Submission to public consultation process for the Green Paper on Energy Policy in Ireland

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Overriding the various suggestions are:

1 Throughout the Document there is a failure to understand the term economic growth, especially when the word sustainable is included. The problem described in a lecture given by Emertius Professor Albert A Bartlett [1] is the greatest shortcoming of the human race (including most decision makers) is our inability to to understand the (consequences of the) exponential function. This is also explained in a very recent article by George Monbiot [2]. The terms (sustainable) economic growth are used extensively throughout the document. The word growth could be replaced with a more achievable aspiration such as recovery, activity or vibrancy.

2 On page 13 , potentially significant implications are suggested for National Energy Policy based on the EU alignment and integration. It is important (given the urgency of Climate Change and Peak Oil and Gas) that red tape and bureaucracy does not get in the way of Ireland's ambitions. While being interdependent on Europe is a wise policy, it should not be to the detriment of our own self-sufficiency and resilience. Smart Metering, a European Wide grid serving the renewable sector are positive aspirations, however our plan should allow for the possibility of Global Systemic Economic Collapse before this infrastructure is complete. Therefore our aspiration should be first and foremost to maximise self-sufficiency while at the same time pursuing interdependence on an EU-wide scale.

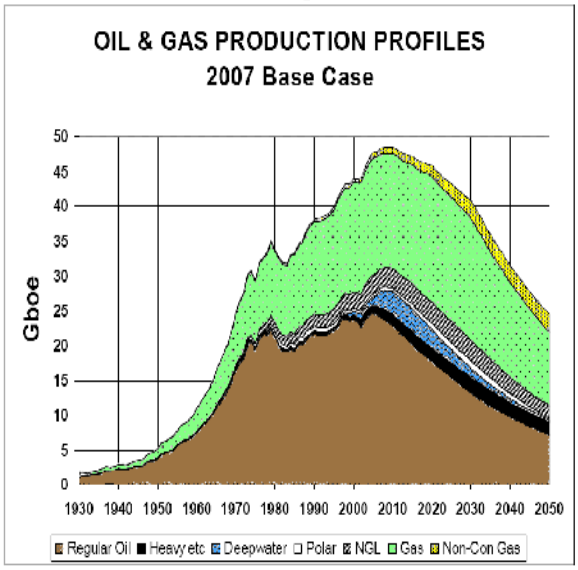
3 The document lists the EU targets, however these are an average over the EU region whereas Ireland is in a unique position given it's very large renewable energy resource potential to greatly exceed the EU targets. Therefore the document should point out that we are not going to aim to just meet the targets but to greatly exceed them. The document should also highlight that the European approach puts us on a perilous (high risk) path with respect to Climate Change. The renewable energy market represents a great opportunity for Ireland which should be grasped in the context of our current economic situation and our continued neglect of the indigenous sector in favour of multinationals as a source of boosting our economy. The latter is a high risk approach in the context of any future systemic economic crises.

4 Many of the graphs use mtoe and ktoe as units whereas this would be better focussing on CO2 emissions so that the CO2 contribution of each sector, residential, industry, transport etc. is clear. Furthermore, sectors such as transport should be further broken down so that private usage, public transport and commercial activity is made clear. This would allow the approach to be top-down (biggest CO2 contributors and low hanging fruit to be addressed first).

5 Remove aspiration to let the market decide in Q25 on page 54. Context for this is that critics of aspects of globalisation focus on 2 philosophies “competition is good” and “let the market decide”. The problem is the market is an entity which we do not control not a person

so it's a high risk approach to let the market decide (as the market is a major contributor to the Climate and Peak resources crises). So the approach should yes be to provide clarity and regulation but most of all to promote the right strategies and the market can then fit onto that framework.

The General Depletion Picture



1 Like the waste hierarchy (reduce, re-use, recycle), the hierarchy for energy should also be reduce first i.e. as much a circular system as possible. Public education initiatives (including effective use of public service broadcasting) should be a major goal of the plan in reducing energy wastage in the home and workplace. An obvious recycling example is Aluminium costs a fraction of the energy required when recycled than to produce the aluminium in the first place.

2 No Peak Oil and Gas Plan. While the EU is planning for Climate Change the Green Paper does not acknowledge Peak Oil and Gas. The predictions of ASPO since the early 2000's (the Association for the Study of Peak Oil and Gas) have been extremely accurate and the EIA have continuously revised (from a much more optimistic starting point) their public statements in convergence with ASPO

What is Peak oil?

"The term Peak Oil refers to the maximum rate of the production of oil in any area under consideration, recognising that it is a finite natural resource, subject to depletion." --Colin Campbell

Peak oil means the ERO(E)I Energy Return on (Energy) Invested is getting poorer year on year to the point where oil extraction will be pointless well before the end of all remaining oil is reached. As EROI increases, so do prices. Additionally the level of environmental destruction caused by e.g. tar sand extraction is massive-scale.

The 2nd problem with peak oil (and gas) is the world's economy. But like oil, many of the world's resources are running out which all have an impact on the global economic climate. Indium (used in electronics) for example has very little remaining resources. Peak oil and other minerals mean there is a significant risk of (economic) systemic crash and others e.g. Phosphorus have an impact on the world's food production prices which is also heavily impacted by energy costs. Increasing political volatility may have a knock on impact on energy prices e.g. Russian gas which also impact on the price of Nitrates.
A New Scientist article (Earth's natural wealth: an audit (23 May 2007) – David Cohen looks at the issues surrounding Platinum resources and then goes on to look at a range of other minerals including indium, tantalum, zinc, copper, nickel, phosphorus, gallium, and uranium [3]. This article also provides estimates of how long various resources will last (see http://www.newscientist.com/data/images/archive/2605/26051202.jpg).

[1] http://www.youtube.com/watch?v=F-QA2rkpBSY

[2] http://www.theguardian.com/commentisfree/2014/may/27/if-we-cant-change-economic-system-our-number-is-up

[3] http://www.sciencearchive.org.au/nova/newscientist/027ns_005.htm?q=nova/newscientist/027ns_005.htm

Smart Grid:

1. Greater emphasis should be provided in maximising the potential of Smart Metering – intelligent appliances, frequency monitoring, ICT, Electric Storage Heating and Heat Pumps. The document should go into more detail on how committed we are to each of these.
2. No mention is made of Air Source Heat Pumps which are now achieving very high seasonal efficiencies for a significantly lower cost that Ground Source Systems.
3. Community Schemes (e.g. Co Operatives and ESCOs running banks of Air or Ground Source Heat Pumps coupled with community thermal storage). Such systems can be configured to maximise savings by dumping excess electricity from the grid into heat for use later by the community. Community schemes are also useful for wind power projects.
4. Electric Storage Heaters (mainly in rental Apartments). These currently work on a crude on-off basis, many with no thermostat and in many cases causing overheating. These and could be replaced or retrofitted with more intelligent Smart-Grid friendly Heaters which could be controlled by the Smart Grid.

Exploration:

While the Government is not going to stop the Corrib Gas field, we (because of Climate Change) should not try to extract any additional fossil fuel resources. The high renewable energy potential is a low risk approach (we know we have a huge abundance). We are addicted to fossil fuels and this is what is causing Climate Change and a range of other environmental issues. The sooner we start weaning ourselves off this the better for humanity. Encouraging further exploration is like encouraging drug dealers to go find a new supplier. Additionally, the wasting of these valuable resources by combustion is foolish. Methane e.g. is required for Nitrate production and oil is used in many products not just for combustion. When these resources are wasted foolishly humanity cannot get them back. Page 46 contains a statement on the potential economic benefits for the country of unlocking our oil and gas potential; this needs to be offset against climate change costs as identified in the Stern report (global translated to national cost). This statement should be removed in the context of moving away from fossil fuels. The statement may be there to appease the hydrocarbon lobby but such a policy should not be implemented if we are serious about stopping climate change. In Ireland our coast line is large and many of our urban areas are located on the seaboard meaning that mitigation and preventative measures could be extremely costly. Ireland needs to think global and act local in this respect.

Empowering Energy Citizens:

1. The #1 priority here should be effective public education. This could be a whole range of measures including public service broadcasting (using our RTE license fee), leafleting, adding to the secondary school curriculum to create energy aware citizens and more. The goal should be that as many people as is possible can be fully educated as to what wastes energy and how they can make savings. This will also help them with their weekly budget and free money to be used elsewhere in the economy.
2. The enforcement of the BER scheme has been a failure with many landlords not getting a

BER and more importantly renters not properly aware of the significance of the BER rating and not using it as a bargaining tool to get good rental deals.

3. In the workplace people often behave like sheep when it comes to energy with no-one (not even management) assuming responsibility for energy savings. In medium and larger factories it's often assumed to be the responsibility of the maintenance department or the security staff. Air conditioning is left running, lights and photocopiers left on etc., canteen toasters left running all day. A program or plan to deal with these problems is required.
4. Encouraging citizens to use a mode of transport other than their motor car would make a massive contribution towards reducing CO2 emissions. It is difficult to motivate change in this without pointing out the many benefits of leaving a car at home including exercise (and reduced stress), not being stuck in traffic (bicycles quicker than cars during rush hours), children's health (the school run, childhood obesity and diabetes etc.) and also the fact that leaving the car at home contributes greatly to saving the environment for our children.

Transport:

1. Modal change as described above should be a main priority.
2. Although possibly controversial, if we are serious about CO2 reduction, extending car lifetimes should be an aspiration with design for re-use techniques. Far more jobs may be created in the car maintenance industry than buying new cars. This is in the context of new cars costing the equivalent of 30-70,000 miles equivalent in energy usage during manufacture. Car safety and insurance needs to be adaptable to retrofit schemes to make cars run in more environmentally friendly ways.
3. Car sharing and other schemes especially in cities should be introduced as a means of reducing private car ownership.
4. Rail improvements to encourage rail freight need to be prioritised as rail is a far more energy efficient mode of transport.
5. Include Ireland's desire to be sustainable in its biofuel usage (the direction of the EU seems to be away from 1st generation biofuels towards more waste products and indigenous sources). The document should state that Ireland's biofuel industry should be environmentally sustainable rather than causing problems in countries such as Indonesia. We are causing problems at home by persticide use in Miscanthus and Willow plantations which could be removed by moving to next generation biofuels. The indigenous biomass initiatives failure (due to lack of adequate support from the relevant state support agencies) can be considered a good thing in the context of the emergence of next generation biofuels which are far less likely to rely on pesticides.

Energy Storage:

This is the **single most important technological measure** for increasing the renewable electricity sector. While there is scope for mega-projects such as that proposed at Glinsk in North Mayo, there is also much scope for community scale co-operative scale projects which can be joined using the smart grid. There are many new innovations in energy storage indeed there is something of a technology race giving much potential e.g. for backup of individual wind farms. A list of the technologies could be included in the document as an incentive to potential investors in the sector. Some technologies are evaluated [4] here but some of the newer technologies may overtake these.

[4] http://blogs.worldwatch.org/revolt/wp-content/uploads/2013/12/ratings_large.gif which was previously on http://energystorage.org/energy-storage/energy-storage-technologies.

Hydrogen:

There is no mention of Hydrogen in the plan. Recent advances in catalyst technologies mean that Hydrogen production will not be dependent on platinum for much longer. Hydrogen is considered in an energy context not so much as a fuel but as a form of battery. Hydrogen production can be controlled by the smart grid and so may have a place on the table. Also hydrogen combustion is at higher efficiencies than other transport fuels inside a combustion engine. Therefore an analysis of hydrogen as a transport fuel because of its grid management capabilities could be included in the document. As peak minerals become a reality and as metal prices rise, the cost of retrofitting vehicles may be deemed more advantageous than building new cars. New car designs may be more modular with long lifetimes prioritised as policy.

ETS vs. other approaches:

The ETS / Cap and Trade have many critics including Annie Leonard [5], some of the arguments being that we shouldn't entrust the solution with the people who created the problem, free allowances don't make sense (we are rewarding the biggest polluters), no agreement on what cap is set and that there is much opportunity for cheating when it comes to Carbon offsetting. The ETS is impacted whenever there is slow economic growth or a temporary increase of fuels e.g. fracking gas into the energy market. Indeed many market centred institutions and publications are highly critical of the scheme. If a market based solution is found is should be justice based and community driven. One such solution is Cap and Share which is radically different to Cap and Share [6] and although better as a global solution can be implemented on a Country by Country basis. If we in Ireland are going to follow a market approach, due consideration should be given to this one or at the very least its endorsement as a global solution could be included.

[5] http://www.youtube.com/watch?v=ZYi78LaY8u4&feature=kp

[6] http://www.capandshare.org/benefits.html

CCS:

In deciding the future of Moneypoint Carbon Capture and Storage is being considered. This is likely investing money in a failed process as the plants require 15-25% more energy requiring more combustion and causing additional air pollution. CO2 is only a pollutant in the context of anthropogenic climate change whereas many other emissions form coal fired stations are very polluting (PM and NOx are predicted to increase 15-25% unless additional measures are added and Ammonia (with CCS) is expected to increase 3 fold), there is the risk of leaking and the Nuclear Industry claims that coal combustion also causes more radiation to be added into the atmosphere than Nuclear Power.

SEAI's role:

The agency's role in providing advice to all users of energy needs to go much further so that all citizens, workers and companies have a clear knowledge of how they consume and waste energy and how they can save energy and so that all are empowered to make decisions within the home and workplace.

Prioritising:

1. Reduction should be the #1 priority for our energy policy so awareness raising and

empowering citizens and workers to respond is key to this.

2. Electricity should be prioritised over gas so that we have a strong focus on moving away from fossil fuels, we send a signal to fossil fuels that their product is less desirable and because of our potential abundance of renewable sources.
3. The plan could include a breakdown of how much could CO2 be saved by taking various measures. Sectoral CO2 breakdowns are important to provide these calculations so that the right improvements can be targeted first.
4. We need to question why we are using so much peat and employ so many people in this sector. The development of new sectors should target workers in the peat sector so that we don't end up with a jobs black spot. Retraining should planned in advance of peat rampdown and Bord Na Mona's role could be adapted into the new opportunities. Whether in wind or in some other sector, the midlands needs a backup plan for when peat burning is stopped.

Backup /emergency plans:

One emergency plan which may happen after 2030 is to use existing infrastructure for another function, e.g. as the Corrib field runs out, the gas network could be used to store compressed air, hydrogen or methane from biogas plants as a backup to the electricity grid and transport networks. Some thought could be put into emergency plans such as this.

Innovation:

Much red-tape and bureaucracy exists in the development of new initiatives where too many criteria need to be met for support agencies to help and an there is over-reliance on the academic sector in SFI support. As well as academically supported initiatives, there needs to be support for maker spaces and creativity projects. This will also assist in training the next generation of workers so that they can innovate solutions. During the world wars, citizens, Governments and businesses did not wait for state to set criteria, time was critical and many technical solutions were found. Peak Oil and Climate Change are longer emergencies but combined the time-line may not be much longer than that of historic World Wars.