the environment to the widest possible systematic availability.

In the previous book I pointed out some of the problems with the fact that we have a Government sponsored Green Ideology that has totally failed to communicate basic facts on the costs, benefits and alternatives of the Irish Wind Energy Programme to its citizens. For instance:

- "A massive State sponsored advertisement programme has been undertaken 'The Power of One'. While this has supposed to be

[10] Pork Barrel Politics – Usually refers to public spending that is intended to benefit constituents of a politician in return for their political support. The net result a dysfunctional Administration and public resources that could have been spent too much greater effect elsewhere. One could equally call it a populist political decision taken before an election to gain votes or simple old political patronage again.

connected with climate change measures it is in fact nothing but propaganda for a Green Ideology that does not even remotely address or answer the three simple questions above".

While I am not sure of the costs of this extensive advertising campaign, I have seen a figure of €20 million quoted; there were a hell of a lot of TV advertisements so I wouldn't be surprised. Anyhow we will move on from spending significant sums to inform the Irish Public about Green Ideology to actually systematically disseminating false information to them. On the 9th February 2008 the Irish Independent, Ireland's largest news daily, reported on "Vote of confidence in wind farms with €4 billion plan for new projects". The new Government renewable energy feed-in tariff scheme (REFIT II) for offshore wind energy was being presented. A nice tidy €140 per MWh (14 cents per kWh) which would lead to the development of over 2,000 MW of projects over the next five years at an investment of over €4 billion.

The article quoted industry experts stating that offshore wind turbines have a typical 'load factor' or production rate, of between 40 to 43% as opposed to onshore developments which usually run at 25 to 30% of capacity. Let's remember this claim as I will be returning to it. The article then went on to claim:

- "The REFIT scheme is funded through a public service obligation (PSO) levy which appears on the bills of all electricity consumers. The Government introduced new supports for onshore wind projects in 2005. However, sky-high fossil fuel prices over the past two years have meant, in effect, that there have been no additional costs associated with renewable electricity development".

Obviously they chose to ignore the technical reports on their Public Sector office tables when they wrote that press release to the public. However, Ceauşescu, himself, i.e. Eamon Ryan of the Green Party and Minister for Communications, Energy and Natural Resources, wasn't to be outdone:

- "Developing renewable sources will actually bring down bills for consumers," said Mr Ryan.

It is also worth comparing with the official technical documentation that was on those Public Sector office tables. In the previous book I highlighted the All Island Grid Study Work Stream 4 – Analysis of Impacts and Benefits issued in January 2008 and the modelling study completed by the Commission for Energy Regulation (CER) in January 2009 (SEM-09-002). Both were fudges, the first completing failing to reference costs against a base case with no wind generation, the second did not include the very significant costs of reinforcing the networks and the additional systems costs incurred by the conventional generators. However, it was abundantly clear from both that wind energy costs additional significant sums of money. **The public were being lied to!**

6.2 The Environmental Protection Agency - a Political Body that Lies to the Public on Demand

In late summer 2008 I was working on the Accession of Croatia to the EU and responsible for preparing training programmes related to implementation of the Directives on Industrial Pollution Prevention and Control (IPPC) and the Control of Major Accident Hazards. One of the key challenges associated with IPPC implementation is the compliance of Large Combustion Plants, which are responsible for supplying the majority of the EU's electricity. Reviewing what the various Member States were planning for their electricity supply systems I was shocked and stunned when I started to review the Irish System and the out of control Wind Energy Programme, which was then for a 33% renewable energy target.

I believed I was tax resident in and a citizen of a Liberal Democracy and as an educated specialist in this area I should access the democratic process. So in my own time I prepared an eleven page document "Ireland's Energy Cul de Sac", I even submitted it in October 2008 to the Joint Oireachtas[11] Committee on Climate Change and Energy Security. Did it make any difference, I never got any feedback other than that the Government raised the target for electricity from renewable energy sources to 40% by the end of that month.

I'm determined by nature and kept writing away, at this stage with some guidance and comments from some colleagues who worked with me on the EU Technical Assistance projects in the Accession States. By the end of April 2009 I had a book prepared, which I called "Ireland's Choice: EU Environmental Policy or Green Economy". The timing was fortunate as a call for Submissions went out at that time from the same Joint Oireachtas Committee on Climate Change and Energy Security relating to meeting Ireland's electricity needs post 2020. I duly submitted my Book and supporting documentation on the 14th June, well in advance of the 6th July deadline. It was clearly stated on the call that:

- "Submissions received will be posted on the website".

At the end of June the Irish Academy of Engineering had also prepared their Submission, entitled "Review of Ireland's Energy Policy in the Context of the Changing Economy". In fairness to the Academy they had also produced an excellent document as a Submission to the Government's Green Paper on Energy Policy in 2006, which warned against "refuge in fanciful solutions instead of policies that result in electricity prices that are well within the EU range and trending positively". It was completely ignored by the Administration. With the publication of their new report in 2009 some media coverage occurred in Ireland in the end of June, such on the 25th June and again as headlined on 2nd July in the Irish Independent:

- "Ideology is driving our energy policy instead of economic reality – prices will have to rise in order to pay for our aspirations on renewable energy".

[11] Oireachtas is the Irish Parliament

They quoted the Academy calling “for a halt on a proposed €30 billion spend on the national energy infrastructure so that a proper assessment of future energy needs as well as the economic benefit of the massive investment in renewable power could be addressed”. The obvious was stated in the article: “It is a damming indictment of our energy policy that no such study has been undertaken”. Well and good, but what was happening at the same time was shocking. On the 29th of June, Dr Mary Kelly, Director General of the Irish Environmental Protection Agency (EPA) wrote an article in the Analysis section of the same paper entitled “Going Green is the way to our future prosperity”, complete with a selection of wind turbines to garnish the text.

- http://www.independent.ie/opinion/analysis/going-green-is-the-way-to-our-future-prosperity-1795419.html

Suitable Wind Turbines used to garnish Article by Dr Mary Kelly Director General of the EPA on 29th June 2009.

The article was clear in that the only business game in town was ‘Green’, jobs a plenty were present in this new Green business model and the costs of renewable energy and the resulting job losses were never mentioned, in particular the conclusions drove home the message:

- “Our vision should be an Ireland of the future, thriving on the success of a green, low-carbon economy, not simply because reducing our impact on the environment is something we must do, but because green jobs, green technologies and renewable energy innovations are recognised as the foundations of our future prosperity”.

On 3rd July I e-mailed the EPA with regard to the article and particularly "green jobs, green technologies and renewable energy innovations are recognised as the foundations of our future prosperity".

"Personally I would like clarification on what is meant by this. In particular in the light of the attached submission of mine and that of the Irish Academy of Engineering to the Joint Committee on Climate Change and Energy Security: http://www.iae.ie/news/article/2009/jun/15/review-irelands-energy-context-changing-economy/ . The above may be news to Dr Kelly but I would like to see some figures on how "Green Jobs, Green Technologies and Renewable Energy Innovations" are actually going deliver in terms of sustainable employment, economic competitiveness and meeting environmental targets for greenhouse gases, nitrogen oxides, particulates and other parameters such as the Landfill Directive. I would also point out that unquantified statements such as in her article cost jobs and livelihoods in Irish industry for no environmental gain".

Some explanation is due here. The EPA was established under the EPA Act of 1992 as a non-political institution and while its primary role is in the licensing of industrial facilities to integrated pollution control standards, it also has a role in the provision of support and advisory services for the purposes of environmental protection to other public authorities and the dissemination of information on the environment to the public. In her statement Dr Kelly stepped outside of the legislative basis that governs the role of the Agency, signaling to me and others who have invested considerable time and effort in Irish industry a new direction based on political rather than scientific considerations, not to mention deliberately misinforming the Irish public of the true facts that had been accurately addressed in the submissions mentioned above to the Joint Oireachtas Committee.

I got no reply to my e-mail, which really annoyed me as the EPA would have an industrial company immediately censured for non-compliance if it was found they had not addressed a complaint and request for information from the public. After three weeks I followed it up with a further more hard hitting e-mail, which was copied among others to the Private Office of the Taoiseach (Prime Minister) and American Chamber of Commerce in Ireland. On the 30th July I received the following reply:

Firstly, let me acknowledge receipt of your e-mail and attachments received in this office on 3rd July 2009 stating your views on the EPA and in particular on an Opinion Piece by Dr Mary Kelly, Director General of the EPA and published in the Irish Independent of 29th June 2009. Your second e-mail of 25th July 2009 is also acknowledged. As you will be aware the EPA has a wide range of statutory responsibilities including the licensing of large industrial facilities, which it carries out on an ongoing basis. The responsibilities of the EPA also extend to the coordination of environmental research in Ireland, including research into environmental technologies. The promotion of sustainable development is an area where the EPA is also active.

It is in that context, and in the context of the requirement and indeed necessity to address the serious issues of climate change and sustainable resource use, that Dr Kelly promotes the concept of green technology and green jobs. These are jobs which have the potential to reduce the environmental impact of enterprises and economic sectors to levels that are sustainable.

Further information about the Environmental Protection Agency can be accessed on our website at www.epa.ie

Yours sincerely,

Niamh Leahy: EPA Media Relations Officer

There is a key point here which will come up again in the manner in which the Irish regulatory system is now operating, i.e. with the phrase sustainable development and one can justify anything!

However, sustainable development is not an arbitrary term which grants unlimited powers in its interpretation. For instance we are now currently at the end of the EU 6th Environment Action Programme, which runs from 2001 to 2010. The 5th Environment Action Programme from 1993 to 2000 defined the Community's concept of sustainable development and started a shift from purely regulatory measures to market led (fiscal) measures – sustainable development being defined as "*meets the needs of the present without compromising the ability of future generations to meet their own needs*". Waste Management formed one of the seven themes and targets of the 5th Environment Action Programme and this led to the Landfill Directive (1999/31/EC). Ireland has significantly failed to meet the 2010 targets set in the Landfill Directive due to repeated refusals of An Bord Pleanala to approve projects in the waste sector that met all the requirements set in the Environmental Acquis. As I highlighted in my previous book and as will be addressed later, the waste to energy (incineration) plants identified in the Irish Regional Waste Plans developed around 2000 were obstructed as this was not seen to be 'Green'. Ireland is facing huge fines for not having implemented this Directive.

The implementation of the Environmental Acquis is the legal process for implementing sustainable development; Green is simply a political ideology. This is why I asked for facts and figures to support the statements relating to her article. However, the EPA refused to provide these, repeating my request on 30th July and 8th August was making no difference. I was getting annoyed and as a tax payer who was paying their wages and seeing them playing political games to put myself and others out of our legitimate right to a job, I was getting fed up. At this stage I was probing the Aarhus mechanism as I knew in theory that it existed, but was only finding out about the Statutory Instrument (S.I. No. 133 of 2007), which implemented it in Ireland. As I had just received an official document relating to Access to Information (AIE) Regulations in Ireland (S.I. No. 133 of 2007) from Dun Laoghaire Rathdown (DLR) County Council, I included it in another follow up on the 25th August with the comment:

- Surely the EPA knows more about Aarhus requirements than DLR?

Got no reply from that as well!

However, the guidance document from the Department of Environment, Heritage and Local Government on the Access to Information on the Environment (AIE) Regulations is clear in that Public Authorities:

- Consistent with other provisions of these Regulations, maintain a presumption in favour of the disclosure of environmental information, and seek to respond positively and promptly to requests.

- Should offer assistance to members of the public to enable them to formulate requests.

What is even worse is that since then I have come across the following correspondence dated 18th June 2008:

In relation to the AIE regulations, the EPA uses a similar structure to that which was set up under the Freedom of Information Acts i.e. a number of delegated decision makers/information officers have been nominated throughout the organisation and deal with requests as and when they arise. If you have any further queries or would like to discuss any aspect of the regulations please call me at the number below.

Kind regards

Karen Vaughey
Freedom of Information Officer, Environmental Protection Agency

The bottom line, if you request the information they have prepared to give you, well and good.

- **However, if one comes in what the hard questions when it is it clear that they are disseminating political information and not correct information on the environment, then the EPA has no hesitation in breaking the law and refusing you your rights.**

6.3 The Oireachtas – Breaks Laws to Suit

After the Submissions to the Joint Oireachtas Committee on Climate Change and Energy Security closed to the 6th July I expected to see them, including mine and the Submission from the Irish Academy of Engineering, posted on the website of the Oireachtas (Parliament) as was agreed in the terms of the call for submissions. Wrong! It never happened. A month later on the 8th August I contacted the Clerk to the Committee by e-mail and found they wouldn't be posted until the Committee had finished its report on the Submissions. When would that be? No Reply. At this stage I was really annoyed, so much for the Aarhus Convention and Access to Information on the Environment and Public Participation. As I wrote back to them on the 12th August and the 17th August including:

- "It is increasingly evident that the Irish Political system considers itself a 'law onto itself'; this is not the case, we have a legislative framework that must be respected including the Aarhus Convention with respect to Environmental Policy".

I was wasting my time!

There were other issues occurring in the global environment at that time, namely the banking collapse. The German banking crises (Hypo Bank) had been caused by the completely inadequate regulation in the International Financial Services Centre (IFSC) in Dublin of two German operations there (Defpa and Sachsen LB). The German taxpayer was incensed, these banks had left Germany to escape proper regulation and paying taxes, now he was going to have to pay massively to bail them out. Given that Ireland was in the Euro zone, he was also going to have to pay if Ireland was completely mismanaged, such as with a €30 billion plus win energy programme. So on the 26th August I again e-mail the Oireachtas Committee copying some German contacts.

“Today lads and lassies were are going to move away from Conas ata tu and an Oireachtas full of Muinteoirs[12] who believe they are a law onto themselves to (rein) Eurospeak.

It would be assumed at this stage that yourselves are now getting familiar with issues related to Access to Information on the Environment, Public Participation and Access to Justice (Aarhus Convention). It is unfortunate that unlike all other 26 Member States and many of the candidate Member States this legislation is not on the Irish Statute Books but a verbal agreement was made to the Commission by the Irish State some years ago, recorded in writing and used to confirm to the UN that the EU had ratified the convention.

My book "Ireland's Choice: EU Environmental Policy or Green Economy" that formed a key part of the relevant submission will never be a best seller. However, a significant portion of the people who have read it to date complimented me on it and in particular on the highly useful insights it gave to them. It is a pity that while Submissions were closed on the 6th July and there was no reason as to why they could not have been available to read on the website by early the following week except for Muinteoir politics. I was also interested to see a copy of the Submission of the Irish Academy of Engineering on their own website saying much of the same 'stuff' as myself, an enormously expensive wind energy programme that must be halted and a requirement for an Energy Policy that was based on technical and economical fundamentals and not driven by Ideology. The billions of Euros that are involved are just frightening and one's sense of unease is only heightened by the fact that your Committee is denying access to the relevant information that has been submitted on this call for Submissions, plus the fact that as I have clearly articulated in my 'book' the public have never been told the true costs, environmental impacts, benefits and alternatives to this programme. Indeed they have unfortunately in official Government Documentation been told false technical information with regard to the alternatives.

With regard to German as opposed to Irish Citizens who have had to receive their copy of the 'book' to date from me, they are as German citizens covered by the full terms of Aarhus but does that mean that when they come to Ireland? I will leave those type of issues to those who are more professionally qualified in that area (Rechtsanwalten u.s.w.). Anyhow, naturally given what has happen in the last few months in the Irish financial circles, Otto Verbraucher has now a quite jaundiced view of possible connections between his tax payments and certain circumstances that appear to quite regularly occur in Ireland, a concern has already been expressed along the lines as to 'So viele Millarden, mussen wir immer fur die Blodheit in Irland zahlen'. No disrespect to the Germans and the Schwabians in particular, it is not a question of being tight, getting value for money is a core principle I believe in.

[12] Muinteoir; the Irish (Gaelic) word for a teacher. This profession dominate Irish politics, in March 2010 six sat at the cabinet table.

So where to we go from here? To me it is clear that not only has the Oireachtas shown no effort in order to reform our Access to Justice so that Aarhus can be ratified formally by the 27th Member State, but that it does not as clearly demonstrated by this documentation provide even proper access to environmental information. Does that mean that the verbal agreement that the Irish State gave to the EU Commission that was recorded by them is not worth the paper that it was written on? As I am only by qualification a simple engineer I will leave that argument to others who are more professionally qualified in that area!"

At this stage some like minded individuals and fellow professionals also tried to request access to the information on e-mail and informed me that they had got an auto-reply from the clerk of the committee stating that he was 'out' for over six weeks. This was the truth:

- "I will be out of the office starting 14/08/2009 and will not return until 30/09/2009".

So I rang the Committee on 18th September and spoke to Alan Finnerty, explained my name and requested as to why the Submissions to the Climate Change Committee were not posted on the Oireachtas website. He immediately started to say he did not know and would call me back – I said this was inadequate and requested the name of his boss. He refused saying he did not know the name of his boss and hung up!

The only reply I got was on the 21st September by e-mail stating once again that the Submissions would be posted when the Committee had finished their report. So I sent in a formal request for information under the AIE Regulations (S.I. No. 133 of 2007) to strengthen the fact that I had already been highlighting Aarhus rights for some time. On the 27th September I decided to get tough, e-mailing again correspondence I was having with the EU Commission (DG Environment Unit A.2 Compliance promotion, governance & legal issues) and summing up where the officials in the Joint Oireachtas Committee stood.

- *"You can address the legal exposure that relates to your current behaviour in obstructing the dissemination of the Environmental Information that was submitted before 6th July by posting the submissions on the website. Note: While I would clarify that my book "Ireland's Choice: EU Environmental Policy or Green Economy" that formed the bulk of my submission will never be a 'best seller', shall we say it is a good training manual and already I have had some good feedback from as far a field as Australia and the USA.*

- *You can provide me with the names and positions of the individuals who are obstructing the publishing of these submissions on the website, i.e. your boss(es) as I requested.*

- *Do nothing and go deeper into 'cherry picking' of the relevant legislation.*

- *It's your choice but as you are already more than a week in breech of the relevant legislation you would better make your mind up quickly on which step you take".*

On 1st October I was informed:

- "*The Joint Committee on Climate Change and Energy Security met yesterday and agreed at that meeting to publish the submissions received in relation to Ireland's Electricity Needs post 2020 on the Oireachtas website*".

In reality if one reviews that Submissions that were posted on the website they fall into two categories (a) business plans to cash in on this renewable energy bonanza and (b) the two Submissions from myself and the Irish Academy of Engineering pointing out how deeply flawed the programme was and how it should be stopped, i.e. how our energy policy was based on ideology and not sound technical fundamentals. However, when the Committee on Climate Change and Energy Security did finally come with their report on 2nd December 2009 (http://www.oireachtas.ie/viewdoc.asp?DocID=13598&&CatID=36) it was about exploiting wind resources and ocean energy:

- "The Committee will draft concrete proposals for the provision of public support for the development of ocean energy, by way of direct funding, tax-based incentives, additional R&D support, and feed-in tariffs to ensure that it is a viable power generation option by 2020."

Note a feed in tariff of €220 per MWh (22 cent per kWh) had already been announced in February 2008 for ocean energy at the same time as that of €140 per MWh (14 cent per kWh) for offshore wind, nasty as every time that electricity generated came on line conventional plants generating at €50 per MWh would be shunted off the grid. In fact I could also say with regard to the report was that if a first year student in University had produced it he / she would never have got into second year. There was no consideration given to the technical content that was submitted, only a review of 'how many said what' and if more said (a) than (b) then of course (a) was perfectly clear as the way forward. All I do is remind you of Warren Buffet's saying highlighted in Section 5.9 and ask:

- **Is there any other country in the world where the Administration develops an energy policy in which it point blanks refuses to address the issues raised by its engineering profession and instead does exactly what they recommend it should not do and does so without providing any justification to the public?**

So much for Access to Information on the Environment and Public Participation, one might as well have sent in a roll of toilet paper!

6.4 Inappropriate Business Opportunities – Associated Lies

There is no doubt that ignorance is bliss or what you don't know doesn't worry you. Let me tell you is not pleasant seeing the consequences of this dysfunctional administration and its ideology – the inappropriate business opportunities that the taxpayer and electricity consumer will have to fund with massive financial support for essentially no benefit. The sums are simply frightening and the juggernaut is increasingly out of control.

For instance as was reported in the Irish Times on 12th October 2009:

"*A report from wind turbine manufacturer Siemens in recent weeks, calculated the value of proposed European wind farms over the next 25 years to be more than €300 billion.*

Proposed Irish offshore wind farms included in this calculation were:

- *Clogher Head Oriel Wind Farm, which projects 330 MW;*
- *Dublin Array Saorgus Energy, offering 725 MW;*
- *Proposal from Codling Bank Fred Olsen/Treasury Holdings would add 1,100 MW;*
- *Airtricity is offering 500 MW through its Arklow Bank 2 project;*
- *Na Sceirde Fuinneamh in Co Galway is projecting 100 MW.*

Based on calculations by Siemens that it costs in the region of €3 million per MW to install wind generation, Irish members of Now (National Offshore Wind Association) would account for a potential investment of almost €7 billion".

However, if we are forking out these huge sums of money somebody else must be raking them in – simple isn't it and they must be very pleased to have it that way and will try and ensure 'long may it continue'.

As the Irish Academy of Engineering stated with regard to offshore wind, solar generation, wave and tidal generation and liquid bio-fuels, all technologies that are currently a decade or so away from commercial viability: "Countries that are investing in these technologies are usually aiming to develop associated large manufacturing industries (Germany, Spain and Denmark for example)". It's the same old story; it is a pyramid scheme which will keep on running so long as there are fools to buy the equipment. Selling the equipment is where the money is made!

As far back as 2001 some 12,000 Danes were employed in the wind turbine industry, with 75 to 80% going to export, a billion Euro plus export business. Little wonder around the same time at an Exhibition in Dublin to promote Danish environmental technologies it was being pointed out that Danish exports in this sector easily exceeded their agricultural exports. The Danish Government was naturally doing everything to promote this national money spinner. Recently the main wind manufacturer in Denmark, Vestas, was employing 19,000 there.

As a colleague in the UK who has worked with me on EU Technical assistance projects wrote:

- "I have recently watched a lot of Euro news on the TV and kept seeing the lady Minister for the Environment in Denmark. She said that Denmark had a 30 year history of dealing with renewables. This had become very popular in the country because it created jobs. No mention whatsoever was made that all this effort over 30 years had reduced the carbon dioxide emitted by x%!"

As engineers and scientists it is simple, neither Denmark nor Germany has reduced their overall use of other fuels or their greenhouse gas emissions because of wind power. However, things were getting a bit down and dirty. In August 2009 an Irish Times journalist went on a 'junket' to Denmark and on 4th September printed an article 'Horizons of Change'. It was stated:

- "Over 5,500 wind turbines are now operating in Denmark, supplying more than 20 per cent of the country's electricity demand".

As I have dealt with previously in Section 5.3 of this Book, this is false. A considerable percentage of subsidised Danish wind energy is dumped onto the surrounding grid.

- "Energinet.dk, which runs Denmark's national grid, exports cheap wind-generated electricity to both Norway and Sweden when the wind is blowing and imports more expensive hydro or nuclear-generated power when it's not".

I can only reprint the power generation costs that I had previously in Section 5.2:

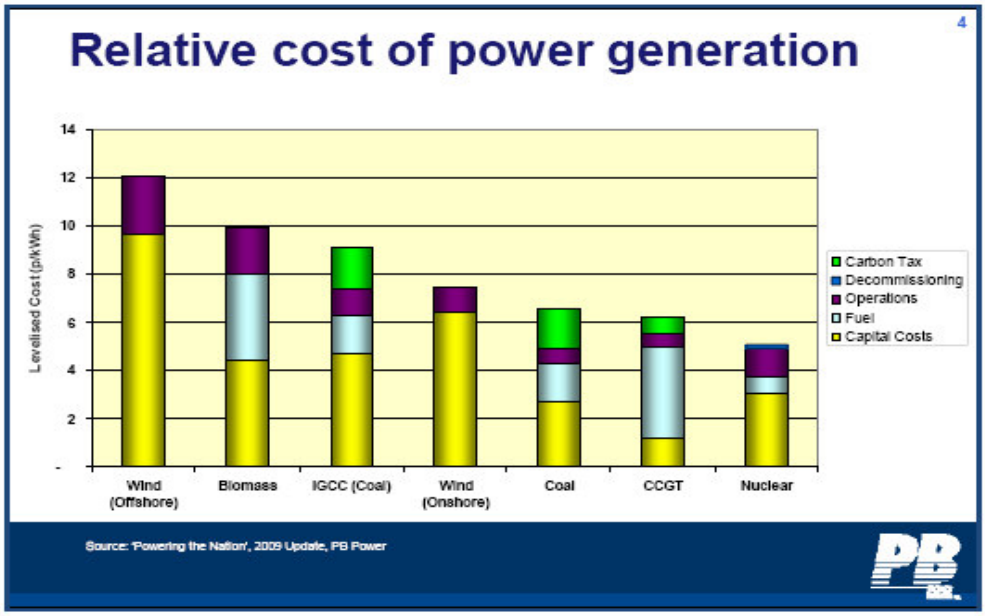


Fig. 1.4 - Source PB Power, 2009 update. Based on CO_2 costs of €20 per tonne

Taken from Irish Academy of Engineering Submission to Joint Oireachtas Committee on Climate Change and Energy Security: July 2009. Costs include penalties for carbon dioxide emissions (IGCC – Integrated Gasification Combined Cycle; CCGT – Combined Cycle Gas Turbine).

Note: This does not even include the fact that one needs a totally duplicate system for when the wind doesn't blow. Where would Denmark be without the hydro-electricity and nuclear power from neighbouring countries that it was printing false information about?

So I contacted the Danish Embassy in Dublin referring to the above article in the Irish Times that was being used, as had occurred on other occasions, to boost Danish equipment exports and referencing the correct data in the Renewable Energy Foundation report and the Submissions of myself and the Irish Academy of Engineering to the Joint Oireachtas Committee. A resulting e-mail ping pong ensured with Jesper Skovmøller of the Danish Embassy on the 9th and13th September which lead me to conclude:

"*It is very clear to date that the Kingdom of Denmark has no objection to the article as published in the Irish Times and indeed has not provided any facts and figures as to why the technical content referenced above in the three bullet points is false. If such additional facts do exist then under the Aarhus Convention the Kingdom of Denmark should provide them. If they do not exist then it would be expected that the Kingdom of Denmark take the necessary steps to ensure that the Irish Public and all those to whom Danish Wind Energy products are sold are fully informed of the true costs, benefits and alternatives available for generation of electricity and reduction of carbon emissions when these systems are integrated into a National Grid, i.e. their grid to which it is being sold to and for which they must compulsory purchase the turbine output*".

On the15th September Henrik Rée Iversen the Danish Ambassador in Dublin stated to me by e-mail:

"As you may know energy efficiency has for a long time been a central element in Danish energy policy, and we have had some success in this field and thus been able to lower our consumption of and dependency on fossil fuel. Efficiency is however not longer sufficient to cope with the increasing problem of global warming. Renewable energy sources therefore more and more have become a very central point in the Danish energy policy. Especially wind power has been and still is an increasing success for Denmark. Not only has the industry created jobs, positive export figures and a new structure of the energy sector in Denmark but also with regard to decreasing the green house gas emissions has the use of wind power proved to be interesting indeed. It is probably true, that wind energy still has some problems in being competitive with fossil energy if you only look at the actual costs of today. Having said that we all know that fossil energy is a very scarce commodity and causing increasing environmental problems. The Danish emphasis on wind energy and other renewable energy resources is therefore also to be seen as an investment in the future, and we have indeed been very successful in bringing down the costs of wind energy making this technology extremely promising.

In Denmark wind generated energy is thus regarded as an important part of the Danish economy and as part of the solution for the current climate and energy challenges facing us.

From our mail correspondence I understand that we maybe have different views on renewable energy and wind power. This, of course, is fully legitimate and I very much hope that my more general comments have helped to explain the Danish position, a position I also think is fully legitimate and not without interest for the future of our common planet".

An outright refusal to answer the Aarhus request relating to facts and figures to support what was stated on behalf of the Danish wind industry in the Irish media. However, he wasn't the only one at this game.

The Arklow Bank turbines – passing by them in a Yacht Race in June 2007 there wasn't enough wind to turn them. In June 2009 in the same race it was clear that two of the seven had failed and were not turning. Wind is for racing yachts where the aim is to stay ahead of the other crew.

The Arklow Bank project comprising seven turbines located 10 km off the Irish East Coast was one of the world's first offshore projects to use giant wind turbines exceeding 3 MW. It was installed in 2004. A project of verification of the project was initiated in October 2006 at the TU Delft in cooperation with Professor Martin Kühn of the University of Stuttgart, one of the designers of the project. Yet no data on actual performance has been published. Indeed the Wind Energy Department of the University of Stuttgart has not a single publication on the basic economic performance of these off-shore designs in the three years of technical publications listed on their site. Given as was highlighted at the beginning of this section that billions of Euros are to be invested in more (German) offshore wind turbines, I considered it appropriate that members of the public should know how the seven trial units installed since 2004 are actually performing, after all where did Minister Ryan get his 40 to 43% availability mentioned previously in Section 6.1?

If we consider engineering ethics, such as from the VDI in Germany (http://www.vdi.de/fileadmin/media/content/miv/FundamentalsOfEngineeringEthics.pdf), there is a clear requirement for engineers to address the economic, environmental and safety aspects of their technologies and to provide information to the public on their technology solutions and other alternative solutions. I contacted the University of Stuttgart on this issue on the 30th January 2009 but they have so far declined to comment and reply on the actual generation figures for the Arklow Bank project. Amazing given that it was the University of Stuttgart, which was responsible for developing the VDI (German Engineering Association) code of ethics. The German Embassy in Dublin was also contacted in 18 March 2009 with the same correspondence, they too have not replied (see Attachment 3). On 7th September 2009 I again contacted the Germany Embassy in Dublin this time by registered mail making it clear it was a request under the Aarhus legislation. It was ignored.

If we take the Irish East Coast, there is a sandbank stretching nearly the whole length from the Tuskar Rock on the South to the border with Northern Ireland. It is being looked at with glee by the developers of the offshore wind industry, particular given the €140 per MWh tariff announced under the REFIT scheme. We of course will be paying for it, as to how the units that have been there since 2004 are performing, you might as well ask the Pope about the secret of Fatima. However, he is not subject to Directive 2003/4/EC on Access to Information on the Environment. In fairness and as you can see from Attachment 1 the EU Commission agreed on 6th October to raise the issues concerning the Danish and German Embassies with the Member State Authorities concerned and I am awaiting to hear back.

6.5 The Department of Communications, Energy and Natural Resources (DCENR) – Operating outside the Legislative Basis

On 22nd September 2009 I requested the following information from DCENR under Aarhus (S.I. No. 133 of 2007):

- *The Strategic Environmental Assessment for the Renewable Energy Programme.*
- *What was the pricing basis and justification (e.g. kg CO_2 per cent) for the renewable tariffs (14 cent per kWh for offshore wind, etc), in other words costs, benefits, alternatives, principle of proportionality.*
- *Specific details on other alternatives, such as generation using renewable sources like anaerobic digestion, waste to energy (incineration), heat pumps, it would be nice to have it in a format such as the ExternE or at least in kg CO_2 per cent per kWh.*
- *The 2006 Green Paper on Energy Policy. Who wrote this, in particular the section on Nuclear Energy? What was his / her qualifications, I require the technical supporting documentation to the section on nuclear.*
- *Who signed off on the Renewable Energy Programme both at Department level and at Ministerial level?*

They failed to reply back to me with the details above other then on the 21st October from Una Dixon of the Renewable Energy Division, who stated:

- "The Government's White paper 'Delivering a Sustainable Energy Future for Ireland – the Energy Policy Framework 2007-2020' was published in March 2007. You will see that the White Paper contains forewords from the then Taoiseach Bertie Ahern as well as the Minister for Energy Noel Dempsey".

A number of e-mails bounced back and forth in October and November in which the DCENR refused to reply. The fact that the Head of State and Head of Government were informed of these non-compliances didn't make a jot of difference. Then on 11th December the Office of the Commissioner for Environmental Information accepted an appeal (CEI/09/0016), for which I made a Submission on the 19th February 2010 on their request and their investigation is under way.

Directive 2003/4/EC (Aarhus - Access to Information on the Environment) has clearly been completely ignored by DCENR. This Directive requires the Administration to provide active and systematic information on the environment to the widest systematic availability; this includes information on energy and cost benefits and other economic analyses. This clearly has not been complied with nor did they comply with a relevant information request for this data.

Furthermore where an Environmental Impact Assessment needs to be considered for a project, which it does for wind farms, then the administration is legally obliged to complete a Strategic Environmental Assessment for the relevant programme according to Directive 2001/42/EC. A Strategic Environmental Assessment must document among others the impacts on the population, i.e. socio-economic issues and give a description to the proposed alternatives to the programme. Furthermore public consultation is mandatory in the preparation of these reports. It's very simple really; Government can't go around pulling it out of a hat and feeding huge sums of money to political 'friends'. Despite it being a legal obligation to prepare and disseminate this information to the widest systematic availability, it is clear that the cost / benefit data and Strategic Environmental Assessment for the Irish Wind Energy Programme were never prepared.

With regard to the fourth question nuclear energy is a core component of EU energy policy, indeed the Euroatom Treaty dates to the same period as the Treaty of Rome, all Member States are signatories to this Treaty, which is still in force. The section on nuclear energy of the Irish Government's Green Paper on Energy 2006 (page 56) is technically false and in total variance to the submission of the Irish Academy of Engineering to this Green Paper. The relevant points that are false being:

- "The addition of a large baseload nuclear unit onto a small island market with limited interconnection would not be desirable from either a system reserve or running regime perspective (typical size of circa 1,600 MW)". False: Fifteen plants of 700 MW or less are currently under construction, to be completed by 2012, which would fit the Irish grid without any integration problems. New designs of 10, 25, 165 and 335 MW are being developed. Even the implications of 1,600 MW of a base load nuclear plant on the Irish grid pale into insignificance in comparison with the integration of our current wind energy capacity.

- "The problem of nuclear waste disposal in general remains unresolved around the world". False from a technical perspective (see previous book) and now also from a political perspective in Finland and other countries like Sweden.

- "Whilst fears of terrorist action have increased". False for some people, true for others. Fear can be generated by irresponsible or mischievous statements, anybody in dire need of a swine flu vaccine?

No Chartered Engineer with experience in designing electricity grids would have put his signature to the section in the Green Paper; it would have been a breach of professional ethics. However, one could always get somebody who is not a chartered engineer with the relevant experience to write it. However, there has to be accountability, in particular given that the citizen has to pick up the enormous cost involved. Spin cannot be written by nameless officials of the Irish Administration and disseminated to the Irish Public as authoritative facts relating to compliance with the Environmental Acquis, particularly as has been already mentioned with regard to the Charter of Fundamental Rights, the Union is now exposed to enormous financial damages. Hence the basis for my last two questions in my request for information to DCENR.

6.6 The Industrial Development Authority (IDA) – The Lies Continue!

On 5th December 2009 the Irish Times carried the following statement:

- *With some of the best wind and wave resources in the world, Ireland is ideally placed for the development of green and clean technology, according to Barry O'Leary, chief executive of IDA Ireland".*

- *"Onshore wind turbines could account for 35 per cent of our energy needs and Ireland has the highest wave energy resource in Europe," O'Leary writes in the current issue of Heritage Outlook, the Heritage Council magazine. In the article, he cites local and international businesses that are currently developing and testing wave energy prototypes, suggesting that, in the long term, Ireland could become a net exporter of green energy.*

The IDA failed to respond to the request instead writing to me to explain on the 15th December that the article was misquoted from other publication "*in which the potential of Ireland as a source of wind power is clear. The capacity factor for onshore wind turbines – the measure of the time the turbine is actually cranking out power – 35% in Ireland. This compares with a European average of 25%"*

I confirmed that my original request stood and it was only natural that this could be clarified in terms of:

- The economic impacts of the wind energy programme;

- Its costs;

- The subsidies required for job creation and industrial grants;

- The resulting electricity prices;

- The loss of competitiveness in other manufacturing sectors and resulting job losses;

In particular given that the IDA is the State Agency responsible for industrial development and the Chief Executive of the IDA was clearly making public statements promoting the **potential** of Ireland as a source of wind power.

Note: While I was sent a letter on the 17th December that had allegedly been sent to the Editor of the Irish Times in order to correct the original article, repeated checking of text in the Irish Times related to the IDA never revealed any corrections and clarifications. Therefore as far as the Irish Public is concerned what reflects the position of the CEO of the IDA is:

- "*Onshore wind turbines could account for 35 per cent of our energy needs and Ireland has the highest wave energy resource in Europe".*

The IDA did reply on the final date of the one month statutory period (IDA/001/AIE) to clarify that they had none of the information I had requested available. I then requested an internal review, which was completed but failed to discover any of the information I had requested. I then paid my €150 and the Commissioner for Environmental Information accepted an appeal (CEI/10/003) for which I made a Submission on the 25th February and an investigation is now under way.

All of us in the engineering profession know that the impact of soaring electricity prices on industrial development in the State is going to be devastating. The Irish Academy of Engineering in their June 2009 Submission stated:

- "Targets such as 40% of Ireland's electricity generation from wind by 2020 will only be achieved at an unacceptably high economic cost for industries in competitiveness terms".

The IDA are that Authority for Industrial Development, where were their figures? All they could do was to highlight in their replies of 12th January and 1st February that:

- "IDA Ireland will work to repeat its success in other sectors to attract mobile foreign direct investment in the Clean Technology sector to Ireland".

- "IDA Ireland is obtaining regular information from reliable sources including the Department of Communications, Energy and Natural Resources, Eirgrid, ESB, SEI, Minister Ryan's Green Report and other Government Policy Documents".

Given the above and the statements disseminated to the Irish Public I completely fail to understand why my simple request for information couldn't be answered. I mean it can't all be just spin that has no factual basis that is being disseminated to the Irish Public to achieve a political objective?

What is even more disturbing is as an engineer I completely fail to understand where "*the measure of the time the turbine is actually cranking out power – 35% in Ireland. This compares with a European average of 25%"* came from. It must have come from some of the reliable sources quoted above from the letter of the 1st February. However, if one considers Section 4.4 (e) of the Eirgrid Generation Adequacy Report 2009 – 2015, which was published in December 2008, then one gets some nice text and the graph below:

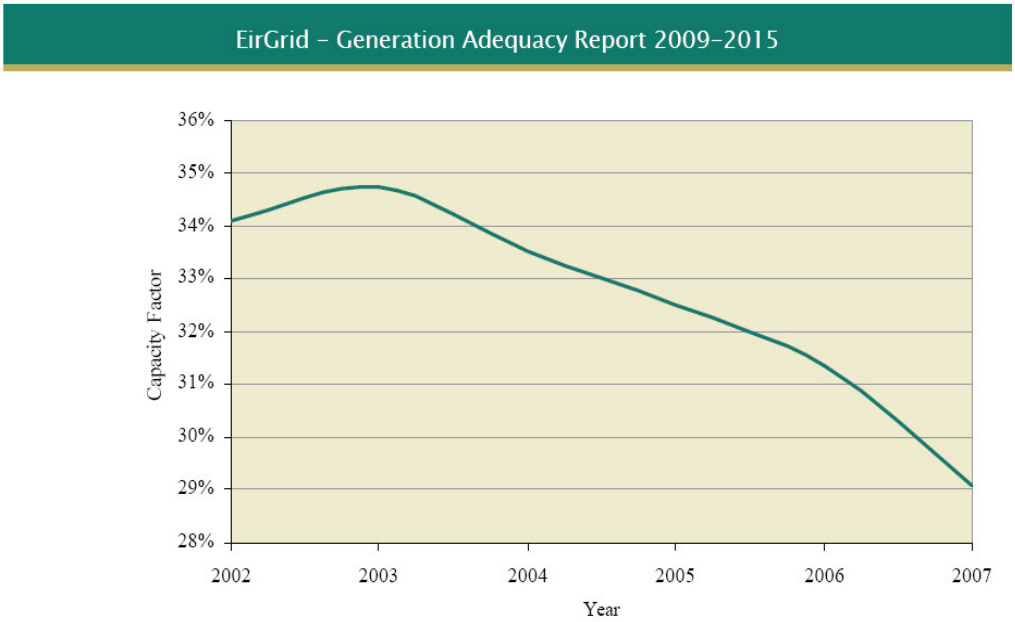


Figure 4-7 Average capacity factor for installed wind capacity.

From Section 4.4 (e) of Eirgrid Generation Adequacy Report 2009 – 2015:

Furthermore Eirgrid in their latest Generation Adequacy Report published in December 2009 acknowledges that 2007 was a bad wind year and proposes an average Capacity Factor of 31.2% for future calculations.

- http://www.eirgrid.com/media/Generation%20Adequacy%20Report%202010-2016.pdf

Indeed the Eirgrid data for the winter 2009/2010 shows a Capacity Factor of 24% and the winter is when the strong winds occur.

So why can't the IDA with all their technical resources and interfaces to other Government Departments and Public Bodies answer some very simple questions related to statements their Chief Executive made? Why are they clearly using false information relating to wind turbine availability? What is the technical basis for the press releases they are writing, which clearly are of enormous significance with regard to legal obligations under Directive 2003/4/EC relating to dissemination of information on the environment to the widest possible systematic availability?

6.7 Eirgrid's €4 Billion – No Comment to Questions Asked?

In response to the Government's policy of setting a target of producing 40% of Irish electricity from renewables by 2020 Eirgrid has produced a plan for grid investment (Grid 25) costing more than €4 billion to accommodate total transmission demand. A significant portion of this cost arises from the requirement to connect very large quantities of wind generation.

- http://www.dcenr.gov.ie/Press+Releases/2009/The+Green+Economy+is+here+%E2%80%93+Minister+Eamon+Ryan.htm

Eirgrid even have a wonderful Mission Statement:

- "Eirgrid's mission is to develop, maintain and operate a safe, secure, reliable, economical and efficient transmission system for Ireland".

In late 2009 I became aware of the Poyry report of July 2009, which I mentioned in Section 5.7 and which showed the devastating impact the Wind Energy Programme if allowed to go to completion would have on electricity prices and renewal of power plants. So on 4th December I sent in a request for information under S.I. No. 133 of 2007 relating to the official response of Eirgrid to the Poyry report, which **as was clearly stated in Section 1.1 of the report Eirgrid participated as a founding member**. By the 23rd December I had no reply so sent in a reminder. Eirgrid then tried to contact me by phone to say they had a 'Poyry' report due in a few months time and they would send me a copy. So what happened next was pure farce. I would write to them, such as on the 24th December, again on 5th January, yet again on 6th January that clearly it was the July 2009 Poyry report I was referring to and explaining the reasons why, the final one copying the EU Commission among others. They would reply discussing the other report. Finally I got a reply on the 6th January from Michael Kelly of Eirgrid that admitted the July 2009 report:

"Apologies. There seems to have been a misunderstanding on my part. The Poyry study I have been discussing is a study of generation portolios in the future due to publication this year. In relation to the Poyry intermittency study, which is not an EirGrid study, we hosted a discussion meeting on that subject earlier this year under our facilitation of renewables work and will be happy to invite you to further seminars or workshops on the subject of renewables".

So I exercised my right to an appeal on the 13th January as prescribed in Articles 11, 12 and 15 of SI No 133 of 2007. By the 15th February I had no reply so I contacted them again along with Minister Ryan's office at the DCENR. Lo and behold I got the following reply:

"Your communication in relation to the Poyry Report on Wind Energy refers.

Your request has been considered and we believe you are asking for our "official comment" in relation to this matter.

The report in question is one by Poyry and is not our report and we have no further official comment.

Further, if the request is for us to make a comment now, it is my belief that that is not a request for "Environmental Information" as defined in Article 1 of the directive.

I would be delighted to discuss this matter on the telephone to explore any ways in which we can assist you.

Yours sincerely,

Michael Kelly

Communications Manager, EirGrid"

So yet again I paid my €150 and lodged an appeal with the Commissioner for Environmental Information. Given the significance of the Poyry report in July 2009 to the Wind Energy Programme and the legal obligation with regard to Directive 2003/4/EC to provide active and systematic information on the environment to the widest systematic availability, which includes information on energy and cost benefits and other economic analyses, I had requested Eirgrid to provide their comments and response to the report, which they refused to do so. I accept that internal written correspondence between various staff members may not represent Eirgrid's views but within any organisation there is official correspondence and conclusions / recommendations. For instance I consider it completely unacceptable that they admitted they hosted a discussion meeting on the subject under their facilitation of renewables workshop yet no documentation relating to this is available under an AIE request. What other meetings and reviews were held in which the contents of the Poyry report were raised?

It is simply not acceptable for Eirgrid to deny access to information and fail to comply with the procedures specified in S.I No. 133 of 2007. The public has a right to know how much their electricity is going to cost given various Government programmes related to EU Directives in the Environmental and Energy spheres, what the money is going to be spent on and what the various alternatives are. When a public body participates on a study which clearly shows that electricity prices associated with their strategic plans are going to soar by at least €2.9 billion per annum – to state 'No official Comment' so they can deny you a justification of their position and go ahead and spend a tidy €4 billion is simply a complete abuse of the principles of the Aarhus Convention.

Currently the Commissioner for Environmental Information is completing her investigation of Eirgrid (CEI/10/0004). All I can say is read Eirgrid's mission statement about the economical transmission system and if you want to know more you can call Michael Kelly their communications manager in Dublin at 2370310.

6.8 The ESRI – continuing the tradition of Voodoo economics

There is a joke about the engineer, accountant and economist who were brought one after another into a room and asked what is one and one. The engineer stated that one and one was two but because there were acceptable tolerances in the equipment, etc, a bit above and below didn't matter too much. The accountant asked what was the discounted rate and the timeframe and explained that depending on how long you held on to the two 'ones', it was possible to make a tidy bit above two as profit. The economist came in to the room, looked around suspiciously, drew the curtains and then whispered "what would you like it to be!"

The Economic and Social Research Institute (ESRI) "produces research that contributes to understanding economic and social change and that informs public policymaking and civil society in Ireland and throughout the European Union". The ESRI is a limited liability company. However, it is audited by the Comptroller & Auditor General and is subject to the rules that apply to state organisations in relation to prompt payments, disclosure, risk management and tax clearance. During the height of Ireland's property boom various international organisations, such as the OECD, sent warning after warning on how the economy was dangerously overheated and over reliant on the construction sector. Professor John Fitzgerald of the ESRI, the head priest of Irish voodoo economics, would come on the TV and explain how the growth rate would stay positive for several years and at worst there would be a 'soft landing'.

On the 16th December 2009 he was at it again in the Irish media, with the Irish Times reporting his work: "Answer to our energy needs blowing in the wind – In Ireland substantial reductions in greenhouse gas emissions from electricity generation can be achieved at little cost to consumers if the correct policies are pursued". So I sent in an AIE request to the ESRI asking the same questions of the IDA and the costs and benefits of achieving the same greenhouse gas reductions using the other 10 different renewable technologies.

The usual farce the ensured. Professor John Fitzgerald replied by e-mail on the 18th stating that the ESRI is not a 'Government Body'. So I replied once again restating that the ESRI was a 'Public Body' to which S.I. No. 133 of 2007 applied. This then had to be repeated on the 21st December. John Fitzgerald's reply was simply to refer to his publications on the subject and no attempt was made to reply to the information requested. So the request had to be repeated again on the 21st December. On the 22nd December the Officer of the Commissioner of Environmental Information inquired with regard to the correspondence with the ESRI as to whether it was intended to be an appeal under S.I. No. 133 of 2007. So an appeal was lodged and the €150 paid (CEI/09/0018).

As it turned out in late February 2010 when the appeal was examined by the Commissioner for Environmental Information it was concluded by them that the internal review procedure had not been adequately complied with and as such the matter was outside their jurisdiction, the €150 was returned. In many respects the AIE regulations are a learning curve, indeed when I lodged my first request in the autumn of 2009 I had to contact the Commissioner for Environmental Information from Warsaw, where I was working, as they were only setting up the on-line payments process and weren't sure how it worked themselves. Indeed by March 2010 I had been assigned appeal number CE/10/0004, all four to that date in 2010 having been lodged by myself.

In fact the reporting in the Irish Times was related to three articles published by the ESRI on:

- "Investing in Electricity Infrastructure and Renewables in Ireland" – which can be downloaded from the ESRI website.
- "Investment in Electricity Infrastructure in a small isolated market: The case of Ireland" - Only available from Oxford Review of Economic Policy but copy provided by John Fitzgerald of ESRI by e-mail.
- "The likely economic impact of increasing investment in wind on the island of Ireland": Working Paper No. 334 – which can be downloaded from the ESRI website.

As the abstract for the Working Paper states: "This study measures the effect of increasing wind in electricity generation on the total electricity costs for the Island of Ireland for the year 2020 under a variety of scenarios on fuel and carbon costs, generating plant portfolio mixes and electricity demand growth". Indeed the paper clearly states on page 2 that "this paper considers how the policy target of generating 40 per cent of electricity from renewable sources by 2020 is likely to impact on the welfare of the consumers and producers on the island and on the competitiveness of the Irish economy".

In reality despite the two statements above this information on the competitiveness of the Irish economy is nowhere to be found. Unlikely the Eirgrid report of 2004, nowhere is it clear in the ESRI documentation as to what would be the cost of electricity for different scenarios over the baseline condition of no investment in wind energy and no investment in interconnectors to the UK, which clearly are not required for a fully functioning electricity grid. Neither is it clear as to what the economic costs to the State would be in terms of significantly higher electricity costs and job losses in manufacturing industry, which would not be able to carry these higher electricity prices. The public clearly has a right to know these economic considerations, hence my request under S.I. No. 133 of 2007, which was not addressed.

Even worse it is clear that the figures in the ESRI report have been completed twisted and massaged to suit a positive result for the wind energy programme. If we look at the Working Paper No. 334, the following table is presented.

Table 4. Capital Cost of new plant, € million per MW of installed capacity

Type	Overnight Capital	Asset's Expected Lifetime
Wind	1.1 to 1.4	20
CCGT	0.67	25
OCGT	0.737	20
Interconnector	1.0	40

The installed cost of wind turbines is actually about €2 million per MW for onshore systems and more than €3 million per MW for offshore systems. Even the Irish Wind Energy Association was recognising this in 2008 (http://archives.tcm.ie/businesspost/2008/05/04/story32576.asp), while the Irish Academy of Engineering in their June 2009 Submission to the Joint Oireachtas Committee were stating in the recent past installed wind turbine costs ranged from €1.75 to €1.9 million per MW.

Worse, wind turbines have a far shorter economic life than conventional power plants. An asset life of 20 years as stated above for this technology has simply not been proven, major gearbox failures are common and indeed two large offshore wind farms off the Danish and UK coast had to be rebuilt after a year as they were simply unable to withstand the harsh environment. As for gas turbines (CCGT and OCGT), there are already units in operation with more than thirty years operational experience, indeed some such in Ireland and typically for thermal power plants a lifespan of at least 35 years occurs.

One must also question the prices used for carbon dioxide permits, which the ESRI assumed varied from a low price of €20 per tonne, to a medium price of €38.2 per tonne and to a high price of €60 per tonne. Currently carbon prices are trading at €15 per tonne, there are a huge number of energy efficiency projects available at that price and carbon capture and storage technologies are being developed in the range €20 to €30 per tonne. No justification was given for the medium and high prices in the ESRI study.

Given that the simple questions asked could not be answered nor where they available in the documentation produced, which was using false figures, one can only conclude a case of 'voodoo economics' in which the ESRI were once again pulling the wool over the eyes of the Irish public to meet the political agenda.

6.9 SED / SEI – Planned Economy / Green Economy, what's the difference?

In autumn of 2008 I had an afternoon to spare in Berlin and wandering around in front of the Humbolt University on the Eastern side of the Brandenburger Tor I came upon a bric a brac sale. For €2 I bought a book on "Fragen und Antworten der Fünfjahrplan der SED (Questions and Answers on the Five Year Plan of the Socialist Unity Party of Germany), a nice memento from the time of the German Democratic Republic. How things functioned in the glorious worker's paradise, lots of steel produced and jobs created, etc. The reality, the whole thing was completely unsustainable, as soon as Hungary opened its border to Austria in summer 1989; the East Germans couldn't get out quickly enough. Why, because West Germany was functioning so much better because of its social market economy.

Indeed the Lisbon Treaty is clear in that the principles of the Union include a social market economy, respect for human dignity and respect for democracy. However, as I keep on pointing out history repeats itself; we now have the plans for the 'Green Economy', which don't look a whole lot different than Five Year Plans of a previous era. For instance the report of the High Level Group on Green Enterprise below; when one goes in and actually starts looking for facts, one finds that they can't actually define what the Green Economy is other than the pyramid scheme of renewable energy and paying for the water and waste services we always pay for anyhow!

The 'Five Year Plan' of the Green Economy!

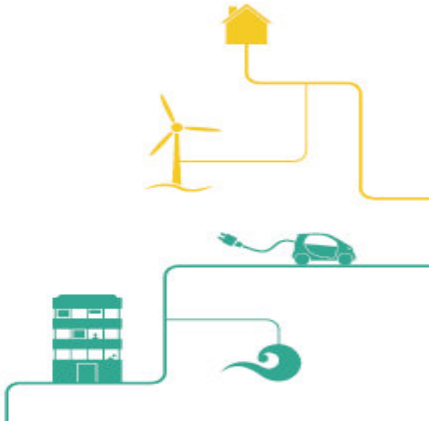
So energy is the big 'gig'. Sustainable Energy Ireland (SEI) or as they now seem to be calling themselves 'Sustainable Energy Authority of Ireland (SEAI), has a Strategic Plan for the period 2010 to 2015. Amazing: "We envisage a future where:

- Our electricity is generated entirely from indigenous, renewable sources.
- Ireland exports electricity across Europe through an interconnected grid system".

All I can say is thank God we have open borders and will the last person leaving by around 2025 turn out the lights!

seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

Strategic Plan
2010 – 2015



The SEIA Five Year Plan, it's pretty much on the front cover, plug everything into wind turbines. It just happens to say nowhere how much all of this is going to cost!!!

So what happens when one does ask the innocent question; how much is this going to cost? Maybe one might even get technical and wonder what were the alternatives available and even considered? The SED never published that kind of information and it's the same in today's five year plans. After all as I said in Section 3.2 you are a bit of a heretic if you start behaving in that manner.

Come on surely, there must be some answers in official documentation? I can refer to Attachment 4, which is an article of the SEI in Inshore Ireland. A proper and fitting question was asked of SEI: “There is scepticism about renewable technologies being value for money, i.e. wind power because of the unpredictability / maintenance costs of some technologies. Can SEI give reassurances that renewable energy is the way forward for Ireland? Will it deliver cheaper, cleaner in the future?” The answer was quite pathetic: “As scale effects from renewable energy generation (e.g. ocean / wind energy) begin to develop, Irish consumers will be assured of continuity of supply and reasonable costs”. Sorry, as highlighted already in Section 5.1 electricity from wind is related to the cube of the velocity of the wind. The wind velocity is what nature provides, if the scale of the thing gets larger and larger it just gets more and more expensive. As for ocean energy they have to give somebody three times the price for onshore wind energy for them even to enter the market place, cheap it ain’t nor never will be.

The other aspect of this planned economy is the constant reference to jobs created (translation – ‘jobs for the boys’). As the SEI article stated “In Ireland, a recent study estimated that meeting our current target of 40% renewable electricity by 2020 will create more than 10,000 jobs”. I mean there is no problem with doing that, in the German Democratic Republic everybody had a job working for the Government. However, we are governed by the Principles of the EU, which relate to the social market economy, or are we?

The German Green Party were in coalition between 1997 and 2005, their socialist partners the SPD kept many of their policies going up until late 2009. Michael Limburg of EIKE has campaigned passionately on the economic madness associated with the renewable energy policies in Germany and he does it by presenting the cold hard facts and figures. He and his like minded professionals are of course heretics (http://jules-klimaat.blogspot.com/2009/08/open-letter-to-chancellor-angela-merkel.html), like myself of course (funny as we all actually have these weird qualifications).

Coal fired plant in Wilhelmshaven with an output of 750 MW. In order to produce the same energy as this power plant produces in a year one would need to erect 3,000 (three thousand) of the wind turbines that can be seen on the right. Source - Michael Limburg.

He is right to be so, in 2008 Germany had about the same amount of wind energy capacity per head of population that we had in Ireland. Each job created in the wind energy industry in Germany was costing them €133,000 per year in subventions – ouch[13]. Remember how wonderful it was in Ireland in the SEI article that we were going to create more than 10,000 jobs. Lots of additional zeros each year to be picked up on the electricity bills!

As I have highlighted already industry simply can't afford these sums of money off the profit margin. So it packs up and goes somewhere sensible. This is great news for some, even more reductions in emissions on the national greenhouse budget, in this case real ones from industry which is no longer functioning, but the reductions can of course be attributed to the success of the new wind turbines, which in an indirect way they are.

So the goods get made elsewhere with the same emissions or even worse, depending on the location. The planet doesn't benefit and the imports increase into the lovely Green economy with all the wind turbines. However, the money starts to run out in that country and borrowings increase, until something like the Greek situation occurs when credit gets tight – shit happens!

As my friend and colleague from the EU Technical Aid projects Pat O'Brien pointed out in the Irish Examiner on the 22nd February 2010 in a letter entitled "Global warming disaster hype threatens to land us with the biggest bill in history".

- As Richard Lindzen, a leading US atmospheric physicist from Massachusetts Institute of Technology, stated in 2007: "Future generations will wonder in bemused amazement that the 21st century's developed world went into hysterical panic over a globally averaged temperature increase of a few tenths of a degree and, on the basis of gross exaggerations of highly uncertain computer projections (notably from the IPCC scientists) combined into implausible chains of inference, then proceeded to contemplate a roll-back of the industrial age."

The only difference I can see with today's five year plans versus those of the past is that the modern ones have considerably less numbers. No surprise there as the more technically qualified one is these days the less one is listened to. As I stated already in Section 3.2:

- While in the past populism was normally characterised by nationalism and intolerance to minorities, in Western societies it has in the last decades become increasingly characterised by a suspicious, resentful and downright paranoid view of education, culture, and finance. The populist impulse has been to play upon one public emotion above all - anger. This anger has typically been directed at a diffuse enemy at the top—the monopolies, the interests, or elites of various kinds, in particular with regard to Green populism, those that pursue scientific and technical progress.

[13] While I have not read it I have seen reference to a detailed analysis (focusing mainly on Spain) which found that for every job created by state-funded support of renewables, particularly wind energy, 2.2 jobs are lost.

What is equally disturbing is that when there are figures there is no hesitation in massaging them, or telling a few outright lies. Just like in the days of the previous Five Year Plan. Dr Brian Motherway is Chief Operations Officer, Head of Strategy and Innovation, The Sustainable Energy Authority of Ireland. At the Dail Joint Oireachtas Committee on Climate Change and Energy Security meeting on 3rd Feburary 2010, Dr Motherway said, as is recorded in the minutes, "For the purposes of comparison, it should be noted that the carbon dioxide emissions which Ireland now avoids through the use of renewable energy are more than one and a half times our total emissions from coal use in the country."

However, some of us are professionals with figures because we believe they count. The figure above didn't seem right, after all the Moneypoint coal fired station provides about 24% of the country's electricity. When the actual figures were requested it turned out that the SEAI had excluded coal used for electricity generation and only included coal used directly in industry, households, services, etc. The fact of the matter is that since smoke free zones were installed in urban centres and industry was regulated in the nineties to Integrated Pollution Control, very little coal is used in the country outside of the Moneypoint Power Station!

Then there was the fact sheet published in 2009, which at that time was available at:

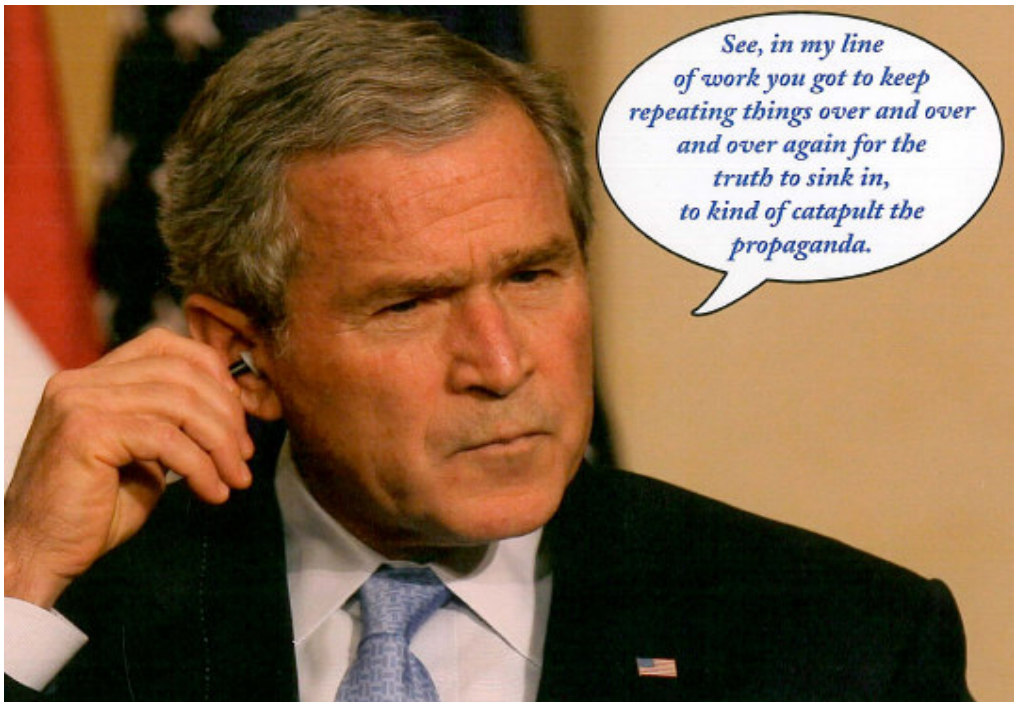
- http://www.sei.ie/Renewables/REIO_Library/Wind_Power/Wind_REIO_Factsheet_for_Web.pdf

This stated that:

- "A 5 MW wind farm will cost about €5.5 million to build, of which €1-2 million will be spent locally. It will typically provide 50 construction jobs for 6 months and 2 long term sustainable jobs. The wind farm will generate about 350 GWh of electricity over 20 years,"

This statement implied a capacity factor of 40%, which is seriously out of line with actual wind farms in Ireland, which as we have already seen have an average capacity factor of around 30%. Therefore the wind farm will generate about 260 GWh over 20 years, if it lasts that long, which is doubtful.

It wasn't the only fact sheet to contain such errors!



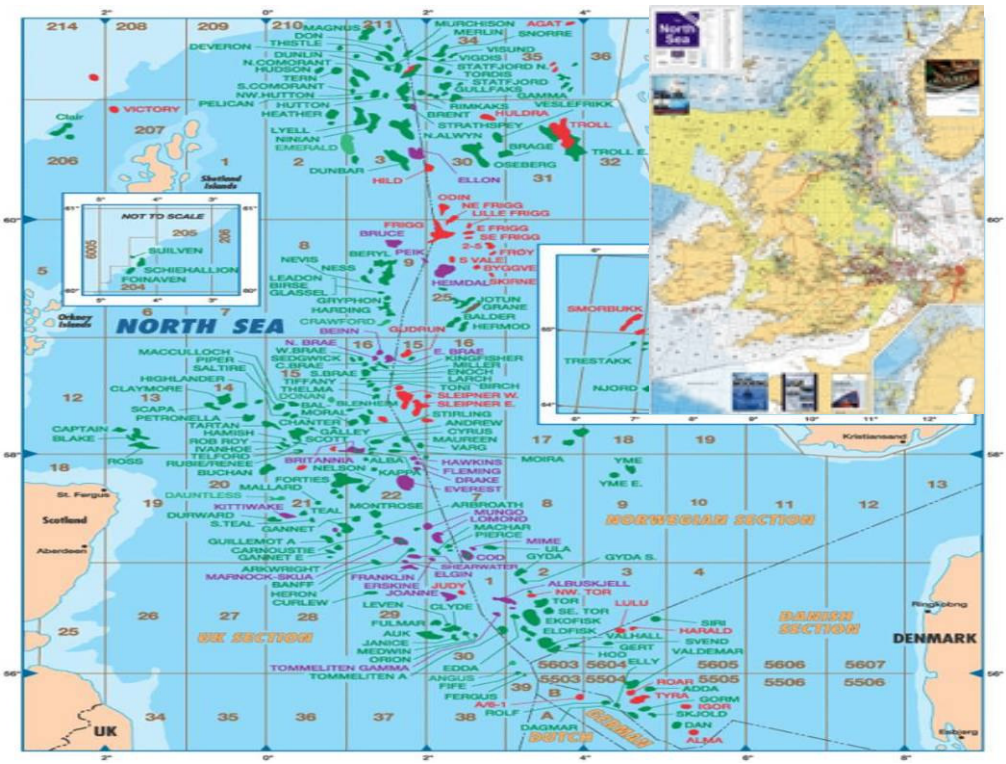
George did his bit for his buddies in the Defence Industry. It's a long established business model; the current version is Green populism, which looks after the renewable energy equipment suppliers.

7. THE CORRIB DEBACLE – WHY IRELAND IS COMPLETELY OFF LIMITS FOR INVESTMENT

7.1 The Background to the Debacle

Natural gas generates over 60% of the electricity in Ireland and fuels homes and industry. While the Kinsale Field was discovered and developed in the early seventies, gas from the European network is currently pumped into the reservoir there over the summer and drawn out over the winter months. Very little is drawn any more from the field itself. Indeed a single gas pipeline from the European grid goes to a compressor station in South Western Scotland and then is routed under the Irish Sea to North of Dublin. The country is hanging off that pipe!

Ireland has not had a good innings with petroleum exploration. About 150 exploration wells have been drilled in the Irish Sector, outside of Kinsale Field we had to wait until 1996 until Enterprise Energy Ireland finally hit pay dirt with the Corrib Natural Gas Field. Note: Shell Exploration and Production Ireland Ltd (SEPIL) acquired Enterprise Energy Ireland in 2002. A pretty poor run from exploration in Irish waters, in particular given that a drilling rig costs about €0.6 million per day and the success ratio in the North Sea sector is about one producing field for every four exploration wells drilled.



Bit of a difference in petroleum finds in North Sea and Irish waters. However, many Irish are insistent that the same exploration terms should apply in both jurisdictions.

The Corrib field is marginal by international standards; the well head is 80 km off the exposed North Western Coast and at a depth of 300 m. It will only supply 60% of Ireland's needs at peak supply and with four million residents in Ireland we wouldn't even feature on the list of big European cities if we all lived in the same urban area.

The issue with Corrib is not technical, it is simply the current front line in the battle between reason and outright and violent Green populism. When one contemplates on what has been lost in the process of bringing this gas onto the Irish grid and considers if there have been any positives from the whole sorry affair, all one as an Irish person can do is hang one's head in total shame. Sitting in the site canteen one lunch time during the height of one of the tense periods when violence was erupting against the security staff at the perimeter, I explained to some of the technical staff that this wasn't an issue of their project but a failure of Irish society that had its roots more than twenty years ago.

In the previous book I highlighted the dreadfully uneasy relationship the Irish psyche had with industry. I am not proud of my people, too many times both Irish and foreign investors have initiated industrial projects in this country, met ever requirement and acted with the highest standards and yet have been treated with abuse and disrespect. While there are certain elements of Irish society that have behaved in a violent and undemocratic manner in this regard, most falling under the banner of Green populism, what has been even worse has been the repeated failures of the Irish Administration to act responsibly within the legislation. Access to Justice is an enormous problem and a complete disincentive to even contemplating a project in Ireland. As I highlighted in my previous book with regard to the High Court in 1988 awarding the dairy farmer John Hanrahan approximately €1 million in compensation from the pharmaceutical company Merck Sharpe and Dohme, scientific fact just didn't enter it. A few odour episodes and Merck Sharpe and Dohme were blamed for all the woes of the world and hundreds of cattle deaths. Unfortunately as I highlighted in the previous book and it will be raised again, scientific fact doesn't count in the Irish regulatory process anymore, its dances to the political tune.

As I have mentioned already populism has played upon one public emotion above all - anger. This anger has typically been directed at a diffuse enemy at the top - the monopolies, the interests, or elites of various kinds. What better rallying call to the barricades then the appearance of a petroleum multinational on the scene called Shell. However, who the hell is Shell? Well they are owned by shareholders, the majority being pension funds, our pension funds. It's not a perfect world, but from personal experience I can vouch for the fact that multinationals pay their bills, look after their staff (you won't find any grumbling in the Corrib canteen) and take regulatory compliance seriously. As regards Shell's operation in Nigeria all I can point out is that this company is in fact majority owned by the Nigerian State. Nigeria is an utterly corrupt country through and true where a culture exists that has little or no respect for others. It is racked by inter tribal conflicts and feuds. Indeed oil pipelines are deliberately sabotaged and pollution episodes generated in order that 'show trials' against the 'multinational' can be used to make financial awards for damages to villages 30 km or more from the resulting oil spillage. Imagine trying to keep a business functioning in that kind of environment, not easy. However, one always got the true story from the Irish media. I would also point out that if I stacked Shell's business practices up against that of the Irish Administration on a scale of ethical responsibility and accountability I know I wouldn't be able to find that of the Irish Administration, if you don't believe me start quantifying the numbers.

One could easily write a whole book on the Corrib affair, without doubt somebody will, but I don't intend to do it here. I will point out that what was a project started over eleven years ago with a budget of $1 billion and a five year timescale will reach a point in mid 2010 when everything except 9 km of interconnecting pipe will be completed at a cost of about $2 billion. The system will then be mothballed and lie idle until some sense comes to the people of Ireland and their Administration. The financial arrangement for the exploration licence was that 25% of the revenue remaining after payment of development and operational costs went directly to the Irish exchequer. So the Irish taxpayer has lost €200 million in revenue straight up, the bill for policing on the site to keep the violent minority under some form of control has amounted to at least €15 million and the reputation of the country has been completely ruined for any further industrial investment.

For those of you readers not already familiar with the project one can access further details at the below and many other sites:

- http://www.shell.ie/home/content/irl/aboutshell/shell_businesses/e_and_p/corrib/
- http://www.galwayindependent.com/business/business/why-the-opposition-to-the-corrib-gas-project?/

7.2 The media – abusive exploitation of the situation in which the voice of Reason and Moderation was not heard

After sex the next best thing for selling printed paper, TV advertisements and radio spots is controversy. So why bother telling the truth about something when one can entice the titillated public back for more 'will he or won't he', 'should he or shouldn't he' the next day? God knows the worst thing one would ever want to report on is how something is being sensibly managed and that there is absolutely no reason for anybody to get excited. Particularly if one has a lovely medium of TV in which beautiful action shots of violence can be beamed around the place, after all violence sells, just look at what Hollywood produces.

However, in theory there are laws against this. In practice in Ireland it would take years to bring a case against the media and the costs would be massive, plus the risk of losing the case and being left to carry the costs. Back to the same issue – Access to Justice. So the Government established two 'Quangos' to serve the public in these matters instead of allowing the public access to their proper rights; The Broadcasting Complaints Commission and the Press Council of Ireland (with associated Press Ombudsman). All good stuff in theory but when one documents clearly how false information is being printed and broadcasted they just completely fail to take the necessary enforcement action – they are corrupt. In late 2008 I prepared a file on this issue. I received letters back from the Head of Cabinet of the Vice President of the EU Commission and DG Environment thanking me for my efforts, but pointing out they had no authority to interfere in media complaints of a Member State. See the previous book for more details, which is a serious eye opener on how the media works in Ireland.

The usual witch hunt was whipped up over the Corrib project, the fact that five residents (Rossport Five) had to be jailed for their contempt of the democratic process (the High Court) was just 'manna from heaven'. The media simply did not care to acknowledge the details as to whether there was actual safety or environmental impacts of any significance. They ruthlessly exploited and enflamed the situation for their own personal gratification.

As I wrote to the Head of State and the Head of Shell E&P Ireland Ltd on the 16th October 2008:

"This project meets all EU and National Legislation and Codes of Best Practice yet is subject to bullying and intimidation by Irish Citizens, who operate with impunity outside the law, fuelled by a 'Trial by Media in the Court of Public Opinion' in which the basic parameters of the regulatory aspects of the project have not been conveyed to the general public. In this regard both State owned and non-State owned media in Ireland have failed to explain the criteria on which the project was approved by the regulatory authorities, instead seeking to promote the protest groups and undermine the decision making process and independence of the Planning Authorities and the Environmental Protection Agency.

The basic fact that under EU and National Safety Legislation in place since 1989 Shell has to identify risk, combat risks at source and adapt to technical progress means that it is illegal for Shell to even consider an off-shore option for the project. Indeed if an accident were to happen on an offshore production platform when an on-shore option was viable the Directors of Shell E&P would be facing a prison sentence under the terms of such legislation. When I explain this to members of the Irish public who are not Engineering and Safety Specialists they are dumfounded, they never heard it in the media, just incessant 'Shell to Sea[14]' coverage!

Unfortunately Ireland has been characterised by the highly unethical conduct of many senior politicians and a general approach in which everything, such as the economy itself, can be sacrificed on the altar of short term popularity. There is no proper leadership! Shell E&P has received no support for this vital and fully compliant project from the leadership in the State, indeed we now have the undignified situation of the relevant two senior Ministers cavorting with the 'Shell to Sea Groups', which raises serious ethical questions about them failing to support, i.e. undermine, the State Agencies directly responsible for planning and environmental protection".

I called the kettle black stating that the State was clearly negligent, concluding in my words to Terry Nolan the head of SEPIL:

- *"If you chose to seek to recover some of the massive costs that have been unnecessarily incurred on this project from the State, then feel free to use this documentation, I would even be more than happy to testify on your behalf for free on this issue".*

Rather than focusing on the whole sorry mess that has been left behind for others to pick up, not least those of us who earn a living in industrial development in Ireland and have essentially no future work here, it is important to focus on the role of the media and the manner in which the State was negligent in ensuring the correct environmental details were conveyed to the public.

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[14] Shell to Sea, the main opposition group who forcefully campaigned with support of senior political figures that the gas processing terminal to remove the water from the high quality raw gas should be built on an off-shore platform. There have been more than a 100 deaths on off-shore helicopter transfers in Northern European waters. EU legislation is clear, risk must be combated at source and there must be adaptation to technical progress. The technology has moved on such that the gas can now be brought on-shore for the removal of the entrained water from the well.

As it turns out I got a very nice reply from Terry Nolan and on the 30th October 2008 a reply from the Office of the Secretary General to the President:

- *"The president is grateful for your thoughtfulness in writing and sends her good wishes".*

So I sent back a letter on the 3rd November 2008 highlighting the issue once again and this time as well the huge problems with the renewable energy programme, which had just been increased to a target of 40% in the electricity supply. I put it clearly:

- *"Simply put if the Irish State wanted to destroy a high technology industrial base developed by myself and my engineering and technical colleagues over the last 20+ years in quick tempo it could not be doing it faster than by the above".*

I then concluded:

- *"Personally I can only add that given the gravity of the subject matter I already sent to your office that the only comment I received is that "the contents have been noted and the President is grateful for your thoughtfulness in writing and sends her good wishes". This is simply inadequate for industry that has to plan its future here and myself and my professional colleagues, who work here in that sector. After all during the economic difficulties of the eighties when as graduates we sent our CVs to companies in search of employment we knew that such a reply had only one single meaning – **Go Elsewhere**!"*

So this time there was a bit more in the response on the 27th November:

"Thank you for your further letter of 3 November 2008, enclosing a report on the Corrib project.

I would like to explain that the constitutionality of the Office of the President prevent her from intervening in matters which fall within the remit of the Government and which is the case in this instance.

I have arranged to forward your correspondence to the Government for appropriate consideration".

Not having heard anything by the 4th December 2008 I sent my file and a covering letter in to the Department of the Taoiseach. I got a reply on the 9th December:

"The Taoiseach, Mr Brian Cowen T.D., has asked me to acknowledge receipt of your letter of 4 December, 2008, which has been referred to the office of the Minister for Communications, Energy and Natural Resources, Mr. Eamonn Ryan T.D., for attention and direct reply to you.

Yours sincerely

Paul Mooney

Taoiseach's Private Office"

Surprise, surprise I never heard a 'dicky bird' from Mr. Eamonn Ryan, as I pointed out the cover letter in my Submission to the Oireachtas in June 2009:

Eamon Ryan TD and currently Minister for Communications, Energy and Natural Resources campaigning with 'Shell to Sea'. This organisation, which operates outside the democratic process and is a frequent user of violence and intimidation, is campaigning to have a developer endanger its workforce and break the law. 18 TDs, 3 Senators and 6 Irish Political Parties are listed as providing support on its website.

All I can say is if you want more information on this issue you could ring Paul Mooney at the Taoiseach's Private Office at 01-6194020. However, they were warned and this is documented.

A further insight on how the media works in Ireland is revealed by what happened on the 16th May when the Irish Independent columnist Bruce Arnold wrote an offensive and false article on the Corrib project. In it he criticised among others his fellow columnist Kevin Meyers, who in the previous edition had called the 'kettle black' about what a God awful carry on was taking place [(15)]. So I wrote to the Irish Independent the following that day and in fairness they published it in the letters page.

"Bruce Arnold clear states (16th May) with regard to the Corrib Project "the hugely negative environmental impact of much that was being steamrolled through in Mayo". I would like to point out that if Bruce Arnold or those he supports have an issue with the regulatory approval of this project they have access to justice and can seek a judicial review of the decisions.

Instead of people putting their money where their mouths are we have in Ireland persistent "Trials by Media in the Court of Public Opinion". In which journalists make claims without providing any supporting facts.

I therefore expect Bruce Arnold to do the honourable thing and in his next article outline the bullet points to justify the claims of hugely negative environmental impacts and a steamrolling regulatory process. This will give myself and others who make our livelihood in the design and regulatory approval of such industrial projects in Ireland and around Europe the opportunity to comment as to their validity".

[15] Article at: http://www.independent.ie/opinion/columnists/kevin-myers/george-you-need-to-sort-out-this-nonsense-at-shells-corrib-gas-site-1739780.html

Bruce never did reply to this, but I got a strange response from him to the above letter, which I had sent to his e-mail at the Irish Independent at the same time as it went to the editor there. To this had been attached the letter from Anne Maher at DG Environment, which I had referred to previously, which had praised me for highlighting misrepresentation of EU policy in the Irish media.

"Thank you for sending me a copy of your letter to the paper.

I am replying privately, since I do not write 'bullet points' and I do not intend to give a lengthy summary of the many and complicated environmental issues, to which, of course, other legal, constitutional and social issues append.

I do not know what you mean by 'those he supports' in reference to my article and I do not think you know either. Many of those I spoke with could not afford to seek a judicial review nor do I think it the proper course.

The most interesting part of your letter was the following: 'This will give myself and others who make our livelihood in the design and regulatory approval of such industrial projects in Ireland and around Europe the opportunity to comment as to their validity.' Would you like to tell me whether you are involved in any aspect of the Corrib Gas operation? And can you explain the letter from Anne Maher you sent me? What kind of media watchdog are you? And what did you do to attract such gratitude?

Yours,

Bruce Arnold, Rosney House, Albert Road, Glenageary, County Dublin"

So no facts! I do however accept that there are problems with Access to Justice and that is the fault of the Administration, but it is unacceptable for individuals to step outside the democratic process without offering a single fact or figure. So I replied to himself and his editor:

"It's very simple Mr Arnold, go to the website of the Press Ombudsman and read the Code of Practice.

- *Principle 1: Truth and Accuracy.*
- *Principle 2: Distinguishing fact and comment.*

Either you have the facts to support what you wrote with regard to the accusations of improper provisions for Health and Safety and Environmental Protection or you don't.

If the appropriate facts are not published to support your claims by the end of next week I will take this matter to the Press Ombudsman".

Strange reply from Bruce Arnold:

"The Press Ombudsman's website won't answer the questions I asked in my email to you. Perhaps you might have another run at answering them.

I do have the facts.

I will await the Press Ombudsman's response to you".

So the facts never got printed and the Press Ombudsman refused to process the complaint stating:

"The column about which you complain was quite clearly an opinion piece, published on a page with the heading "Opinion". As such, it enjoys a wide measure of protection under the Preamble to the Code of Practice, which states":

- *"The freedom to publish is vital to the right of the people to be informed. This freedom includes the right of a newspaper to publish what it considers to be news, without fear or favour, and the right to comment on it."*

So ladies and gentlemen what you read in the newspapers in Ireland, its whatever the newspapers considers to be news, if the reality is that the facts are completely false then that is your problem and not theirs. It wasn't as if I hadn't been highlighting this issue with the Head of State and Head of Government for some time.

- In 2003, the legal advisory group on defamation - established by the Minister for Justice - recommended in its report that the defamation laws be reformed and a statutory press council established. The present Industry based Press Ombudsman is clearly a farce which doesn't even follow published procedures. There is therefore no realistic defence against a 'Trial by Media in the Court of Public Opinion'. Of course a statutory press council is required with an appeal process to the Government appointed Ombudsman.

So it went on month after month, abusive and false information in the media, which was deliberately used to exploit the situation and enflame it. However, I was getting to know my legislation and getting ideas. What was really annoying me was the role of the regulatory agencies. The project for instance has full approval from the EPA to the Integrated Pollution Prevention and Control Directive. The purpose of the Directive is to lay "*down measures designed to prevent or, where that is not practicable, to reduce emissions in the air, water and land from the above mentioned activities, including measures concerning waste, in order to achieve* ***a high level of protection of the environment taken as a whole****"*. However, the media, including the state owned broadcasters were continuously beaming reports on the environmental problems with the project into every home in Ireland.

Let's go back to Pillar 1 of Aarhus again. Directive 2003/4/EC is well worth a read, as well as Access to Information on the Environment it requires dissemination. Under Article 7 public bodies have obligations relating to dissemination of environmental information. The following phrases can be highlighted:

- Active and systematic dissemination to the public.

- Information to be made available and disseminated shall include Community, national, regional or local legislation, authorisations, environmental impact assessments and risk assessments, etc.

- Member States shall take the necessary measures to ensure that public authorities organise the environmental information which is relevant to their functions and which is held by or for them, with a view to its active and systematic dissemination to the public, in particular by means of computer telecommunications and / or electronic technology, where available.

As I had mentioned already with regard to Pillar 2 of Aarhus in Section 4.2, Public Participation in Decision-making is enacted by Directive 2003/35/EC. The European Court of Justice (C-427-07) has found against the Irish State in a case taken by the European Commission over the implementation of this Directive. In fact they made it very clear:

"The Court pointed out that one of the underlying principles of Directive 2003/35 was to promote access to justice in environmental matters, along the lines of the Århus Convention on access to information, public participation in decision-making and access to justice in environmental matters. Therefore, the obligation to make available to the public practical information on access to administrative and judicial review procedures laid down in the sixth paragraph of Art. 10a of the EIA Directive and Art. 15a of the IPPC Directive, amounted to an obligation to obtain a precise result which the Member States must ensure was achieved.

The Court held that, in the absence of any specific statutory or regulatory provision concerning information on the rights thus offered to the public, the mere availability, through publications or on the internet, of rules concerning access to administrative and judicial review procedures and the possibility of access to court decisions could not be regarded as ensuring, in a sufficiently clear and precise manner, that the public concerned was in a position to be aware of its rights on access to justice in environmental matters".

This was great stuff, what our regulatory agencies were doing was putting the documents on their websites, running as fast as they could to cover and leaving us high and dry to face the abuse from the media. Including the state owned broadcasters, who were then reporting on the environmental and safety controversy when there was no legal basis in the documentation to support it – lovely! However, RTE the State Broadcaster and Irish Language State Broadcaster TG4, are public bodies. Environmental information was being generated for them by other public bodies. Their function as a Public Body and State Broadcaster is of course to disseminate information, the correct information on the environment, not tell lies to the public.

However, this misinformation was exactly what was happening week in and week out. It even got to the stage in October 2009 that the religious programme 'Would you believe' on RTE television had an episode devoted to the beliefs of one of the Rossport Five, who had been jailed for his contempt of the High Court. It didn't matter that at the same time his fellow activists were in and out of Court for violent public order offences which finally resulted in jail sentences for them. The judge stating in no uncertain terms that they were nothing but common thugs. So I sent in an Access for Information on the Environment request under S.I. No. 133 of 2007 on the 26th October asking:

1. The criteria RTÉ use with regard to assessment of environmental impact, environmental pollution, acceptable risk, unacceptable hazard

2. The qualifications of RTÉ personnel who are reporting on matters of industrial development and implementation of the Environment Acquis with regard to objectivity and accuracy

3. The names and qualifications of all RTÉ researchers who in the last 3 years have been responsible for editing and producing programmes related to the Corrib Development in North West Mayo

4. RTÉ policy regard to its obligation under the Aarhus legislation for dissemination of environmental information.

I got a reply (RTÉ Reference: FOI 2009/098) on the 27th October from Peter Feeney, Freedom of Information Officer RTÉ. Essentially the questions weren't answered, i.e. I was told to get lost. So I went to an internal review and received a reply on the 29th October from Adrian Moynes, Group Secretary, RTÉ. Again a refusal to answer the questions so I paid my €150 and lodged my appeal to the Commissioner for Environmental Information and case CEI/09/0015 was established. As I clarified to the Commissioner:

"RTE is a public body which is regulated by the Broadcasting Acts. It is the main media outlet and source of information for the overwhelming percentage of the Irish Public. Page 12 of its Guidelines (attached) relate to "Objectivity and Accuracy". In particular these highlight that "the majority of the public looks to RTE radio, television and web services to provide them with much of the information they need as citizens of the State to participate in the democratic process. Accuracy in the facts RTE present is important to maintain this function". Additional sections relate to checking and rechecking facts, corroborative confirmation, rumours or speculation must not be reported as facts, the natural ambition to broadcast news first cannot come before the obligation to be accurate, journalists must ensure their personal opinions and value judgements are avoided in their reporting, etc.

Indeed this type of broadcasting is a direct breech of the RTE published guidelines and if RTE had been actively following their own guidelines a reply to my request for information would have been automatic. Finally it is abundantly clear in the text of the Directive that a public body is not exempt from the requirements simply because it claims 'journalistic' functions and states that the Directive solely relates to access to information in the keeping of other administrative bodies".

If we consider the other State Broadcaster TG4, this is a minority channel, using the medium of the Irish language. While the Irish language has a strong cultural value it is also very closely connected to Irish nationalism and history has shown us how time and time again people connected with the Irish language movement have stepped outside the democratic process, using the cultural identity to justify this position. In Ireland unfortunately it is the cause not the facts that count.

The Corrib situation was no different, one of the major 'abuses' that was considered by the violent anti-development minority to have happened in the early stages of the project was that English signs had been placed in the area, which was classified as a Gaeltacht (Irish speaking area) and that they had been 'invaded' by people with English accents. The programme on TG4 on the 16th November was therefore completely unacceptable, in it the retired Muinteoir, who had been jailed for contempt of Court, was repeating in Irish about the injustices and how the law had been changed several times to facilitate the project. While this was completely false it was only serving two purposes (a) to titillate the public and (b) to fan the fuels of a fire of what was already a delicate situation in which the voice of reason and moderation had not been heard.

So I sent in my file relating to the case with RTE (CEI/09/0015) and requested the same information. The e-mail went to info@tg4.ie and that of Pol O'Gallchoir, the head of TG4. They choose not to respond to this request.

While it is unfortunate that the Corrib controversy developed the way it did and let me repeat there were no winners, the fact is that it was deliberately enflamed by the actions of the Irish media. Furthermore there was a complete failure by the State in that:

- Access to Justice was not provided such that inaccurate reporting would be dealt with through a legal process.
- The State appointed bodies for media complaints, the Broadcasting Complaints Commission and the Press Council of Ireland have failed to meet the standards prescribed.
- The State Broadcasters have failed to comply with their duties relating to dissemination of information on the environment and instead broadcasted false information to heighten the controversy.

7.3 How the Planning Appeals Authority, An Bord Pleanala, acted outside the legislative basis to suit political considerations

As I have mentioned already in this book and the previous book there are serious questions that have to be answered as to how this Planning Appeals Authority is allowed to systematically make decisions outside legislation. Unfortunately to seek a review of their decisions one has to initiate a judicial review in the High Court, so we are back now to the same old question of Access to Justice.

Right from the first stage of the project complete unprofessionalism was encountered with An Bord Pleanala. A planning application for the gas terminal was made to Mayo County Council in April 2001, and subsequently appealed to An Bord Pleanála by objectors. An Bord Pleanala refused planning permission on the issue of peat storage. In December 2003, a new planning application was made for the same site, together with a peat deposition site owned and operated by Bord na Móna at Srahmore, some 11 km away. This was subject to an appeal to An Bord Pleanála who granted permission in October 2004 attaching 42 conditions.

So it took over three years to get a simple decision. However, when myself and my colleagues have trained regulators on the EU Technical Aid projects in Central and Eastern Europe the message is drilled in; they must clearly understand what under the legislation they can ask for and what they cannot. For instance the Directive on Integrated Pollution Prevention and Control is clear in that targets, such as emission limit values can be specified, but the techniques to reach them are solely a matter for the operator to decide. He knows his plant best and the goal of the EU is to ensure adaptation to technical progress, not have regulators with limited knowledge of the industry obstructing progress. To prepare the site for the Corrib gas terminal in Mayo, 15 m of peat had to be removed to enable the rock to be reached. The original plan was to build up a repository at one site of the site. An Bord Pleanala refused to accept this design stating that their ‘expert’ had demonstrated that it could not be done. So the whole thing had to go back into planning and at enormous cost the peat then transported by truck to a bog 11 km away.

The peat that had to be removed to a depth of 15 m and transported by truck 11 km to the nearby bog as the An Bord Pleanala inspector 'demonstrated' that it couldn't be stored in a repository at the side of the site. As taxpayers we funded 25% of that cost due to lost revenue.

One can only be desperately uneasy when time and time again one sees the unlimited powers of An Bord Pleanala. There inspectors are allowed behave like loose cannons, they continuously make statements that enflame a situation and in which there is no basis in fact. For instance in 2002 the inspector stated in his report "*from the perspective of sustainable development, this is the wrong site".* That old term again, it just so happened that he didn't demonstrate a breach of a single Directive of the Environmental Acquis, which are the legal implementation of sustainable development.

In May 2005, following the granting of a court injunction, five local residents, the Rossport Five, were held in contempt of the High Court for refusing to allow SEPIL entry onto their land to construct the onshore pipeline and they were then committed to jail. In response to safety concerns expressed by members of the local community, the Irish Government appointed international consultants, Advantica, to conduct an independent safety review of the onshore pipeline. This report was then published in May 2006. In their report, Advantica concluded, "proper consideration was given to safety issues in the selection process for the preferred design option and the locations of the landfall, pipeline and terminal". SEPIL accepted all of the Advantica recommendations and agreed to limit pressure in the onshore section of the pipeline to 144 times atmospheric pressure or below.

For over a year work had been suspended by Shell on the on-site terminal while negotiations and mediations were being completed with the local community. Shell also agreed to reroute the on-shore pipeline not because there were technical or legislative reasons but out of political goodwill. The new route was identified in April 2008 following a 14-route selection process involving 11 months of public consultation. The modified route doubles the distance from occupied housing and the pipeline's design pressure is now less than half of the original design pressure. Applications associated with this route modifications were lodged with the relevant statutory bodies in February 2009.

An Bord Pleanala then conducted a 19 day oral hearing on the project in May 2009. On 10th August it was announced in the Irish Times that the decision on the pipeline routing had been deferred by An Bord Pleanala until late September "due to the complex nature of the case". I went in to the An Bord Pleanala website several times to access the reason for this. It was never posted. This has become a frequent occurrence, decisions to defer planning decisions or statements as to what planning decisions are to be made are announced to the press but no official documentation of them ever appears on the regulator's website.

This was a minor irregularity compared to what followed. On the 2nd November 2009 An Bord Pleanala issued a letter stating:

- "The design documentation for the pipeline and the quantified risk analysis (QRA) provided with the application does not present a complete, transparent and adequate demonstration that the pipeline does not pose an unacceptable risk to the public".

There were other sections in the letter, just like the Report of the Joint Oireachtas Committee on Climate Change on the results of the Submissions; which if a first year university student had written it he / she would not have been allowed into second year. This obviously needs to be explained.

With regard to the safety issues relevant to the Corrib Project, neither EU nor National Legislation is based on zero risk. It is recognised in legislation that an element of 'residual risk' remains even after applying 'all necessary measures' to protect man and the environment. For instance Article 5 of the Directive on Control of Major Accident Hazards involving Dangerous Substances (96/82/EC as amended) clearly states that:

- Member States shall ensure that the operator is obliged to take all necessary measures to prevent major accidents and to limit their consequences for man and the environment.

- Member States shall ensure that the operator is required to prove to the competent authority that he has taken all measures necessary as specified in this Directive.

The EU has issued Guidance on preparing Safety Reports. Safety Reports are required for operators of establishments that fall under the 'top tier' requirements of the Directive on Control of Major Accident Hazards involving Dangerous Substances, which is available from the EU Major Accidents Hazard Bureau. As the EU Guidance on Safety Reports states; "although '**necessary measures**' are taken there will be some element of residual risk. The decision as to whether a residual risk is acceptable depends on national approaches and practices. Nevertheless there are some widely accepted supporting principles for this decision:

- The efficiency and effectiveness of the measures should be proportionate to the risk reduction target (i.e. higher risk require higher risk reduction and, in turn, more stringent measures).

- The current state of technical knowledge should be followed. Validated innovative technology might also be used. Relevant national safety requirements must be respected.

- There should be a clear link between the adopted measures and the accident scenarios for which they are designed.

- Inherent safety should be considered first, when feasible (i.e. hazards should always be removed or reduced at source).

It is also critical to fully understand and differentiate between the two parameters hazard and risk. The Directive on Control of Major Accident Hazards defines them as:

- "Hazard is the intrinsic property of a dangerous substance or physical situation with a potential to create damage".

- "Risk shall mean the likelihood of a specific effect occurring within a specified period or in a specified circumstances"

Risk is therefore a combination of the **likelihood** of occurrence of a defined hazard and the severity of the **consequences** of the occurrence. The established methodology is therefore based on identification of the possible hazards. These are then subject to a risk assessment in which the components relating to likelihood and consequences are assessed using a combination of qualitative and quantitative approaches. For risks which are deemed to be significant it is necessary to identify the necessary measures to prevent, control and limit the risks, this is the risk mitigation step. If the risk is deemed to be acceptable then no further measures need to be taken. Alternatively if the risk is deemed as unacceptable then further control measures need to be identified and assessed. A hazard is therefore only a 'stepping stone' for determination of risk and the legislation is clear in that a level of residual risk remains after all measures necessary have been applied.

Furthermore the EU Commission's Non-binding Guide to Good Practice for Implementing of Directive 1999/92/EC (Explosive Atmospheres) is clear in that assessment of explosion risks initially focuses on:

- The likelihood that an explosive atmosphere will occur; and subsequently on:

- The likelihood that sources of ignition will be present and become effective.

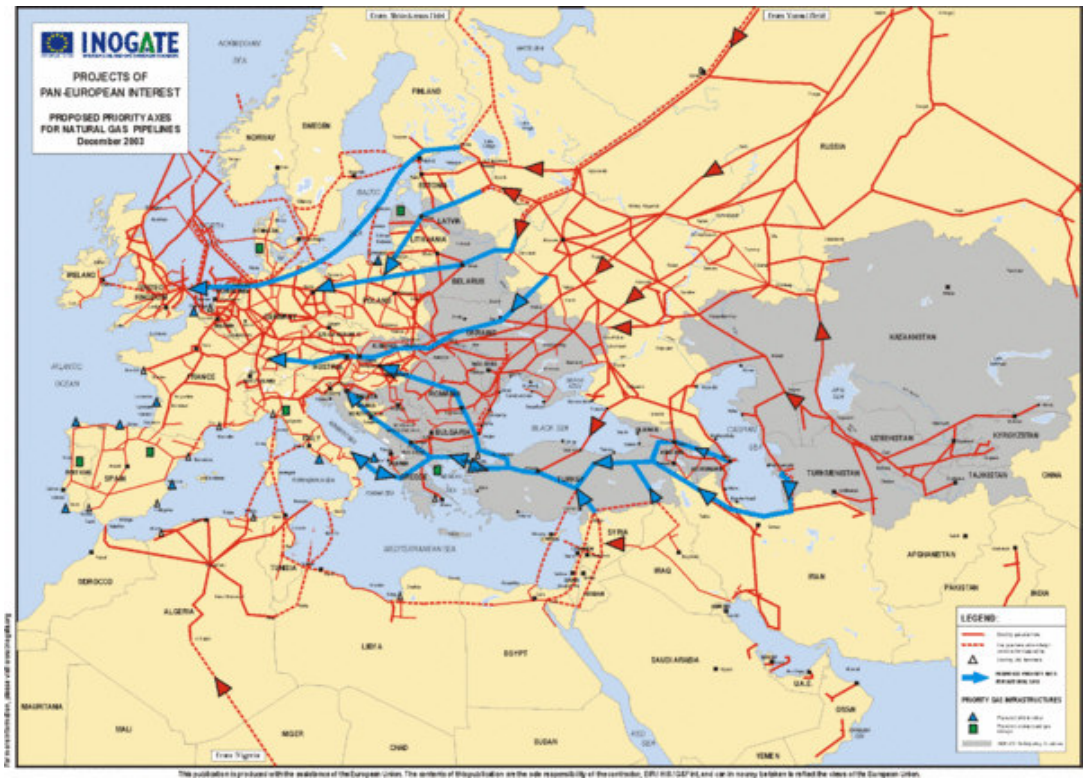
Consideration of effects is of secondary importance in the assessment process, since explosions can always be expected to do a great deal of harm, ranging from major material damage to injury and death. Quantitative approaches to risk in explosion protection are secondary to the avoidance of hazardous atmospheres.

An Bord Pleanala in their letter of 2nd November interchanged hazard and risk, statements such as:

- "Adopt a standard for the Corrib Corrib upstream untreated gas pipeline that the routing distance for proximity to a dwelling shall not be less than the appropriate hazard distance for the pipeline in the event of a pipeline failure. The appropriate hazard distance shall be calculated for the specified pipeline proposed such that a person at that distance from the pipeline would be safe in the event of a failure of the pipeline".

These were the standards to which the pipeline would be assessed. Switching to layman's analogy, we all have planes flying over our heads, so we are all in the hazard distance in the event of a plane crash. Are we safe? Should we ban planes from Irish airspace, particularly as most of them are only transiting it going to and from other countries? Let's go back to the legislation, it is about risk. So long as planes fly overhead it will never be a zero risk, but we benefit from air travel so let's not ground all the planes. So the legislation requires us to implement the necessary measures to maintain this risk as low as practicable. Good quality design, good operating and maintenance procedures, checks by the regulatory authorities. Makes sense doesn't it!

The Corrib pipeline is effectively a gun barrel; it is 500 mm in diameter and 27 mm (1 inch) thick. It can easily hold a pressure of 500 times atmospheric pressure, more than three times its maximum operating pressure.



Hundreds of thousands of kilometres of high pressure natural gas pipelines criss-cross Europe. Indeed the one in blue under construction in the Baltic will operate an one and a half times the pressure in the Corrib pipeline. Does An Bord Pleanala know something the others don't?

The reality is that once the pipeline is designed, operated and maintained properly nobody will even know it is there. A simple trench is dug, the pipe dropped in and the grass will have grown back in less than six months – standard practice. In fact the higher the pressure in the pipe the thicker the pipe is and the more difficult it is to damage it. It is not rocket science, gas leaks occur from the low pressure pipes that get dug up by accident, such as from construction activities, which is not surprising given that low pressure pipes are relatively light walled and get punctured. You don't dig up major high pressure gas pipelines and even if you did the digger would probably break first!

One can identify hazards and calculate consequences for umpteen scenarios but is it relevant if it simply doesn't happen? If one goes looking for failure data for larger diameter high pressure pipes, guess what? It essentially isn't there! Why? Because such pipelines don't fail, after all, the digger would probably break first. Furthermore, as an engineer familiar with basic risk analysis will tell you, the pressure in the pipeline is not really that significant. It is the size of the hole and the likelihood that a hole will occur. Simple - the higher the pressure the thicker the wall of the pipe and the more difficult it is to create a hole. However, An Bord Pleanala lives in its old world of the first year student, who will never get into second year. SEPIL had to go back to An Bord Pleanala to get them to specify exactly what they were talking about rather than the 'mumbo jumbo' of the letter of the 2nd November.

A concerned colleague requested of An Bord Pleanala the correspondence related to the above and they replied "the Board does not make available submissions or correspondence received by it in relation to any application". However, they then sent him a copy of their letter by pdf. Strange, what happen to Directive 2003/4/EC on Access to Information on the Environment? More about this coming soon! This clarification letter from An Bord Pleanala of the 29th January 2010 was clear in that a "full bore rupture" of the pipeline had to be assessed at maximum pressure and that persons standing beside the dwellings should not receive a dangerous dose of thermal radiation. Not to mention that this risk should be less than one in a million (individual risk of 10^{-6}).

The Corrib onshore pipeline, 27 mm (1") thick and 500 mm in diameter, a real gun barrel. What would split this in two? Gonzilla coming in from the Atlantic?

So what scenario could split a pipe built like a gun barrel completely into two sections? This is the realm of fantasy and not reality. For small pipelines, such as 25 mm (1 inch) diameter, of course this could happen with a digger on a construction site, but not a pipe of the 500 mm size at Corrib. We all know this as engineers, Advantica confirmed it in their report for the Irish Government, but An Bord Pleanala simply refused to accept sense, they live in the world of the first year University student, who shouldn't have been allowed into University in the first place because he knows it all, particularly that what he is being educated on is all wrong.

Furthermore engineering data highlighting these issues is readily available; after all it was presented to them in the Advantica report. A guidance document on Quantified Risk Assessment for major accident scenarios was issued by the Province of Sachsen in August 2009 summarising the technical knowledge for this subject (http://www.smul.sachsen.de/lfulg/13916.htm). With regard to rupture of pipelines this can occur due to maintenance activities, but surprise, surprise is less likely to occur with larger diameter pipelines. Furthermore earth covered pipelines and pipelines outside a potential impact area of falling objects are assumed to have no pipeline rupture. Even if the 9 km pipeline which had been refused permission had been installed over ground in a possible impact zone the equation that would have applied for failure frequency leading to a pipeline rupture is:

$$\lambda = \frac{1{,}1 * 10^{-5}}{DN^{2}} \text{ [1/a*m]; } \qquad DN > 15$$

Which is equivalent to 0.4 x 10^{-6}, which is less than one in a million and as such it is not even significant. One must remember that with an underground pipeline, such as at Corrib, the risk is considerably lower. In fact in Europe the chances of an aircraft you are travelling on crashing are about 2.5 x 10^{-5} (one in two hundred and fifty thousand), do we ban air travel? However, in the Corrib case An Bord Pleanala just refused to accept the facts as political considerations without doubt applied, such as not upsetting the Green Party, who had to stay in Government in order for the €60 billion bank bailout (NAMA) to be approved.

7.4 An Board Pleanala refusing to comply with legislation on Access to Information on the Environment

As somebody who was highly qualified in the area of major accident hazards I found myself looking at increasing horror at what was going on with An Bord Pleanala. They effectively have brought industrial development in this country to a complete halt. I make no bones out of it, I earn my livelihood out of this sector, as do thousands of others, not to mention the people who work in and are associated with the industrial facilities we develop and construct. On the 22nd September 2009 I sent in an Access for Information on the Environment request, nothing too fancy just:

- The legislative basis for the recent Oral Hearing of circa 19 days on the Corrib pipeline rerouting.
- The procedures for conducting an Oral Hearing to this legislative basis, such as choice of staff, training of staff, specific areas of legislation to be addressed, areas outside of the legislation that should not be addressed, recommended time frame for oral hearing, relationship to competent authorities for Environmental, Safety, etc.
- The specific approach of the Board to moving from a previous system of decision making based on Patronage to one which implements the Environmental Acquis.

I even reminded them a month later when it was due. I got no reply. Raising this issue of non-compliance with the Head of State and Head of Government didn't make any difference, they couldn't care less about non-compliance, after all they are neck deep in it themselves. I was getting fed up with all of this so I sent in a new request for information of 13th December 2009 relating to:

- The recent decision of the Bord to refuse permission for a 25 mm thick steel gas pipeline of 500 mm diameter clearly did not follow accepted engineering practices for risk associated with thick walled large diameter pipelines, such as is established in the attached risk methodologies of the Dutch Authorities (RIVM). Furthermore if one considers that there were eight accidents involving fatalities with the wind energy industry in 2008 alone and established risk contours for the population in the vicinity of these turbines have been established, see summary of Dutch (Novem) guidance attached, then why are the Planning Guidelines for Wind Turbines developed in conjunction with An Bord Pleanala saying in Section 5.7 and other sections the very opposite? Furthermore it is clear, such as in Dundalk, that turbines have been erected in Ireland in close proximity to populated areas. There is therefore no consistent approach taken by the Board to the considerations of costs, benefits and alternatives in relation to risk and land use planning and decisions are clearly been made on what suits political considerations. I am therefore requesting the parameters the Board applies to assessing risk and determining acceptance criteria.

This also included my original request and was copied to the Minister for the Environment, Local Government and Natural Heritage. The issue about wind energy needs some explaining, turbine blades can disintegrate or lumps of ice build up on them and these projectiles can be flung several hundred meters, with resulting damage to anybody who is in the way. Guidelines on the Environmental Risk of Wind Turbines in the Netherlands were issued in 2002 by Novem.

Scenario	Expected value	Recommended value [1/yr]
Loss of entire blade	$6.3 \cdot 10^{-4}$	**$8.4 \cdot 10^{-4}$**
Loss at rated speed		***$4.2 \cdot 10^{-4}$***
*Loss at 1.25*rated speed*		***$4.2 \cdot 10^{-4}$***
*Loss at 2*rated speed*		***$5.0 \cdot 10^{-6}$***
Loss of blade tip	$1.2 \cdot 10^{-4}$	**$2.6 \cdot 10^{-4}$**
Collapse of entire turbine at tower foot	$2.0 \cdot 10^{-4}$	**$3.2 \cdot 10^{-4}$**
Collapse of rotor and/or nacelle	$5.8 \cdot 10^{-5}$	**$1.3 \cdot 10^{-4}$**
Falling down of small parts from nacelle and hub	$1.2 \cdot 10^{-3}$	**$1.7 \cdot 10^{-3}$**

Frequency of occurrence of scenarios of wind turbine failure relevant for risk analysis from Dutch Guidance.

Type of turbine				
Rated power [kW]	500	1000	1500	2000
IR = 10^{-6} contour [m]	111	124	134	144
IR = 10^{-5} contour [m]	20	28	37	39

Individual Risk (the probability of a person will die from an accident if he is permanently at the place without protection) as a function of distance from the turbine.

So if one is located within 144 meters of a common 2 MW onshore wind turbine there is the magic one in a million risk of a fatality. On the other hand one can pick up the Department of the Environment, Local Government and Natural Resources planning guidelines on wind energy development, which were updated with the help of non other than An Bord Pleanala in June 2006 and read:

- "There are no specific safety considerations in relation to the operation of wind turbines. Fencing or other restrictions are not necessary for safety considerations. People or animals can safely walk up to the base of the turbines. There is a very remote possibility of injury to people or animals from flying fragments of ice or from a damaged blade".

So clearly one rule is applied to those who are 'friends' of the political process and another rule is applied to those who are not, i.e. no restrictions on locating wind turbines only gas pipelines of lesser risk!

What happened after the submission of this request was the usual farce. On the 17th December I got a reply (REP7726/JG/09) from Eddie Kiernan, Private Secretary stating:

"I have been asked by Mr. John Gormley, T.D., Minister for the Environment, Heritage and Local Government to acknowledge receipt of your recent email in connection with Aarhus Request relating to Risk Assessment and Acceptance Criteria in Planning".

On January 14th over a month after I had sent in my request I finally got a reply from Richard Kennedy, Facilities and Environmental Management, An Bord Pleanala that my request was receiving attention and pointing out it was only forwarded to his section that day. By the 16th January I had not received my reply so I let my displeasure be known highlighting that it was three months since I had sent in the original request. On 19th January I got an e-mail from Patrick Cosgrave, the Access to Environmental Information co-ordinator within An Bord Pleanala. He was also stating that he had only received my application on the 14th January and wanted me to call him to discuss this matter further and to clarify the details of my request. I was getting fed up with this. I had already requested an internal review based on the previous reply, so given that I was abroad in Azerbaijan or somewhere I emailed and stated if he had problems with it, it should have been addressed to me in writing several weeks ago and if he wasn't technically qualified to deal with it he should get somebody in his organisation who was to deal with it.

I then got a formal reply on the 20th January (AIE Request - GA0004) from a Pierce Dillon, Senior Executive Officer, Facilities and Environmental management. The answer to my first question of the 22nd September was the Planning and Development Acts: http://www.irishstatutebook.ie/2000/en/act/pub/0030/index.html .

The answer to the second question was the link to An Bord Pleanala Procedures for conducting an oral hearing: http://www.pleanala.ie/publications/2005/oral_hearing.htm .

For the third question relating to moving to a system of decision making which implements the Environmental Acquis I got the following reply:

- "Article 9 (2) of the regulations clarifies that a public authority may refuse to make information available if the request is considered unreasonable due to the range of material sought, if the request is too general or if the material requested is not yet completed. In this regard, this element of your request is deemed to general. If you wish to resubmit your request, I suggest that you be more specific in your request. It would also help the Board if your request could make reference to some factual information".

If you think that was snotty wait until you read what I got for the final request relating to the risk and land use planning.

- "Article 9 (2) of the regulations clarifies that a public authority may refuse to make information available if the request is considered unreasonable due to the range of material sought, if the request is too general or if the material requested is not yet completed. In this regard, the Board was unable to establish what "recent decision of the Board" that you are enquiring about. My colleague Patrick Cosgrave attempted to clarify this issue with you and asked that you contact the Board to discuss this matter further, however you declined this request. It should be noted that the Board is always willing to offer assistance to members of the public by helping them reformulate requests. If you intend to resubmit this request, I suggest that you contact my colleague Patrick Cosgrave. We will then, hopefully, be able to assist you in making a properly refined request".

Amazing since half the information request sent to him was clearly concerning the Corrib development, there was no indication in the other half that it was anything other than Corrib. Let's be serious how many recent refusal decisions had the Board made about 500 mm diameter pipelines?

So I lodged my €150 to the Commissioner for Environmental Information and they accepted my appeal (CEI/10/0002). As I clarified to the Commissioner in late February and early March - when Oral Hearings, which are often called public debates, are held in other Member States their purpose is to act as a clarification exercise to the public. The authorities there are competent in the relevant subject matter, the requirements of the legislation and their duties in disseminating this information to the public. After all this is what is specified in the legislation, namely Directives 2003/4/EC and 2003/45/EC, in which environmental information has to be actively and systematically disseminated to the public to achieve the widest possible systematic availability. In particular with regard to projects involving an Environmental Impact Assessment procedure the main reports and advice issued to the competent authority have to be made available to the public.

On a personal level and as a German speaker I have had a number of German technical personnel, who have had to attend oral hearings in this jurisdiction, comment to me the astonishment they had in the disjointed manner these proceedings were conducted in which they seemed to be a public debate on how the relevant legislation, which would regulate the project, would be interpreted or developed to suit the occasion.

Furthermore consideration of chapter 6 of my Submission to the Joint Oireachtas Committee on Climate Change and Energy Security http://www.oireachtas.ie/viewdoc.asp?fn=/documents/Committees30thDail/J-Climate_Change/Submissions/document1.htm clearly highlights a number of examples of the completely unsatisfactory manner in which An Bord Pleanala is conducting oral hearings and making decisions outside the relevant legislation and its proper implementation.

When I reviewed what I received as a reply from An Bord Pleanala to the first two requests I was shocked. Not only was there no proper training and selection requirements for inspectors demonstrated, but there is no mention of the requirement of the Authorities to actively and systematically disseminate the specific environmental information, such as is specified in Article 2 of Directive 2003/4/EC and includes administrative measures, policies, legislation, plans, programmes, environmental agreements, measures or activities designed to protect environmental elements. In addition there was no mention of the requirement under Directive 2003/35/EC that the main reports and advice issued to the competent authority have to be made available to the public, rather an arbitrary statement about documentation submitted to the Board in which there is no clarification as to what are the main reports and advice under which the decision is being made. Note the Guidelines on Procedures on Oral Hearings as provided as a reply to item 2 were last modified on the 12th December 2007.

Therefore I can only conclude unless additional information is presented by the Office of the Commissioner for Environmental Information related to the planning legislation and An Bord Pleanala procedures for Oral Hearings that there are serious non-compliances with the Environmental Acquis in relation to the conduct of these Oral Hearings.

Unfortunately the reports of those who attended the Corrib Oral Hearing, such as the Submission from Pro Gas Mayo (to follow), clearly show how no attempt was made during the Oral Hearing to clarify or even adhere to the legislative basis described in the previous Section.

"Report from Brendan Cafferty, Secretary of Pro Gas Mayo group in connection Onshore upstream gas pipeline relating to the Corrib Gas Field Project, Co. Mayo

I am secretary of the Pro Gas Mayo group, an unpaid voluntary organization of ordinary citizens acting totally independently of Shell, Government or other statutory body. We support this project for the benefit of the area, the country and country at large. WE feel it is a major infrastructural development. WE made submissions to An Bord Pleanala and were there as a consequence

There was a 19 oral hearing into the onshore pipeline. Of those 19 days 5 days were spent cross-examining on the topic of Design, Safety & Stability. The Board's assistant safety inspector showed a video of a gas explosion early on in his questioning. The video was of an experimental explosion. At no time did the Board refer to the regulations and legislation under which risk and safety would be measured in Ireland.

At one point in the proceedings the assistant safety inspector asked one of Shell's consultants to draw contours on a map of the consequences of a full-bore rupture. Under duress Shell agreed but these contours came to be known as the kill-zone. The inspector ignored the risk by ignoring the probability of failure (very small, order of 0.0000000001 chance per year) and focusing on what would happen if it failed. Obviously this was incredibly damaging.

No clear definition of risk or what the board considers to be an appropriate hazard distance was given. In fact this is evident from the recent correspondence between Shell (RPS) and the board and the fact that they ask An Bord Pleanala to clarify the hazard distance as referred to in the November letter.

The difference between hazard and risk was not laid clearly before us. In the nature of things and the fact that there are local protests about this project, much scope was given to local objections and this was understandable, even though many of the contributions were not relevant.

In a letter dated 2nd. November 2009 to all interested parties, An Bord Pleanala inform RPS on behalf of Shell that it considers the onshore pipeline to be unsafe, yet they ask for some questions to be clarified. This seems to be confusing. They also indicated in the same letter that they would be disposed to approve the pipeline going up through Sruwaddacon Bay. This in our view will present many environmental and logistical problems.

Originally there was approval for another onshore pipeline which was about 70 metres from the nearest house. An independent professional group of consultants, Advantica, were appointed by the Minister in 2005 to examine this route. They reported that it was safe. However, in the interests of harmony I think, Shell indicated a new route which was 140 metres distant from nearest house, and it is this which is before An Bord Pleanala under the Panning and Development (Strategic Infrastructure) Act 2006. This all seems very incongruous to us. Already 1.5 billion euros has been built for the Terminal nearby and for which permission was given by An Bord Pleanala, and the Environmental Protection Agency".

With regard to the third Request for Information dated 22nd September 2009:

- The specific approach of the Board to moving from a previous system of decision making based on Patronage to one which implements the Environmental Acquis.

Member States which are compliant with EU legislation regulate development according to the Environmental Acquis. A statement to this effect should be available on documentation produced by An Bord Peanala.

With regard to the final request relating to risk and land use planning - Directive 2003/35/EC is perfectly clear in that with regard to projects involving an Environmental Impact Assessment procedure the main reports and advice issued to the competent authority have to be made available to the public. This information on risk and land use planning should by law have been made available to all parties before the Corrib Oral Hearing. The fact that no such parameters are publicly available with active and systematic dissemination is a clear breach of the relevant EU Directives.

Unfortunately this conduct of disjointed oral hearings in which things are made up to suit the occasion goes on over and over again. If we take the position of Special Areas of Protection and Special Areas of Conservation under the Natura 2000 regulations, one would think given what is reported in the Media for Corrib and other projects, is that these areas are like the Sistine Chapel. Over 40% of the Croatia will fall under Natura 2000 legislation as did the biogeographic region of Macaronesia in 2002 comprising 34% of the total land area of the Canary Islands, Azores and Madeira. It is not the purpose of this legislation to sterilise large tracts of land from human development but rather to ensure its conservation status.

EU Habitats Directive 92/43/EEC (as amended) is clear in Article 4 (4) that once a site is designated, the Member State shall as soon as possible and within six years at most, establish priorities in the light of the importance of the sites for maintenance and restoration, at a favourable conservation status of the a natural habitat or a species for the coherence of Natura 2000, and in the light of the threats of degradation or destruction to which those sites are exposed. Article 6 (1) further states that for special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types and the species present on the sites.

Article 6 (3) of the Habitats Directive says:

- “Any plan or project not directly connected with or necessary to the management of the site but **likely to have a significant effect thereon**, either individually or in combination with other plans or projects, shall be subject to **appropriate assessment** of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that **it will not adversely affect the integrity of the site** concerned and, if appropriate, after having obtained the opinion of the general public“.

An appropriate assessment is what the developer does in an environmental impact assessment procedure. The term integrity is not defined in the Directive but is understood as the maintenance of the ecological structure and function(s) of the site related to the qualifying features (equal to the species and habitat types for which the given site has been designated / classified, i.e. the conservation objectives). If the appropriate assessment has not revealed any significant adverse effect on any of the qualifying features of the any of the sites, there is no legal reason under the Habitats Directive to refuse to grant a permit.

Does Ireland establish these plans required under EU Legislation for these designated sites and present them at Oral Hearings? In reality precious few of these plans have been developed (http://www.npws.ie/en/PublicationsLiterature/ConservationManagementPlans/FullCPs/) so once again total confusion is generated in the interests of a decision on sustainable development! Broadhaven Bay, where the 9 km pipeline was proposed to skirt, is a Special Area of Conservation (SAC 000472), documented with a site synopsis on the website of the National Parks and Wildlife Service with a date of September 2001. Yet there is no published management plan for this Special Area of Conservation.

7.5 The EPA – how they broke the legislation with regard to Corrib

While the EPA does maintain a very good record of its licensing process on its website (www.epa.ie) simply maintaining a website is not active and systematic dissemination as is required by EU legislation. It is particularly disturbing that over the several years of controversy on the Corrib project the EPA never made any public comment on the issue. While their regulatory process clearly demonstrated environmental compliance the media continuously pumped out the message of environmental problems and the saga of the heroes and martyrs to the environmental cause.

However, when the Irish Academy of Engineering presented a report to the public demonstrating the huge technical and economic problems with the Administration's wind energy programme, Dr Mary Kelly the Director General of the EPA immediately stepped outside her legislative remit to support this programme. It's just like the days of the feudal lords, if you have friends in high places they look after you!

Industrial and agricultural activities with a significant pollution potential are regulated in the EU by Directive 2008/1/EC on Industrial Pollution Prevention and Control (IPPC). The activities that are required to have an IPPC permit are defined in Annex I of the Directive and are based either on a certain type of industrial sector, such as oil refining, or a specified threshold above which the legislation applies, such as the number of pigs or poultry on a farm.

The IPPC process has been successful throughout the EU but it is a very detailed process requiring significant input from the regulator and industry. Because of the complexity and cost involved in this permitting process it is the EU's approach that only industrial sectors with a significant polluting potential should come under the IPPC process. In general throughout the EU smaller industrial facilities with less significant environmental impacts are regulated at the municipality level using traditional permitting arrangements, such as individual conditions set for air, water and noise under previous national legislation.

The industrial facilities that are listed in Annex I of the IPPC Directive include:

- Energy Industries: 1.2 Mineral oil and gas refineries.

Furthermore there is an EU IPPC Guidance Document (BREF) issued for mineral oil and gas refineries. Typical gas installations in Europe in the North Sea consist of a number of central platforms with satellite platforms. The gas is delivered to the central platform where it is dried (removal of water). Condensates are partially removed, but these are re-injected into the produced gas. Chemicals, mainly methanol, which is sometimes called wood alcohol, are added to the gas stream either at the well head or prior to transmission to prevent solid hydrate formation and limit corrosion in the underwater pipeline. Offshore platforms are not included in the scope of the BREF and in most Member State, including Ireland, are not subject to IPPC licensing.

Many natural gas sources world wide are 'sour', in that they contain traces of hydrogen sulphide, a very odorous and toxic gas. This has to be removed in a gas treatment plant. However, natural gas sources in Ireland do not contain hydrogen sulphide and simple treatment only is required comprising of slug catching, dehydration and condensate separation, i.e. purification is not required.

The Corrib facility is built onshore to comply with the Framework Safety Directive 89/391/EC given the hazards involved with offshore work that are now avoidable due to 'adaptation to technical progress'. The decision was taken to license it to IPPC even though similar simple gas treatment plants operating offshore do not fall under IPPC.

Formation water arises from the well head, essentially entrained droplets carried over with the gas stream. It is impossible to predict exactly how much water will be carried over from a well head as initially the pressure in the well head is high and slugs of water get carried over, while as the gas is withdrawn the pressure decreases and the water carryover reduces considerably. A figure of 4 m^3/day would be typical for Corrib although in the Kinsale Field it is running at about 1 m^3/day. The World Health Organisation estimate a volume of 137 litres of waste water per person per day, so 1 m^3/d is equivalent to the waste water load of 7 people.

Is the aqueous discharge from the Corrib production process significant? Significance can be assessed by the quantity of the emission, the harmful components in the emission and the sensitivity of the receptor. Clearly in terms of quantity the volume of emissions is no different from that of a standard small hotel. Furthermore the gas quality in the well head is very pure so the level of contamination in the produced water is very small and it undergoes treatment and monitoring before discharge. There is no reason why this discharge point could have been local to the facility into the bay but the design of the facility went way above minimum requirements and the outfall location was chosen 12.7 km offshore. As was to be expected the IPPC licensing process showed no impact from this discharge. However, as a gesture of 'goodwill' in order to achieve the financial settlement with the local fishermen the outfall was agreed to be relocated 80 km offshore into even deeper and more remote water. SEPIL then applied for a technical amendment to their IPPC license.

The problems then started. From what I heard from professional colleagues who were involved with the permitting process, the EPA repeatedly stated that 'optics' were involved and instead of a simple technical amendment to the licence, the whole process had to be reopened and a new licence applied for, a time consuming and expensive process. Further details on this can be found on the

article I wrote for Inshore Ireland on this subject (Attachment 5) entitled “Is the environmental licensing procedure open to political interference?”

There are undoubtedly elements in the media and the ‘Shell to Sea’ groups who are junkies to all of this. However, there is a legislative process that has to be followed and whatever gig is playing in the Parish is completely irrelevant. From the above it is clear that the emission of the produced water was neither significant nor new, it was simply being relocated to an area of even less sensitivity as a gesture of ‘goodwill’ to enable a compromise be achieved with local community interests.

The Irish EPA has clarified that a technical amendment can be used for:

- Making another change to a wording of a condition, which will have no significant effect on the environment.

As clarified above the existing aqueous emission does not have a significant effect on the environment, neither will it at its new location. If we look at the Directive then Article 2 (11) defines a ‘substantial change’ as a change in operation which, in the opinion of the competent authority, may have significant negative effects on human beings or the environment. Article 12 (2) is clear in that Members States shall take the necessary measures to ensure that no substantial change planned by the operator is made without a permit issued in accordance with this Directive. Sensible isn’t it, the change has to be substantial, i.e. significant negative effects on human beings or the environment, before a new permit has to be issued.

The problem in Ireland is that we don’t apply EU legislation correctly. When we first started licensing industrial facilities in Ireland to the Air Pollution Act of 1987 powers were granted to review a license if there was a ‘material change’ in the nature or extent of emissions. When the EPA Act of 1992 came in the same terminology was used again. However, nowhere is a ‘material change’ defined in the legislation. So if one was to put extra toilets in an administration building connected to a licensed industrial facility, then this could be interpreted as needs be by the licensing authority as a ‘material change’ to generate a requirement to reopen the licensing process. Fortunately things moved on and in 2003 the EPA Act was updated by the Protection of the Environment Act to comply with conditions of the original 1996 Directive on Integrated Pollution Prevention and Control. The Section related to IPPC licensing was updated to include Section 90 4(b) relating to review of licenses:

- A license may be reviewed by the Agency if there is a proposal to make a substantial change to the nature or extent of an emission.

Nowhere is a ‘material change’ mentioned anymore with regard to IPPC licensing. Indeed the article in Attachment 5 clearly shows how the Agency is acting outside its powers (Ultra Vires) with regard to the Corrib project as it was justifying its stance based on a ‘material change’, clearly applying considerations in a legal process that are based purely on ‘optics’. One could even point out that even the EPA Act of 1992 is clear in Section 52 (2e) that in carrying out its functions the Agency shall ensure, in so far as is practicable, that a proper balance is achieved between the need to protect the environment (and the cost of such protection) and the need for infrastructural, economic and social progress and development. This clearly is not happening.

Unfortunately this is not the only such circumstance where these issues are occurring. The IPPC Directive (consolidated version 2008/1/EC) states in Article 9 (4) as is stated in Section 86 (3) (C) the Protection of the Environment Act, 2003:

- "The emissions limit values and equivalent parameters shall be based on Best Available Techniques (BAT), **without prescribing the use of any technique or specific technology,** but taking into account the technical characteristics of the installation concerned, its geographical location and the local environmental conditions. In all circumstances, the conditions of the permit shall contain provisions on the minimisation of long-distance or transboundary pollution and ensure a high level of protection for the environment as a whole".

The operator clearly knows his process best and the legislation recognises that he should be left to optimise it at the most economical conditions to meet the targets set in the license. In Ireland the principles of integrated pollution control were established prior to the introduction of the IPPC Directive in 1992, when the EPA Act entered force. It is worth noting that under Section 84 of this Act that the powers of the Agency are extremely comprehensive with regard to specifying how a facility is designed, operated and maintained. The Protection of the Environment Act of 2003 updated this legislation to include the additional requirements of the IPPC Directive above but maintained in Section 86 the same powers with regard to specifying details relating to a facility. For example the EPA can specify the method of treatment of an emission, including the provision, operation, maintenance and supervision of plant and other facilities and the use of specified procedures and codes of practice, i.e. the EU legislation is not properly transposed.

The reality of this in Ireland is that poorly trained EPA inspectors are constantly interfering in the optimal design and operation of facilities with resulting significant additional costs that have to be incurred by the operator for no tangible gain to the environment. Industry knows only too well now that the costs of operating here and the time involved in getting licences approved or modified are far, far worse than other Member States.

Is there any tangible benefit to this increased expenditure and timeframe? No. However, the reality of the world, especially in Ireland where the media is out of control, is that:

- Somehow the news media sense and publicise issues that will attract the public's concern and attention (creating customer readership and therefore advertising), and this concern appears to feed upon itself and attract more publicity. In turn, these arouse public concerns and capture the attention of politicians and aspiring politicians.

Regulators then feel under extreme pressure having to deal with angry members of the public and interference from political masters. They naturally wish that the 'project' will go away, sometimes as a result seizing opportunities to aid the project to 'go away'. The net result is huge delays and cost overruns occur, even worse is the huge degree of uncertainty that results at the critical inception phase of the project. Projects can and do get 'lost' under these circumstances. It's as clear as daylight in Ireland now, 'optics' is the name of the game and who's next? Time to – ***Go Elsewhere!***

7.6 How the State Administration treated the Irish technical resources which delivered the project

In my letter of the 16th October 2008 to SEPIL which was copied to the Head of State and previously referred to in Section 7.2, I made it very clear:

"The Corrib project is not just a Shell project; it has had a large input from Irish Engineering and Technical Resources in the Regulatory Approval, Design and Construction, it is as much a product of Irish technical input as the nominal name plate of the developer on the Gate. This abusive campaign against the project, fuelled by unfair media reporting is without doubt causing emotional stress to those involved on the project but is also impacting on the longer term financial prospects for future repeat work in the engineering of industrial projects in Ireland".

Unfortunately the controversy and violence that occurred at Corrib site, not to mention an explosive device left in front of the SEPIL office in Dublin which had to be disarmed, was directly fuelled not only by the action of thugs in Irish society but also clearly by the behaviour of elected and non-elected officials in State employment. There were many examples of this; indeed it is also clear in that taxpayers' money was used to fuel this controversy and resulting abusive behaviour.

There are four Local Authorities in the Dublin Region and the area in which I grew up in belongs to Dun Laoghaire Rathdown (DLR) County Council. In the final weekend of August each year a Festival of World Cultures is run by DLR. A bit of music, etc, but there is also an Environmental Awareness Exhibition run in the Town Hall. In 2007 I dropped by this exhibition, it was clearly a political rally for the Green Party. As an exhibition it clearly had no basis in the Environmental Acquis and also contained a 'Shell to Sea' stand, an organisation that was also leafleting outside the Council Building. Given the anti-democratic and abusive behaviour of this organisation, which in layman's terms could be described as radical eco-warriors, I formally contacted the council requesting clarification and received the following reply:

"Dear Mr Swords,

I refer to your letter dated the 25 / 8 / 08, as attached. The details of which I do not dispute.

Cool Earth was project managed on behalf of Dún Laoghaire-Rathdown County Council by Cultivate Sustainable Living and Learning Centre. Unfortunately due to human error it was not brought to our attention that Shell to Sea were exhibiting at Cool Earth until very late in the arrangement. At that stage we took a decision to allow them to exhibit.

In our defence I would like to point out that Cool Earth is an environmental awareness exhibition and the aim of the event is to raise awareness of all areas of the environment, including environmental campaigning and for the public to form their own opinions from what they learn on the day. Shell to Sea was one of 50 exhibitions. However should the event run again, I assure you that Shell to Sea, nor any similar group, will not be invited to exhibit.

Do not hesitate to contact me if I can be of further assistance to you in this regard.

Marie Grant BA M. Sc.

Environmental Awareness Officer

Dún Laoghaire-Rathdown County Council

County Hall

Personally I wasn't happy that taxpayers' money was been spent on 'environmental campaigning', certainly there was nothing being presented which was informing the public about their rights under Aarhus legislation or any other aspects of the Environmental Acquis. I then replied that:

"Thank you for your reply on this matter and I am pleased to see that DLR has concerns over the presence of such organisations at its Cool Earth project. However, I would like to point out that despite the involvement of Cultivate Sustainable Living in organising this event it was promoted as a DLR event and hence as I pointed out there is a connection between DLR and the forum provided to the Shell to Sea campaign. I my opinion therefore instead of the acknowledgement and clarification to me below that this acknowledgement be made officially in the environmental section of the DLR newsletter we receive on a regular basis".

No such public clarification was to my knowledge ever made, in fact, such as in December 2009, the DLR newsletter is delivered to the houses with a similar one from the Green Party. Coincidence? I don't happen to believe in the fairies! In summer 2008 I was very busy working on an EU technical aid project in Croatia but in summer 2009 I went in to check the website about the forthcoming environmental awareness exhibition and discovered it was just another rally for the Green Party again called 'Cool Earth'. Not only was any connection to the implementation of the legislation in the Environmental Acquis extremely tenuous but the main speaker, Junior Minister Trevor Sargent of the Green Party, is a populist politician who has a history of anti-democratic and abusive behaviour to those of us who work in the scientific and technical community. In fact he actively supported the 'Shell to Sea' campaign and in early 2010 had to resign his position as a Minister as he had sought in writing to influence a criminal investigation.

So I had about four weeks of correspondence from mid July 2009 on in which DLR refused to answer me some simple questions relating to what environmental legislation the exhibition was connected to, what was the criteria for choosing the speakers, what was the budget, etc. In my work on the EU technical aid projects I have had on occasions Study Tours of senior regulators from Central and Eastern Europe visit Ireland. As one such group stayed in Dun Laoghaire, I was checking out 'youtube' for clips to show then in advance of their visit and came across one of the 'Shell to Sea' campaign leafleting outside their stand at the DLR 'environmental awareness' exhibition: http://www.youtube.com/watch?v=DcrgBdfXGJ8

Most of the issues I have had to deal with in this book are not pleasant but the email below I got from Kate Hynes in DLR on the 10th August was priceless:

"FW: Let me know if you are happy to send this

Dear Mr. Swords,

Thank you for your email dated 27th July to Marie Grant. Marie is no longer working in the Council, therefore I did not receive this email until now. Also thank you for your email dated 3rd August to the environment dept expressing concern over the Cool Earth fair and the other environmental issues.

Cool Earth fair is an environmental awareness exhibition to raise awareness about all areas of the environment such as composting, green technologies (solar panels, mini wind turbines), water conservation devices, greener transport options, etc. The website www.coolearth.ie lists exhibitors, activities and the schedule for the weekend.

When the Cool Earth fair commenced it was managed for the Council by Cultivate Sustainable Living. As Marie Grant already explained to you post the event in 2007 the Council only became aware of the inclusion of the Shell to Sea stand when it was too late in the event. Marie also gave you an assurance that they would not be included in future. Since 2007 Dun Laoghaire-Rathdown County Council ran this exhibition in house and Shell to Sea were not included last year. This year Dun Laoghaire Rathdown County Council are running the exhibition in-house again and I can assure you that Shell to Sea will not be exhibiting in Cool Earth this year or in the years to come. We are currently in the process of working with our IT department to remove the Youtube clip. As Cool Earth is run in house in conjunction with the Festival of World Cultures, the time, efforts and resources that go into the planning and delivery of the event is not quantified separately.

If you require any further information, please do not hesitate to contact me.

Kind Regards,

Kate Hynes - Environmental Awareness Officer BSC MSc CIWM

Dun Laoghaire-Rathdown County Council

Environment and Culture Department, Level 3"

Her boss(es) clearly didn't believe I should have the information I had requested. However, I was insisting on my rights under Aarhus and sent in the correspondence I was having with DG Environment over non-compliances in Ireland. The door then started to open, I got a letter from Lynda Fox, Communications Officer, Corporate Services, who was responsible for the Access to Information on the Environment Regulations, which strangely her colleagues in 'Environmental Awareness' knew nothing about, not to mentioned completely failed to inform the public about as is their legal obligation to do so.

So I sent in my Aarhus request to her pointing out among others:

"It is clear then that there is a huge potential in the scientific and technical community within DLR for implementing measures to meet the targets of the Environmental Aquis. Yet the scientific and technical resources that are available are not represented at the exhibition and indeed the red carpet has been rolled out for those who have a strong track record in abusing them!"

With regard to the funding arrangements I wrote in my request what I thought was jest:

"What were the funding arrangements and responsible persons? One would hope that Minister Gormley[16] simply did not send round a check and ask for a 'gig' to be held for his 'ideological friends'. There must be budgeting arrangements, a criteria for each budget, a process by which money can be drawn down from those budgets and the names and responsibilities of those that approved the distribution of the funds".

When I did get my reply I found out that:

- "The exhibition was not linked to any particular legislation. The Council selected Environmental National Government Organisations, businesses and charities that work towards alleviating the effects of climate change".
- "Due to the restrictions on the space available at the exhibition a limited number were invited to exhibit. The selection criteria for the guest speakers was individuals who have a background or interest in environmental issues".
- "The funding was provided for in the Council budget for the year. The Director of Environment and Culture is Richard Shakespeare. Expenditure on Cool Earth is approved by the Senior Executive Officer, Mr John Guckian".

Neither did I get my offer of an internal review. However, I'm not really interested in local politics but it did show the totally arbitrary manner in which mine and other taxpayers' money is being spent. Unfortunately in a manner which is deliberately abusive to those of us who work in science and technology.

It wasn't the only such circumstances. On 12th August 2009, Lorna Siggins of the Irish Times, who has being running a crusade against the Corrib Project, wrote an article on "Monitors say 'no ecological impact' from Shell spillage".

"THE SPILLAGE of a chemical additive and a small amount of oil during construction work at the Corrib gas landfall in Co Mayo have had "no ecological impact", according to monitoring consultants for Minister for Energy Eamon Ryan.

The spillage, estimated at 20 litres by the Minister's environmental consultant, EirEco, and at 15 litres by Shell, flushed into a fully enclosed trench where it mixed with rainwater.

Shell said an environmental response team pumped the liquid out of the trench into sealed containers, which were removed to a waste facility and that the liquid is biodegradable.

It said yesterday that all relevant statutory bodies had been informed and a full report was being completed. The chemical additive is used as part of "hydro-testing" of the 83 km offshore pipeline, which has now been laid in full from Glengad out to the manifold at the Corrib gas field".

[16] John Gormley TD, Leader of the Green Party and Minister for Environment, Heritage and Local Government.

So a bucket of suds spilled over and had to be mopped up. However, why does the Minister have an environmental consultant called EirEco? Surely it is just a coincidence that the Green Party Minister and campaigner against the project oversees a Government Department (DCENR) that commissioned this company Eirco to:

- To carry out spot check monitoring on the construction activities of SEPIL for the landfall and pull in of the gas pipeline and with the aid of a telescope to carry out spot checks of the vessel activity. Weekly reports were to be submitted to DCENR and the spot checks should not take place on the same day each week.

Both myself and a colleague from the EU technical aid projects, Oisin O'Sullivan, were keen to know certain details, such as

- What legislation was the legislative basis for this monitoring with reference to the relative Directives in the Environmental Acquis?

- What was the justification? For example the costs incurred, the benefits foreseen and alternatives considered, for instance with regard to the alternatives there is always the 'do nothing' option or using the existing environmental compliance division of regulatory authorities, such as Mayo County Council.

- Who approved this financial expenditure?

Neither of us got a reply to our AIE requests, as we have seen from the previous Section 6.5, the DCENR doesn't believe in answering such requests.

There is also the manner in which the Oral Hearings were run by An Bord Pleanala, as I have already highlighted there is a total failure to comply with Directive 2003/35/EC in which the main reports and advice issued to the competent authority have to be made available to the public before the Oral Hearing. If we consider Germany they have since the mid-seventies defined the 'Stand der Technik', i.e. the state of technology, for high pressure gas pipelines in a series of technical regulations (TRGL). These were reviewed in the last few years and combined with those for long distance pipelines carrying oil and other chemicals (TRFL). If one looks at what was submitted by SEPIL to An Bord Pleanala it is clearly the same as is required by the TRFL. Why wouldn't it be, the EU Directives applicable, such as for Environmental Impact Assessment and Pressure Equipment, are identical. Indeed the European Standards relating to the technical details of design and construction of the pipe work are all the same, after all that is what everybody manufacturers to and they are harmonised to the Directives. The difference in Ireland being An Bord Pleanala would not accept the technical details submitted by SEPIL and instead were abusive to the engineering specialists presenting it, such as for five days 'grandstanding' about the 'kill zone', which had no relevance to the implementation of the legislation governing the project[17].

[17] Engineering is not about absolutes. It is the practical application of science relying on quantification, experience and the application of judgement. If society wants to benefit from the advantages of modern technology they have no rights to zero impact or zero risk. In other jurisdictions oral hearings are a clarification exercise. In Ireland they are deliberately arranged to be completely adversarial. No attempt is made to clarify the legislative basis but rather to undermine and demean the developer so that power can remain with the regulator to refuse on the basis of a technicality.

Finally as I have already mentioned the behaviour of politicians, who are paid for by the State, and the manner in which they stepped outside the democratic process and engaged in abusive behaviour to those of us engaged on this project was completely unacceptable. Michael D Higgins TD is President of the Labour Party, Ireland's third largest party, which is in opposition. He actively campaigned against the Corrib project, even travelling to Norway to protest against Statoil, who have a 20% share in the project. On the 10th November 2008 I was travelling back from Galway on the evening train after a business meeting and as Michael D Higgins was also sitting in the same carriage I took the opportunity to sit down beside him and explain what I did for a living, i.e. I had spent twenty years in industrial development and ten years in Central and Eastern Europe implementing the industrial pollution control and major accident hazards legislation on EU technical aid projects. He started to get a bit nervous but then when I explained I had worked on the Shell Corrib project he turned completely abusive, stating that his only involvement was with 'petroleum licensing' issues and then yelling for the train conductor to be called so that the train could be stopped and the police called to arrest me. I pointed out quietly to him the article in the Irish Times in which he was campaigning for the terminal to be halted, dismantled and re-erected at a location that suited his political objectives. He just yelled even more, so I left him be on the train and took the opportunity instead to e-mail him at his Oireachtas e-mail address the next morning.

As far as I was concerned it was clear from the files of the regulatory agencies that he had never engaged in the democratic process concerning the regulation of the project. Furthermore he and his 'associates' had access to information and had access to a judicial review procedure. Even though he was a public representative, instead of respecting the democratic institutions he had instead engaged in a 'Trial by Media in the Court of Public Opinion'. It was the same old story I have seen in twenty plus years of working in Ireland. Michael D Higgins and many others in the media and political scene do not believe they have to acknowledge democratic due process and believe they can instead 'free load' onto any particular bandwagon which is perceived to be popular at the time, which begs the next question as to who decides what is popular and as to who ensures that the truth is reported accurately. Michael D Higgins and his 'associates' at no stage established that there were environmental or safety issues related to the project and when I engaged him face to face on this issue he was immediately abusive.

Michael D Higgins, President of the Labour Party and active campaigner against the Corrib process. When I asked him why didn't he work through the democratic process and what was the basis for the environmental and safety issues that justified his 'Trial by Media in the Court of Public Opinion', he just became completely abusive.

As far as the correspondence, I made it clear that "in no other country would such a compliant and essential project for the nation's infrastructure be subject to such physical intimidation, disrespect for democratic structures and have the President of the third largest Political party actively engaging in a Trial by Media in the Court of Public Opinion'" According to Michael D Higgins he wasn't engaged in such a 'Trial by Media" and he considered the correspondence closed, which was a bit rich since all of his involvement was outside the proper appeals process for complaints / objections to the project. I then wrote to Eamonn Gilmore TD, head of the Labour Party and public representative for my constituency of Dun Laoghaire Rathdown. I pointed out:

- "Ireland can either consider itself a "Knowledge Based Society" in which respect for the for the democratic institutions and legislative structure occurs or it can be a "Populist Free for All" in which the media decides what is appropriate policy and development for the country and the politicians dance to that tune. Unfortunately Ireland is rapidly falling in to the latter camp and is no longer considered a stable environment with regard to investment decisions".

I even went as far as to ask for a clarification with regard to the future direction of governance in Ireland and if the actions of Deputy Higgins to date with regard to the Corrib Development reflected the official position of the Labour Party or did the Labour Party respect the decisions of the planning authorities and Environmental Protection Agency.

I got not reply. However, I did get my answer nearly a year later on the 27th September 2009 when on the Sunday before the second Lisbon Treaty referendum I was walking by the People's Park in Dun Laoghaire and came across Eamonn Gilmore and Enda Kenny (the head of the second largest Irish Political party) campaigning for a yes vote. I explained what I did for a living, including ten years working on EU technical aid projects, highlighting the total hypocrisy of Irish Politics to European Legislation and the willingness of the Political Process to abuse the Irish technical and scientific resources that deliver the necessary infrastructure of the State. Enda started interrupting and blathering away about how €5 million of taxpayers' money had been wasted. Amazing not only is he a sitting TD for Mayo but he didn't know that the Garda bill alone was in excess of €15 million, that €200 million in lost revenue had occurred and that the country was completely off limits for any further industrial development. Furthermore his fellow Fine Gael TD in Mayo, Michael Ring, was one of the biggest campaigners against the project and had never been censured by his Party for acting outside the democratic process.

All I can conclude with is Michael O' Leary of Ryanair, who time and time again speaks out about the complete and utter gobshites in Irish politics and senior positions in the administration. As the Irish people are his customers, he doesn't saying the obvious – what are the people who put these individuals in positions of almost unlimited power?

7.7 Corrib – Where will it end?

Shell is a commercial company, which delivers hydrocarbons to its customers. In Nigeria it has to operate with a corrupt administration and the presence of show trials. It is no different in Ireland. It is not Shell or any other company's objective to straighten out the corruption in a country, as that is the duty of its citizens. Instead Shell's aim is to bring the hydrocarbons to its customers as quickly and as efficiently as it can.

If in a matter of a dispute there is Access to Justice available Shell or any other company would take that option. Clearly in Ireland in the Corrib case it would just develop into a show trial and as far as I am aware at the moment (April 2010), SEPIL is considering running a 5 km tunnel under the Broadhaven Bay Special Area of Conservation, the European site which has no proper management plan established for it by the Irish Administration. This is going to cost an awful lot of money, not to mention yet another Oral hearing, etc. In the meantime the terminal infrastructure, etc, which was constructed for €1.5 billion will be simply mothballed. Yes folks as taxpayers you will fund 25% of the costs associated with all of this.

Personally I despair at the stupidity, when I was working in the Ukraine between 2000 and 2003 my colleagues in the Kiev office were supervising the construction of a new gas pipeline running through the South of the Ukraine into Romania. It passed through the Danube delta, the most important biosphere wetlands in Europe, both an UNESCO and European protected site. Why not – it was a simple trench and the pipeline was dropped in and the grass and foliage was back to normal in a few months, there were no significant impacts that would have an adverse affect to the integrity of the site.

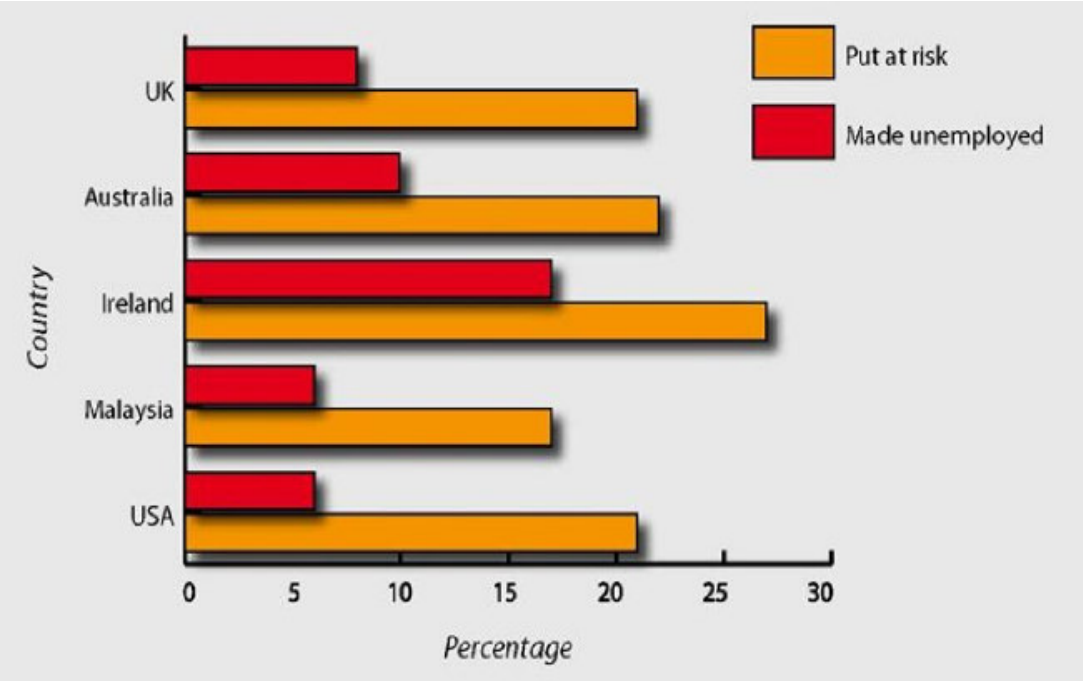
Some of the Irish technical resources, who were responsible for delivering the Corrib project, twice completing one million hours of accident free construction work. It will be a small minority of them which will work in Ireland over the next decade.

The biggest losers are of course those of us who make a livelihood in Ireland in the field of industrial development. As I stated already in Section 3.1 StatoilHydro, who have a share in the controversial Corrib project in County Mayo, stated to the Media in August 2009 even before An Bord Pleanala refused to give planning permission to the final 9 km of pipeline:

- *"When we look at political risk with practical consequence to project progress then Ireland unfortunately stands out as an example".*

The game is up in Ireland, one can't invest considerable time, money and resources in a country where the regulatory system is corrupt and acts outside the legislative basis, particularly when if it does go wrong, which it frequently does, there is no Access to Justice.

In August 2009 Matt Stalker, who is the Press and External Relations Officer of the Institute of Chemical Engineers contacted me with regard to the results of a worldwide survey of the economic downturn and the impacts it was having on Chemical Engineers. The results from Ireland had been pretty alarming as the unemployment level was twice that of the wider global survey and the numbers of members put at risk was also above average. Globally 50% of the members predicted a modest upturn in 2010 and only 17% predicted even more pain ahead. However, in Ireland 49% of the participants believed things would get worse in the coming year, outweighing the 30% who predicted an improvement.



Institute of Chemical Engineers' survey in August 2009 measuring the impact of the global downturn. The results from Ireland were particularly alarming – no projects, no employment.

As I highlighted in an e-mail to the EU Commission (DG Environment) and the Private Office of the Taoiseach on the 22nd October entitled "Officials of the Irish State acting outside the Legislative Basis and Failing to Respond to Aarhus Requests" with regard to the job losses that were being documented by the Institute of Chemical Engineers:

"As a technical specialist in industrial development and implementation of the Environmental Acquis, I am qualified as a professional Chemical Engineer (Fellow of the Institute of Chemical Engineers) and a Chartered Environmentalist (Member of the Institute of Environmental Impact and Assessment). Traditionally in Ireland chemical engineers would be seen as somewhat boring to a public brought up on a diet of the heroes of the revolution, GAA, cultural activities, etc. Yet who designed the pharmaceutical, chemical, electronic, medical device, power generation, food and beverage, etc, plants around the country? Who twenty years ago successfully completed the small projects, then the medium sized ones and were then entrusted with serious investment sums for the €500 million plus projects? You would expect that as a country it would make a wee bit of sense to keep these guys going, especially since given the right climate they bring in investment, much of it significant, rather than suck subsidies from the taxpayer, such as circa. €130,000 per annum per wind energy job. Indeed for every hour of design work they complete there are about 50 hours of construction related activity to follow not to mention a few decades of operation in running the production facilities. We need to re-engineer energy delivery systems, waste technologies, etc, to meet the targets in the Environmental Acquis not to mention develop the manufacturing expertise and facilities to generate the income to finance it – these guys are qualified with a track record!!!"

Again I received an e-mail from Paul Mooney in the Taoiseach's Private Office:

"I wish to acknowledge receipt of your email of 22 October, 2009 which will be brought to the Taoiseach's attention as soon as possible".

In my case it is very simple, twenty years ago as a young engineer, who returned to Ireland, I experienced the stupidity associated with a violent campaign against a perfectly good pharmaceutical project in East Cork which eventually caused the company Merril Dow to pull out of Ireland, see previous book for more details. One lived in hope; there was new European legislation and structures being put in place. With experience came the bitter reality, it didn't matter what standards were met or public presentations made, the witch hunts in the media and the political scene just got more abusive. With Corrib we have now reached the stage where the legislation doesn't even count anymore, decisions are clearly being made outside the legislation for purposes of political patronage.

Elsewhere the scope and understanding of the Environmental Acquis has continued to develop. A developer of an industrial project clearly understands what standards he has to meet and which location is suitable or unsuitable for his development. In my case if I was to prepare such a regulatory package in Ireland having met all the requirements, the chances are I would be obstructed by the regulator failing to complete his necessary assessments within the statutory timeframe, then there would be the usual 'controversy' in the media and the failure to the regulator to comply with the legislation in place. The accusations would fly that "the project wasn't right or the documentation wasn't properly prepared". On the one side would be the perplexed developer, who has invested considerable time and money in a fully compliant project, on the other would be the considerable number of technical personnel whose livelihood for the next few years depended on this project passing through the approval stage. In the middle – myself!

Believe me, I've been there, I don't want to be there again. What has happened in Corrib is not just a simple matter of disrespect but what has passed well outside the minimum standards set by law into outright abuse. As I concluded in my previous book:

"As a Principal Chemical Engineer and Environment Health and Safety Specialist I have never experienced outside of Ireland anything that approaches the ignorance, intolerance and abusive behaviour that I have experienced directed at my professional colleagues, valued clients and friends in industry in Ireland over the last twenty years. The truth is I now prefer to go to the airport rather than continue to stomach it any longer; there is no financial or emotional future for me in Ireland under the circumstances that currently prevail. Others are / will also leave! Ireland is a democracy; a system of Government that millions in Europe in the 20th Century died to protect, it only works and has a future if the public take it seriously and respect it!"

History repeats itself. Heinrich Böll was one of the great German post war novelists, who won the Nobel Prize for literature in 1972. One of his most famous novels, Irisches Tagesbuch (Irish Journal) recounts his time in Ireland in the early nineteen fifties, when he lived in Achill in Co. Mayo. Chapter 4 is entitled "Mayo – God Help us", which is followed by a section in which he visited a deserted village, which to him looked as if it was the bombed out remains of a settlement. In it he recounts how he met an old woman, left behind in the ruins of the village, who had six children of which only two remained in Ireland. One daughter had married and had raised six children, of which two were in England and two in the United States. Personally I have sat in a boardroom in Ireland and discussed with an industrial developer, who knew the scene in Ireland very well, the various regions of the country which were gobshite zones. If you tried to build anything there, no matter what, there would be just howls of protest and anti-democratic behaviour, it simply wasn't worth it. Mayo is of course one of those zones, so to are Cork and Galway and in comparison with other Member States Ireland is now a complete disaster.

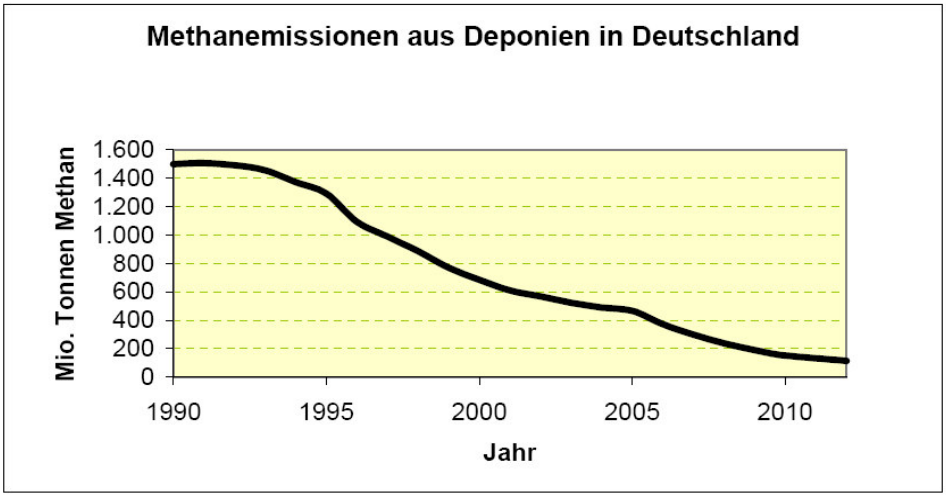
8. WASTE MANAGEMENT IN IRELAND – IDEOLOGY RULES AGAIN

8.1 The alternatives to meeting targets for renewable energy

As I had previously documented in Section 3.3 there are eleven different energy sources listed as being renewable. There is also the 20% target for energy from renewable sources to be achieved by 2020. Europe is extremely diverse; the circumstances in Northern Finland are very different from those in Cyprus. Therefore EU Legislation always places a strong emphasis on both 'Local Conditions' and Scientific Assessment. The targets that have been developed in EU legislation are based on preliminary assessments carried out by EU scientific experts reflecting the principles of costs, benefits, alternatives and proportionality of each measure. Each Member State is different, for instance Sweden has a target of 49% of energy to be obtained from renewable sources. Naturally it helps that Sweden is already able to meet half its electricity demand from Hydro resources. This is not true of the other Member States, such as Ireland. Ireland for instance has a target of 16%, which is more in line with the general target of 20% for the EU as a whole.

As has already been demonstrated in Section 5.9 the whole renewable energy programme in Ireland is now based around wind turbines. This most certainly was not the intention of the legislation which had as one of its stated objectives: To reduce the environmental impact associated with land filling of waste and land spreading of agricultural wastes. If we consider the land filling of waste there is a win – win situation. Not only do landfills cause ground and water pollution but the rotting of material in landfills produces methane, a gas that is twenty one times more global warming than carbon dioxide.

The German TASi regulations of 1993 implemented the phase out of landfilling of municipal waste by June 2005. As less biodegradable waste was sent to landfill due to the resultant diversion to municipal incineration, the methane production in the existing landfills slowed as the material was biodegraded and no new material was added.



Quelle: Umweltbundesamt

Reduction in methane emissions from German landfills in million tonnes for period 1990 to 2010. The base year of 1990 represented 31.5 million tonnes of carbon dioxide equivalent (Kyoto target for Ireland is 63 million tonnes)

90% of Germany's landfill emissions have already been reduced and furthermore the heat and power output of 77 municipal incinerators in Germany is equivalent to an additional annual reduction of almost 4 million tonnes of carbon dioxide equivalent, equal to the emissions of about 1.6 million cars. This comes from the fact that 50% of municipal waste is of biological origin and the combustion of this in a municipal incineration plant can be seen as climate neutral, i.e. renewable. From a financial perspective the heat and power output of the German incinerators is also of significance, being sufficient to provide the energy needs of a large city such as Berlin. German recycling rates at 62% are the second highest in the EU, only Austria at 64% reporting higher values.

The diversion of waste from landfills is therefore a key component of EU Environmental Policy, not only from the perspectives of global warming but also as it reduces land and water pollution. Directive 99/31/EC, the Landfill Directive, requires a staged implementation of a 35% reduction in biodegradable fraction going to landfill by 2016, but falls far short of the total phase out of landfill that Germany achieved in 2005 and Switzerland in 2000. The Irish State has failed significantly to meet the targets set for January 2010 in this Directive as there is a 100% reliance on Landfill for disposal in this State at the moment. Note this 2010 target was a special derogation on targets set for 2006. Therefore Ireland is facing fines of potentially hundreds of thousand of euros per day for failure to comply with this Directive, indeed the media has reported a figure of €270 million per annum.

The importance of Municipal Waste Incineration in providing a source of renewable energy is well established, such as in publications from the European Environment Agency and the German Federal Environment Agency.

The other aspect is the significance of biogas. When the Iron Curtain went up in 1945 Western Europe was cut off from the highly productive agricultural lands to the East. Security of supply in food production was therefore a very real issue and naturally led to the Common Agricultural Policy, in which the main goal was to maximise yield. This led farmers to more intensive agricultural practices, which for a while raised their incomes. However, this had undesirable environmental consequences, the primary one being the excessive production and consequential land spreading of animal slurries, which led to the resulting pollution of both surface water and groundwater, primarily from nutrient enrichment from nitrates. The 1991 Nitrates Directive (91/676/EC) sought to control the practices of intensive agriculture, which were leading to the nutrient enrichment of European waters. Ireland simply hasn't been able to meet the requirements in this Directive or that of the 2000 Water Framework Directive (2000/60/EC).

Irish farmers are facing a stark future; EU subsidies will be phased out within a few short years. Survival will be based on what one can earn rather than what cheque comes in the post. Ireland is suited to animal husbandry, but that leads to animal manures, the land spreading of which has to be controlled / limited to prevent nutrient enrichment of the aquatic environment. The options are simple; either restrict the number of animals, with resulting loss of earnings or treat the manure before land spreading.

For agricultural and food wastes that are highly biodegradable the appropriate technology is anaerobic digestion to produce biogas, which is then combusted for heat and power generation. It's another win-win situation. Furthermore both biogas and municipal waste combustion produce a steady output of electricity, unlike wind energy they don't need to be backed up by alternative generation, which is running inefficiently to match variable intermittent supplies. Neither do they need massive expansions in the grid capacity. While offshore wind tariffs are being given at €140 per MWh (14 cents per kWh), biomass and biogas projects are operating quite efficiently at tariffs not much more than half this (7 to 9 cents per kWh) and there are no hidden extras, such as back-up generation and massive grid expansions. Indeed there are massive benefits in that landfills are being eliminated and water pollution significantly reduced.

A biogas facility in Germany, as was highlighted in the previous book such facilities have been refused planning in Ireland by An Bord Pleanala because of equine related activities in the surrounding area or because they weren't scenic enough, a bit rich given that 1,500 wind turbines were approved by the same regulator.

For more information on the different renewable technologies I would recommend the reader to check out "Sustainable Energy without hot air" http://www.withouthotair.com/ , which can be downloaded for free and is a very clearly presented and informative book from David MacKay of Cambridge University. David clearly demonstrates the important role municipal incineration (Waste to Energy) can play. I also like the clear analysis on the use of geothermal and aerothermal heat pumps. One simply cannot beat these electric units as a source of heat that is both clean and substantially renewable. When coupled to a low carbon source of electricity, such as the French grid, which is 90% carbon neutral, the results in avoidance of green house gases are astounding.

However, we have Green ideology instead of environmental protection here in Ireland. I despair at the stupidity of Sustainable Energy Ireland (SEI) and their endless campaigns for wood burning stoves. Despite the massive improvements that have occurred in air quality in European urban areas since the 1970s, there are 380,000 premature deaths occurring due to air pollution with an average statistical reduction in life expectancy of 9 months. The majority of this is due to pollution from particulates and the EU has set the target of a 59% reduction in emissions of particulates by 2020. As the Finnish Environment Agency (SYKE) stated in their 2008 report on the state of the environment in Finland:

- "Fine particles, carbon monoxide and hydrocarbons are particularly generated when damp wood, waste wood or rubbish is burnt in old inefficient fireplaces. Particulate emissions from fireplaces are a significant health risk, since low chimneys can leave dense clouds of such particles floating in the vicinity of their source".

Like everything in Ireland there is no proper plan or policy to achieve the targets set in EU Environmental Legislation, as usual everything is sacrificed by the elected and non-elected officials on the altar of political popularity and expediency. History is once again repeating itself; one approach receives the ideological blessing and has to be pursued with complete vigour regardless of expenditure of time and resources. The other is branded as impure and is subject to a witch hunt to rid it from the planet. Quantification of cost / benefits of the various alternatives and informing the public of these issues simply does not occur.

As I documented in my previous book it is particularly depressing when one considers that of the €30 billion plus to be spent on wind energy more than half the greenhouse gas reductions could be obtained by putting our waste in waste to energy plants rather than landfills. This would have had a capital cost of less than €1 billion and instead of the turbines starting to fall apart after about five years the waste to energy plants would be still functioning after thirty five years. Furthermore biogas plants are not capital expensive, a €100 million would for instance be sufficient to construct four large regional units. These measures should have been the primary focus of the implementation of Directive 2001/77/EC on the provision of electricity produced from renewable energy sources, after all it's not rocket science, one picks the low hanging fruit first, particularly when it is orders of magnitude lower in cost and brings additional benefits in other environmental spheres. It didn't happen and instead the complete focus was on providing support to the 'friends' in the wind energy industry and putting the other alternatives out of business as they did not suit the currency of decision making, i.e. perceived popularity as is controlled by the Irish media.

8.2 Ideology – The justification for no to incineration and yes to MBT

In the previous book Chapter 6 is dedicated to "Eco-Nonsense Irish Style – Incinerators". Nothing demonstrates the stupidity of the Green ideology versus the practical approach to environmental protection enshrined in the Environmental Acquis than the fundamentalist approach of the Irish Green Party to obstructing the implementation of incineration at any cost.

John Gormley the leader of the Green Party and the current Minister of Environment, Local Government and Heritage has a long history of obstructing incineration technology as it does not fit the interpretation of Green Ideology here in Ireland, which is really crazy as Jurgen Trittin Germany's Environment Minster from 1997 to 2005 has regularly sung their praises and how this technology was key in helping Germany to massively exceed the targets in the Landfill Directive (Trittin is a leading German Green Party member). It is clear that as a Minister John Gormley is using his office to restrict the amount of waste available for incineration and obstruct the development of municipal incineration facilities. In a proper society with a proper access to justice he would be facing court proceedings. However, this is Ireland, instead he will have his ministerial pension and in a few years' time the taxpayer will pick up the bill for the inevitable legal proceedings against the Irish State, not to mention the reduced quality of environment that results as a consequence due to the improper implementation of the legislation.

Indaver's Municipal Waste to Energy (Incineration) facility under construction north of Dublin in Co. Meath. A ten year battle through the regulatory phase was required at a cost approaching €20 million, over ten times what would be required for regulatory approval in another Member State. The plant will incinerate about 200,000 tonnes per annum of waste in the process producing 17 MW of electricity in a continuous and reliable manner, 50% of which is classified as renewable energy. Note a Dublin to Cork express train at full output is generating 2 MW.

I have already highlighted the completely unsatisfactory behaviour of the Joint Oireachtas Committee on Climate Change and Energy Security in Section 6.3, in which their approach was to refuse to analyse the technical content of the Submissions and instead conduct a 'straw pole' of what the various Submissions supported. You would think that this August Body would have analysed and reflected on the benefits which waste to energy can bring, particularly as 2.5% of the country's greenhouse gases can be attributed to waste and not only can this be eliminated by using waste to energy technologies but the fines for non-compliance with the Landfill Directive (1999/31/EC) can be avoided. Wrong! See:

- http://debates.oireachtas.ie/DDebate.aspx?F=CLJ20081015.xml&Node=H2#H2

It is quite scary; facts and figures don't count for anything, as I mentioned already one might as well hand them over a roll of toilet paper. The only currency is perceived popularity, nothing else counts. Warren Buffet didn't get to be one of the richest men in the world without having some wisdom. As I highlighted already one of his sayings is "A public opinion poll is no substitute for thought". In Ireland we don't have 'thought' in preparation of policy, just reaction to whatever is peddled in the low quality media. No wonder the country is going down the tubes, in a democracy you get what you put into it.

However, when elected and non-elected officials start acting outside the legislation for purpose of personal gain, then this is not just a simple matter of a bad democracy but corruption. To explain what is currently happening in Ireland it is useful to go back to the analogy of the airplane. Before the EU Commission broke up the cosy cartel between the State owned airlines of Aer Lingus and British Airways on the Dublin to London route, it was per kilometre by far the most expensive flight in the world. Let's say the Minister Gormley waste management approach was applied to this route. Then certain airlines would be penalised by levies as their technology didn't meet his arbitrary 'Green' criteria. Others conforming to his criteria, i.e. his friends, would get significantly reduced levies and access to permits to operate the route. Of course lots of obstacles would be placed in the way of those that didn't correspond with the arbitrary 'Green' criteria, such as endless delays or outright refusals in obtaining operating permits, specifications that their planes should have a certain percentage occupancy, specifications limiting the total number of passengers that they can carry per annum so as not to take business away from the 'friends'. We would even have the criteria that if more passengers fly the route per year than he thinks appropriate he will apply massive levies to curb their enthusiasm, i.e. discipline their behaviour. Lovely – this is exactly what is happening with waste policy in Ireland.

Mechanical / Biological Treatment (MBT) systems are seen as the 'Green' solution. Volume is reduced through composting (rotting) and the material is mechanically sorted to remove various fractions, such as plastics, bottles, etc. Admittedly it does bring a stabilisation and minimisation of the risk potential together with a significant weight and volume reduction through biological decomposition, which could count towards the diversion of biodegradable waste from landfill. Unlike the Irish the Swiss do things by assessing them and looking at the numbers, even as far back as 1999 the Swiss Environment Agency (BUWAL) was stating:

- "The problem is that the fractions obtained are generally of poor quality which makes their recycling somewhat difficult. The compost, for

instance can often not be used for agricultural production. The combustible fraction is rarely of good quality. Its incineration in cement works or industrial boilers is, therefore, rarely possible. In addition, working conditions on sorting lines (industrial sorting can never become totally automatic) presents health and ethical problems. Finally, however well the sorting is carried out, there always remains a fraction (or residue), frequently highly polluted, which needs to be incinerated or landfill".

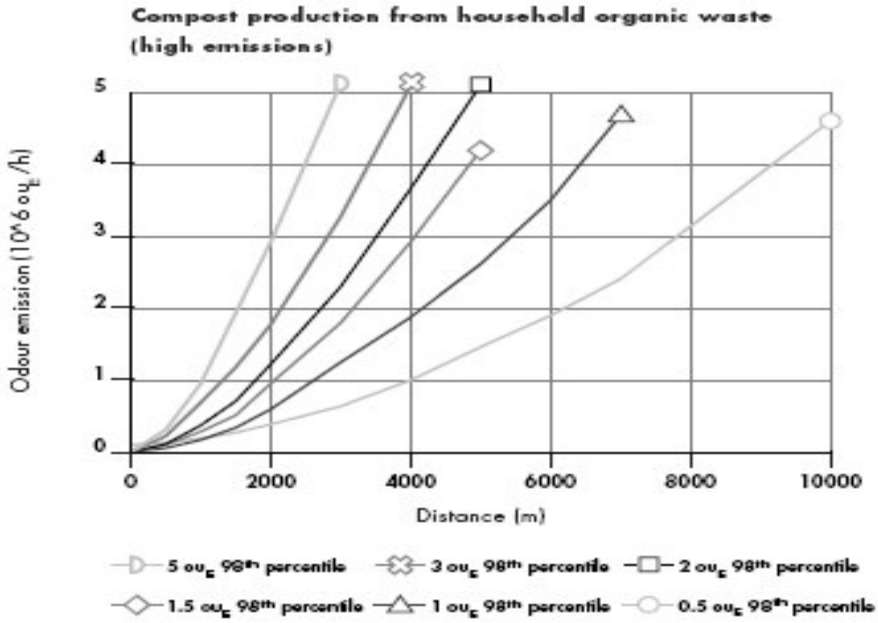
Sensible people the Swiss, at that time there was only one small MBT plant in the country, it is long since gone. The European Environment Agency report on Diverting Waste from Landfill highlighted in the previous section concludes in Section 10.5.4:

- "Mechanical-biological treatment (MBT) is usually used to treat mixed municipal waste. Materials suited for incineration or recycling are separated and biological treatment is then used to reduce the volume and organic content of the remaining fraction. The quality of the biologically treated waste fraction is usually poor and therefore it is landfilled or used as low quality compost, e.g. as landfill cover".

Not only does MBT not provide a proper treatment process for the waste but there is no energy gained in the process. It's also highly unattractive from the perspective of odours and biological spores (human health), but it is the darling of Minister Gormley and his officials.

Compost produced by an MBT plant. On the 23rd February 2010 the Irish Independent reported on Minister Gormley turning the sod for Ireland's first MBT plant in Navan. "It will treat 250,000 tonnes of municipal waste into a coal substitute for cement production and compost for agricultural use. Mr Gormley said the plant was an "outstanding example" of the type of environmentally sustainable development he wants to bring in".

Figure 2 Distances to contour lines representing 0.5, 1.5, 3 and 1.5 ou_E/m^3 as 98th percentile in the case of various odour nuisance levels in the range 0–5 (10^9 ou_E/h)



Odour data taken from Netherlands' Emissions Guidelines to Air (NeR) for composting plants. The 1.5 OU/m^3 contour is the point at which an odour nuisance occurs. If you live within a kilometre of an MBT plant be prepared to have it pong.

Biological spores and molds may be natural, but they ain't healthy. Check out Farmer's Lung on google if you want to know more. Rotting waste produces loads of spores; this has of course been investigated. In Germany they found elevated concentrations in the 200 to 500 m zone around MBT plants. Of course under Directive 2003/4/EC this information on the environment should be disseminated to you, if you can't find it on the website of Minister Gormley's Department http://www.environ.ie/en/ , you can always send in an AIE request relating to this "outstanding example" of the type of sustainable development he wants to bring in. In fact to quote the good Minister from his website

- "I firmly believe that we can achieve our diversion targets without an over reliance on incineration. The Programme for Government copperfastens this move away from a dependence on incineration or landfill by aiming for world class standards in terms of recycling levels and greater emphasis on technologies to mechanically and biologically manage our waste".

Lovely – I would have no problems living right next to or working in a Waste to Energy plant. An MBT plant, you must be joking, not only is such a plant an environmental and health hazard but it doesn't even provide a solution to the environmental problem, it is just an ideological crutch to a man's political madness. The Swiss were right as usual because they stick to the facts.

8.3 How the Department of the Environment breaks the Legislation to suit the Minister's ideology

In order to comply with the terms of the 1999 Landfill Directive regional waste plans were drawn up in the following two years in Ireland. These were subject to detailed public consultation. By and large they included an incineration element as the main disposal option. However, the development of these projects, such as I have pointed out for the Indaver project in Meath, was obstructed and delayed at every turn. Indeed there is only one other Municipal Incineration project approved, which is for Dublin City. A cynic would currently say with some element of truth that all of Minister Gormley's efforts seem to be directed at stopping the Dublin City incinerator in his constituency. .

Waste disposal facilities, such as landfills, incinerators, etc are subject to the Environmental Impact Assessment Directive. As I mentioned already with regard to the Department of Communications, Energy and Natural Resources where an Environmental Impact Assessment needs to be considered for a project then the administration is legally obliged to complete a Strategic Environmental Assessment for the relevant programme according to Directive 2001/42/EC. A Strategic Environmental Assessment must document among others the impacts on the population, i.e. socio-economic issues and give a description to the proposed alternatives to the programme. This never happened. Instead Minsiter Gormley and the Department of Environment, Heritage and Local Government prepared an "International Review of Waste Management Policy", which was published on their website in mid November 2009: http://www.environ.ie/en/ . To put it bluntly this document does not reflect EU and National legislation relating to Environmental Protection, instead its authors engaged in pseudo-science for the purpose of politics.

The following text is on this document is based on the short report I prepared at the end of December 2009 and submitted to the Garda Bureau of Fraud Investigation.

The EU common environmental policy is based on the precautionary and preventive action principles, on the principle that environmental damage should to the extent possible be rectified at source and on the principle that the polluter should pay. However, it is important to realise that EU Environmental Legislation is not based on zero impact but on consideration of the costs, benefits, impacts and alternatives available. An overriding principle of EU Legislation is the Principle of Proportionality, which requires that the extent of the action must be in keeping with the aim pursued. When applying the general principle of proportionality, the European Court of Justice frequently states that the principle requires an act or measure to be "suitable" to achieve the aims pursued, or it rather concludes that a decision is disproportionate because it is "manifestly inappropriate in terms of the objective which the competent institution is seeking to pursue".

There are major deviations from EU Legislation, in particular the Principle of Proportionality, in the "International Review of Waste Management Policy" as the document reflects an anti-incineration ideology rather than a proper review of EU and National Legislation and its proper application. The European Union's approach to waste management is based on three principles:

Waste prevention: This is a key factor in any waste management strategy. If we can reduce the amount of waste generated in the first place and reduce its hazardousness by reducing the presence of dangerous substances in products, then disposing of it will automatically become simpler. Waste prevention is closely linked with improving manufacturing methods and influencing consumers to demand greener products and less packaging.

Recycling and reuse: If waste cannot be prevented, as many of the materials as possible should be recovered, preferably by recycling. The European Commission has defined several specific 'waste streams' for priority attention, the aim being to reduce their overall environmental impact. This includes packaging waste, end-of-life vehicles, batteries, electrical and electronic waste. EU directives now require Member States to introduce legislation on waste collection, reuse, recycling and disposal of these waste streams. Several EU countries are already managing to recycle over 50% of packaging waste.

Improving final disposal and monitoring: Where possible, waste that cannot be recycled or reused should be safely incinerated, with landfill only used as a last resort. Both these methods need close monitoring because of their potential for causing severe environmental damage. The EU has approved a directive setting strict guidelines for landfill management. It bans certain types of waste, such as used tyres, and sets targets for reducing quantities of biodegradable rubbish. Another directive lays down tough limits on emission levels from incinerators. The Union also wants to reduce emissions of dioxins and acid gases such as nitrogen oxides (NO_x), sulphur dioxides (SO_2), and hydrogen chlorides (HCl), which can be harmful to human health.

The Thematic Strategy on the prevention and recycling of waste, which is part of the current 6th Environmental Action Programme, does not abolish the waste hierarchy. However, as knowledge about waste increase, more life cycle analyses and other types of research are available to assess policy options. For example if it is clear that it is more environmentally efficient to incinerate a material to recover energy than it is to recycle it, then that is the option that should be taken. To give one example, the Thematic Strategy Impact Assessment concludes that whereas, if plastic waste is clean and separated, it is best to recycle, when plastic waste is mixed it is more efficient to incinerate it to recover the energy. If the difference in environmental impact between the two options is negligible, then in principle the market should be allowed to find the balance between the two options.

Recommendation 8 of the International Review of Waste Management Practices proposes a levy on incineration based on the following financial charges:

Table 6-2: Proposed Structure for a Residual Waste Levy

	Proposed levy rates, 2010 2011 2012
Landfill (residual MSW not meeting the stability threshold under the EPA Pre-treatment Guidelines)	€40/t €60/t €85/t
Incineration / Advanced Thermal Treatment	€10 /t €20 /t €26 /t plus non-GHG pollutant related taxes (per kg of pollutant, all years) NHs € 9.15 VOCs € 2.50 $PM_{2.5}$ € 52.00 SOx € 17.30 NOx € 13.60 Cd € 26.00 Cr € 21.00 Hg € 7,400.00 Ni € 2.60 Pb € 740.00 Dioxin €46,000,000.00 As € 99.00
MBT processes	€5/t €12/t €20/t
Landfilling of Stabilised Biowaste, Standard Landfill	€5 /tonne sent to landfill €15 /tonne sent to landfill €25 /tonne sent to landfill
Landfilling of Stabilised Biowaste, Dedicated Cell	€0/ tonne sent to landfill €0/ tonne sent to landfill €5/ tonne sent to landfill
SRF to incineration	As for incineration, but expressed per tonne SRF
SRF to cement kiln	£0

These figures are derived arbitrarily and without respect to the legislative principles in force, in particular the non-GHG (greenhouse gas) pollutant related taxes. The current EU 6th Action Plan on the Environment is clear in that it requires "*those who cause injury to human health or cause damage to the environment are held responsible for their actions*". In other words these external costs need to be internalised to lead to more sustainable practices in energy, transportation, agriculture, etc.

The Thematic Strategy on Air forms part of the 6th Environment Action Programme and its function is to present a coherent and integrated policy on air pollution which:

- Sets out priorities for future action;
- Reviewed existing ambient air quality legislation and the National Emissions Ceiling Directive, which places a cap on each Member State's emissions, with a view to reaching long-term environmental objectives; and
- Develops better systems for gathering information, modelling and forecasting air pollution.

Under the Clean Air for Europe (CAFE) research programme was set up to develop, collect and validate scientific information about air pollution with the aim of reviewing current policies and assessing towards long-term objectives. The CAFE programme lead to the Thematic Strategy on Air and the following costs in € per tonne were established for damages from air pollutants:

NOx	SO_2	$PM_{2.5}$	VOC	NH_3
4,200 - 11,000	5,400 - 16,000	25,000 - 72,000	920 - 2,700	10,000 - 30,000

To help decide on the costs and benefits of different levels of action, various options were considered with reference to a scenario whereby all possible emissions abatement measures are deployed irrespective of cost. This is called the “Maximum Technically Feasible Reduction” scenario, but even if the EU undertook all measures available, irrespective of costs, there would still be significant negative impacts on health and the environment. This is a very, very important point that I will come back to with regard to renewable energy, just because there are environmental impacts and associated damage does not justify the expenditure of seemingly unlimited sums of money.

Various options between the baseline and the Maximum Technically Feasible Reduction scenario were then assessed by the CAFE programme to establish interim environment objectives that deliver progress in a balanced and cost-effective way. These full cost-benefit analyses included an analysis of impacts on competitiveness and employment. For the more ambitious scenarios the costs start to rise rapidly for a more limited gain in environmental benefits. Therefore the chosen level of ambition for the Thematic Strategy represents an optimal balance between economic and environmental goals, contributing to Lisbon and the Community’s Sustainable Development Strategy objectives, it is not the goal either to enforce zero emissions or implement the Maximum Technically Feasible Reduction.

It is clear if we consider the non-GHG related taxes proposed by this International Review for the common air pollutants sulphur dioxide (SO_2) and nitrogen oxides (NOx) emitted from incineration processes then clearly they exceed the maximum values established under the CAFE programme. Furthermore both sulphur dioxide and nitrogen oxides are to be found with practically all combustion sources, such as heating systems or vehicle exhausts, it does not matter to the individual in terms of impact whether they are derived from waste incineration or the neighbour’s fire place. If we consider that the National Ceiling Emission Directive (2001/81/EC) then the target set for 2010 for sulphur dioxide emissions from the Irish State is 42 kilotonnes and for NOx 65 kilotonnes. If we apply the non-GHG related taxes above to these emissions occurring from all sources then the resulting bill would be €0.73 billion for sulphur dioxide and €0.88 billion for NOx. This would be a completely excessive burden for the Irish consumer to carry.

Clearly EU and National Legislation does not require the Irish consumer to carry this financial burden. The principle of proportionality is that zero emissions are not sought for but that emissions are reduced to an optimal balance between economic and environmental goals. Incinerators are regulated by Directive 2000/76/EC which sets stringent emission limit values for a full range of air pollutants. In complying with these values incinerators have already met the balance between economic and environmental goals, as defined by Best Available Techniques (Directive 2008/1/EC on Integrated Pollution Prevention and Control). Additional levies on the remaining emissions as proposed by the International Review on Waste Management are not in compliance with this legislation and the principle of proportionality. Their only justification therefore is that of political ideology.

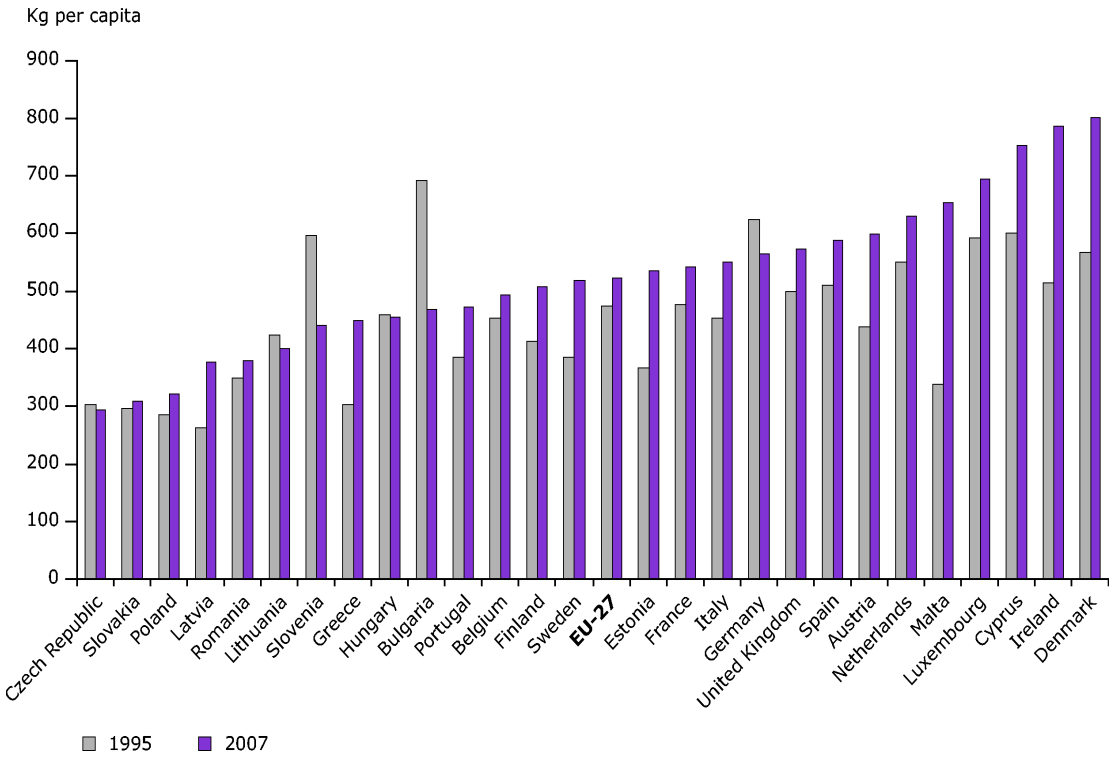
There were other substantial faults with the International Review:

- Bottom ash from municipal incinerators has been extensively investigated in other Member States, in particular the German LAGA-Mitteilung 19 Merkblatt über die Entsorgung von Abfällen aus Verbrennungsanlagen für Siedlungsabfälle (German Authorities' Standard for the disposal of waste from municipal incinerators). Recommendation 18 that bottom ash should be treated as hazardous is not in compliance with established practice developed by Member States and uses an obscure technical article to justify a hazardous rather than a non-hazardous classification for bottom ash.

- Recommendation 4 of the International Review of Waste Management requires the introduction of levies if households produce waste quantities above arbitrary defined targets. The Polluter Pays Principle applies in EU legislation but there is no transparent justification of either the targets or the charges proposed in this Recommendation. Experience in other Member States has shown that recycling rates have a finite value as the cost of additional recycling outweighs the environmental and other benefits. These Member States have then provided adequate disposal technologies, such as incineration, which fully comply with legislative requirements. Furthermore composting technologies suffer from the problem that low quality compost is produced, which when land spread leads to contamination and loss in quality of the soil.

- Section 8.1 of the International Review relating to Greenhouse Gas Emissions and Environmental benefits does not state the benefits that could incur with regard to Greenhouse Gases if the Irish State, like the overwhelming majority of Member States that have met and exceeded the targets in the Landfill Directive, implemented incineration (Waste to Energy) as was included in the original Regional Waste Management Plans.

However, I wasn't the only one highlighting this issue. Minster Gormley is currently in a running battle with the Dublin City manager over the 600,000 tonne Waste to Energy plant to be built in his constituency. It has already received full planning and EPA approval and the developer Covanta are ready to go into construction. The Minister wants to undermine it by restricting the amount of waste which goes to incineration so that it will no longer be economically viable, hence his levies, etc. In reality the issue is very simple



In Ireland we produce about 800 kg of waste per capita per annum. We are land filling 60% of it. Given that there is 1 million people in Dublin and a further 0.5 million in the neighbouring area there is more than enough waste for a central Waste to Energy plant of 600,000 tonnes per annum producing 56 MW of electricity, enough for 20% of Dublin's needs, 50% of which will be renewable.

The ESRI even produced on behalf of Dublin City Council a report on "An Economic Approach to Municipal Waste Management in Ireland", which was released at the end of February 2009. It noted the "international review must be considered a failure in respect of its proposals for setting residual waste levies, per capita targets for reduction in residual waste and guidance in the appropriate mix of waste technologies".

So the Irish public instead of their rights to have access to information on the costs, benefits and alternatives of a waste management policy coupled with public participation, which were enshrined in Directives 2001/42/EC and 2003/4/EC, were disseminated a load of ideological pure but technically false information. It didn't stop there, on the 30th March 2010 Minster Gormley set out his plans for the delivery of a new waste management policy for Ireland, in the process launching a consultation of a draft Bill, which had been approved by the Government, for application of levies to landfills and incinerators. No mention of any strategic environmental assessment, just legislation to give him the powers to slap a €120 per tonne levy on incineration of waste. If one was to send in a Submission to the consultation that didn't agree with the ideology it would be treated with as much respect as a roll of toilet paper. There is little doubt that the Bill will be rushed through the Dail (Parliament) in the near future in the closing days of a session. That Ladies and Gentlemen is how decision making and democracy works in Ireland and it will remain that way until the Irish people decide to do something about it, after all when the ESRI report was released, which called the 'kettle black' about the stupidity in his 'International Review', Minister Gormley was straight on to the media:

- "It is the Government that decides on waste policy, and it is not up to local authorities . . . to dictate to Government what national waste policy should be."

So let's forget legislation, access to information, public participation and God forbid – Access to Justice. The Government decides and you pay!!

8.4 The EPA and An Bord Pleanala acting outside the Legislation to suit Green politics

In the previous book I highlighted how in early 2009 the N7 Resource Recovery Project was refused planning permission by An Bord Pleanala (PL 06S.PA0006):

- "*The Board is not satisfied that sufficiently accurate data has been used in the modelling or that the models can reliably predict the effect of process emissions on ambient air quality close to the proposed stack. The proposed development would constitute an unacceptable risk of pollution of the environment and would, therefore, be unacceptable on environmental grounds having regard to the proper planning and sustainable development of the area".*

N7 Resource Recovery Project (Municipal Waste Incinerator) refused planning by An Bord Pleánala in which scientific principles were completely broken to suit the occasion.

However, the competent authority for matters related to environmental pollution and emissions from such a facility is the EPA. Indeed if one considers An Bord Pleanala's own 2007 guidance on Oral Hearings it states:

"The Environmental Protection Agency (EPA) is the body charged primarily with controlling emissions in Ireland. The Board is required, when considering an application for planning permission or approval for development which comprises or is for the purpose of an activity for which an integrated pollution control licence or a waste licence is required from the EPA, to take into consideration that the control of emissions arising from the activity, is a function of the EPA. In such cases, the Board is not permitted to attach conditions to a grant of planning permission or approval for the purposes of controlling emissions from the operation of the activity or related to or following the cessation of the operation of the activity.

However, the Board is required to take an overall view on the acceptability of the development and, notwithstanding the licensing of the activity under the EPA or Waste Acts, it will consider the totality of the environmental issues involved in the context of the proper planning and sustainable development of the area, and may refuse planning permission or approval on environmental grounds"

Directive 2003/35/EC, which we already mentioned with regard to the Corrib Oral hearing, clearly requires the main reports and advice issued to the competent authority or authorities to be made available in advance of the oral hearing. There was a short guidance note at that time from the EPA on their "Policy on Selection of Dispersion Models" developed in conjunction with An Bord Pleanala. Indeed for more than three decades computer models have been used around the world to predict emissions from stacks, the complex models have been continuously refined and they are based on actual measurements. For instance twenty years ago they used to release radioactive tracers along the Atlantic seaboard and track them as the low pressure systems took them into Eastern Europe. These models are conservative, they over predict ground level concentrations by a factor of at least two, we know that because continuous ambient air quality monitors have been installed outside many industrial facilities and actual results can be cross referenced to the modelling results. An example of this was the Irish Sugar plant in Mallow where the computer predictions submitted as part of the EPA licensing application showed significant exceedences of sulphur dioxide and nitrogen oxides ground level concentrations but actual monitoring by the company demonstrated values that were comfortably below the ambient air quality limits set by EU Directives.

The Environmental Impact Assessment Directive is very clear that the competent authority, in this case An Bord Pleanala, has to make available the main reasons and considerations on which the decision is based. If you look at the above there is a 'throw away' comment that they were 'not satisfied' with the modelling, which was done in accordance with the relevant guidance. Yet not a single fact or figure was given to justify this. If we go back to the legislation, the 1992 EPA Act is very clear in Section 50 relating to the Functions of the Agency, which include:

- "The provision of support and advisory services for the purposes of environmental protection to local authorities and other public authorities in relation to the performance of any function of those authorities".

Yet here we have a developer who has complied with all the requirements being accused of generating an "*unacceptable risk of pollution of the environment"* without any supporting information being available to justify that decision and the EPA, whose function it is to provide this information, being nowhere to be seen or heard. However, what is even more despicable is that in late 2009 the same EPA produced A Guidance Note on Air Dispersion Modelling from Industrial Installations (AG4) for public consultation. Guess what? It clearly demonstrated what we already all knew, i.e. these models work well and their predictions are on the conservative side. Bit late for the N7 Resource Recovery Project team, who not only lost all the money they had put into the project, but had An Bord Pleanala slap a charge of €142,380 against them for the cost of the whole 'show trial' they had to endure as part of the Irish democratic process. Let me tell you again, I'm not proud of my country and I say this based on seeing this type of nasty, corrupt ignorance time and time again.

Still it hasn't stopped here, if we look at the Indaver application for a combined municipal and hazardous waste incineration facility in Cork (PL04 .PA0010) this has been in and out of oral hearings, etc. Amazingly if one consults the Irish Times of 22nd January one can find:

"Opponents of a proposed €150 million twin incinerator development for Ringaskiddy in Cork Harbour have welcomed the decision by An Bord Pleanála following an oral hearing to refuse planning permission for part of the project dealing with municipal waste.

Indaver Ireland said that it remained confident of progressing the project after Bord Pleanála indicated that it was considering granting permission for both a hazardous waste incinerator and a transfer station if certain concerns were addressed.

Regarding the municipal waste incinerator, An Bord Pleanála had ruled that planning was not appropriate "at this time, having regard to both layout and lmiited size of the site and current strategy of the Cork local authorities in respect of waste management,"he said".

Yet there is not a single mention of any of this on the An Bord Pleanala website. To me it is highly disturbing. The regional waste management plan developed for Cork clearly called for thermal treatment. Now the Local Authority there has 'changed its mind' to suit political consideration and the developer is going to be refused by An Bord Pleanala based on an arbitrary waste management philosophy, which has not followed any proper procedures or public consultation and is not in compliance with the legislation on the Statute Books. I'm sure Indaver's parent company in Flanders, Belgium wish they had – **Gone Elsewhere!**

9. THE RIGHT TO A GOOD ADMINISTRATION – COMPLETELY VIOLATED

9.1 The huge bill to be paid due to the failure of the Union to implement the Renewable Energy Policy properly

Those that fail to learn the lessons of history are doomed to repeat it.

Pat Swords

April 2010

Europe