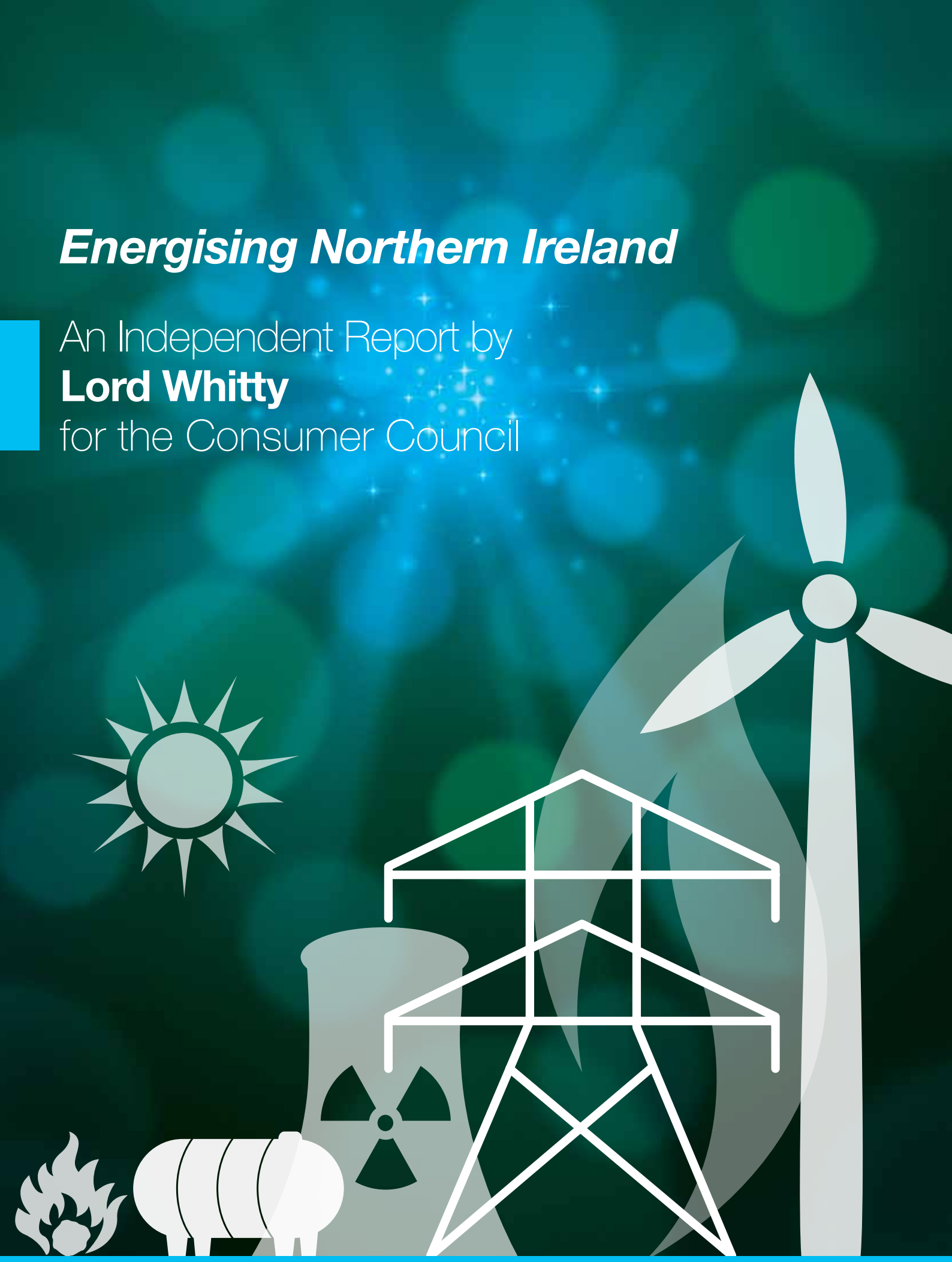
Energising Northern Ireland

An Independent Report by
Lord Whitty
for the Consumer Council



March 2012

Energising Northern Ireland

An Independent Report by
Lord Whitty
for the Consumer Council

Contents

Foreword

I was asked by the Consumer Council for Northern Ireland (CCNI) to do a review of energy policy in Northern Ireland (NI). My qualifications for undertaking the task may not be obvious. Until a year ago I was Chair of Consumer Focus – the statutory consumer body covering the GB energy market; and until 2005 I was for several years a Minister in the UK Government with responsibility for energy efficiency, fuel poverty and climate change aspects of energy policy. I am also a Board member of the Environment Agency for England and Wales which covers environmental aspects of energy regulation. So I do have form (or baggage) and I have learnt from both successes and mistakes in energy policy at GB and UK level.

Obviously the genesis of that request from the CCNI was widespread consumer concern at the impact of high and rising prices on consumers, the high and rising levels of fuel poverty and complaints from consumers about energy companies in all sectors. However, the Consumer Council's concern – and the remit of this report – go beyond the serious problems facing today's consumers: the need to decarbonise the energy mix in the face of climate change and issues of security of supply will be of concern to NI's future consumers and decisions needed now or in the near future will determine the supply, cost, environmental and social impact of the energy market in NI. Hence the report covers all these aspects of energy policy and assesses the long term as well as short term policy choices.

In working on the Report I have been greatly helped by the willingness to engage of a wide range of people in industry, government and consumer and environmental organisations in NI with huge experience of different aspects of the energy scene in NI. My profound thanks to them for sharing their knowledge and creative ideas with me.

My thanks also to the Consumer Council for supporting and informing my efforts.

However, the contents and recommendations in this Report are entirely mine and no other person or organisation is committed to the analysis or the recommendations. I submit it to the Consumer Council and to any other individuals and parties who may find it useful – or not – in formulating future energy strategy in NI.

LARRY WHITTY
March 2012

1 Introduction and Overview

1.1 This report was proposed by the Consumer Council for NI to look at energy strategy from the point of view of the domestic energy consumer - not just today's consumer but also of consumers well into the future. It therefore looks at a sustainable strategy in terms of cost but also of social and environmental impacts.

1.2 Although written primarily from a domestic consumer viewpoint the Report recognises that NI's many thousands of small businesses face similar problems to those of domestic consumers; and also that it is not in NI consumers' long term interest to advocate a strategy that damaged NI's business community.

1.3 NI consumers and small businesses at present pay significantly more for their energy than is the case in the rest of the UK. This is largely due to different mix of fuels, with heating oil predominating in NI and gas only being available in some areas. This is also partly due to costs and prices of electricity being significantly higher than in Great Britain and the price of gas being higher for most of the last decade.

1.4 There are inevitably multiple objectives of energy policy – affordability, security, cost and social justice. There are also demanding targets for different forms of expensive infrastructure and for switching significant sourcing of energy to renewables and away from carbon based fuels. High and rising prices in all sectors underline the need for a major campaign for energy efficiency – both in housing and other buildings and in industrial processes and transport. There will be little prospect of direct exchequer resources investing in energy efficiency or infrastructure. Hence the cost of both will almost exclusively fall on domestic and business consumers. It is important that policy, regulation and industrial strategy maximise the synergies and minimise the duplication and conflict between the objectives.

1.5 At present the strategy is piecemeal and insufficiently coordinated; this is compounded by the multiplicity of government departments and agencies involved.

1.6 The NI market is small; the scope for competition is limited; and it is subject to influences from outside its border in the UK, the RoI and the EU as well as global energy prices and supply issues.

1.7 On the other hand most powers relating to energy are devolved in NI (unlike Scotland and Wales) and it is a sufficiently compact market for the NI Executive and Utility Regulator for NI (UR) to operate in a longer term, more strategic way.

1.8 The key themes of this Report are:

- It needs to be squarely recognised that, whilst there will be short term fluctuations up and down, relatively high and rising prices are likely to continue whatever the regulatory structure. But this can be significantly cushioned by new and intensified interventions by the Government and the Regulator – and different choices by consumers;
- Reduction in fuel poverty and decarbonisation of energy supply need to be considered as being equally important policy objectives as cost and security of supply;
- A far more substantial programme on energy efficiency is needed in NI; that programme should be treated as a priority part of infrastructure strategy and consolidated in its funding and coordinated in its delivery;
- A key strategic aim should be the radical reduction of dependency on home heating oil;
- In the interim heating oil should be included in the remit of the UR;
- Priority should be given to the consolidation of connections to the existing gas networks rather than major new projects;
- Development of renewable fired electricity generation (for heating) and networks should be focussed on the south and west of NI where natural gas networks will not be economically viable and may never reach;
- All forms of renewable, low carbon and decentralised energy should be encouraged but within a consistent and long term framework of incentive and support;
- Although there are good arguments for significant parts of the required investment into changing energy infrastructure to be financed by the state it has to be recognised that in the present economic and political climate there is unlikely to be a significant increase in net state spending on energy investment in NI and that hence the costs of such investment will need to be met largely from revenue i.e. from domestic and business consumers;
- The UR should continue to encourage competition but recognise there are limits in a small market; price controls should remain; tariff structures should be developed that help reduce fuel poverty and reduce the use of energy;
- Government and regulatory structures need to be reviewed to give a clearer driver for energy policy formulation and regulation;
- The island of Ireland dimension for wholesale energy needs to be developed in gas as well as electricity; and
- The UR role should not be subsumed into Ofgem but NI's voice in energy policy at UK and EU needs to be enhanced.

The Strategic Backdrop

1.9 Before looking at the policy issues it is important to indicate what is the medium to long term backdrop for energy in NI and what the broad-brush energy mix and energy strategy is going to be over the next two decades to about 2032. The following is this Report's best informed assessment as to how NI's energy strategy should, and if the right policies are adopted by the Government, the UR and industry, is likely to develop over the next twenty years:

1. For most of that period natural gas will be the predominant fuel both for electricity generation and for domestic and commercial heating; but it is already a transitional fuel i.e. gas use will grow for most of the period but by the end of the period the balance will already be shifting to renewably sourced electricity;
2. There will be a single island of Ireland market for all forms of energy; and more substantial two way interconnectivity with both Great Britain and the Republic of Ireland (RoI) will play a major part in the energy mix;
3. There will also have been significant progress towards a North West European Supergrid for electricity but probably not completely integrated markets, regulation or control;
4. Heating oil will be reduced to a minimal residual role in providing heat to the domestic and commercial sectors and oil and coal will be entirely eliminated from generation; and
5. Significant improvements in energy efficiency will have been achieved in the domestic and other sectors and thereby reduced aggregate energy demand relative to economic activity.

Possible Alternative Scenarios: Shale Oil and Gas

1.10 There is one possible development in NI which really only emerged in the course of conducting the work for this Report. There may be the possibility of substantial sources of shale oil and gas from fields in Fermanagh and to the south of the border. If this possibility does develop it will be based on straightforward commercial criteria and need neither taxpayers' money nor cross subsidy amongst consumers.

1.11 Likewise - if longer term, there is also a possibility of an Ireland based nuclear power station that too, would have to be financeable on a 'commercial' basis i.e. there will be no direct government subsidy.

1.12 This Report does return to these possibilities briefly under infrastructure development but most recommendations are based on neither happening, at least in the short/medium term.

Possible Alternative Scenarios: Public Finances

1.13 In a different vein there is also an alternative scenario in relation to funding. In this Report it is specifically assumed that there is unlikely to be a significant net increase in public spending to finance changes designed to deliver wider energy policy objectives; and hence that all financing will have to come from industry and consumers in one way or another – whether directly through prices, levies or cross subsidy. It is arguable that one should take an even wider perspective of energy policy such as is being taken by the Fuel Policy Advisory Group (FPAG) in England: namely that other interventions in energy in terms of EU Trading Scheme, the introduction of a carbon price floor, contracts for difference and subsidy to renewable energy generators will lead to very substantial increases in taxation income to the state which should be available to help achieve energy policy objectives. The FPAG estimates the total tax take arising from those policies at around £5bn per annum. Not all the provisions included in these calculations apply in NI but most do. On a pro rata basis the tax increase from NI reflecting these interventions would be over £100m per year - or £1bn over ten years. If that state expenditure were, as the FPAG argues, directed at alleviating fuel poverty, that would make a significant difference to the argument about state resources. The probability of this happening is however regrettably low.

2 Summary of Findings and Proposals

1 KEY THEMES

2.1 The key themes of this Report are:

- It needs to be squarely recognised that, whilst there will be short term fluctuations up and down, relatively high and rising prices are likely to continue whatever the regulatory structure. But this can be significantly cushioned by new and intensified interventions by the Government and the Regulator – and different choices by consumers;
- Reduction in fuel poverty and decarbonisation of energy supply need to be considered as being equally important policy objectives as cost and security of supply;
- A far more substantial programme on energy efficiency is needed in NI; that programme should be treated as a priority part of infrastructure strategy and consolidated in its funding and coordinated in its delivery;
- A key strategic aim should be the radical reduction of dependency on home heating oil;
- In the interim home heating oil should be included in the remit of the UR;
- Priority should be given to the consolidation of connections to the existing gas networks rather than major new projects;
- Development of renewable fired electricity generation (for heating) and networks should be focussed on the south and west of NI where natural gas networks will not be economically viable and may never reach;
- All forms of renewable, low carbon and decentralised energy should be encouraged but within a consistent and long term framework of incentive and support; and
- Although there are good arguments for significant parts of the required investment into changing energy infrastructure to be financed by the state it has to be recognised that in the present economic and political climate there is unlikely to be a significant increase in net state spending on energy investment in NI and that hence the costs of such investment will need to be met largely from revenue i.e. from domestic and business consumers.

- The UR should continue to encourage competition but recognise there are limits in a small market; price controls should remain; tariff structures should be developed that help reduce fuel poverty and reduce the use of energy.
- Government and regulatory structures need to be reviewed to give a clearer driver for energy policy formulation and regulation;
- The island of Ireland dimension for wholesale energy needs to be developed in gas as well as electricity; and
- The UR role should not be subsumed into Ofgem but NI's voice in energy policy at UK and EU needs to be enhanced.

2 THE BROAD BACKGROUND

2.2 The following is this Report's best informed assessment as to how NI should and if the right policies are adopted by the Government, the UR and industry is likely to develop over the next twenty years:

1. For most of that period natural gas will be the predominant fuel both for electricity generation and for domestic and commercial heating; but it is already a transitional fuel i.e. gas use will grow for most of the period but by the end of the period the balance will already be shifting to renewably sourced electricity;
2. There will be a single island of Ireland market for all forms of energy; and more substantial two way interconnectivity with both Great Britain and the RoI will play a major part in the energy mix;
3. There will also have been significant progress towards a North West European Supergrid for electricity but probably not completely integrated markets, regulation or control;
4. Heating oil will be reduced to a minimal residual role in providing heat to the domestic and commercial sectors and oil will be entirely eliminated from generation; and
5. Significant improvements in energy efficiency will have been achieved in the domestic and other sectors and thereby reduce aggregate energy demand relative to economic activity.

2.3 It is possible that there could be major changes that will alter these scenarios, for example, successful exploitation of shale gas and oil in Fermanagh; or a decision for an Irish nuclear plant; or an increase in state funding available for investment in energy and alleviation of fuel poverty. However this Report assumes none of those will happen. If any of them did so it would make significant changes to the recommendations.

2.4 The following sets out a summary of detailed recommendations under the various heads, identifying wherever practicable in each case:

- Strategic objectives;
- Immediate Measures (next 18 months);
- Short Term Measures (next three years); and
- Medium Term measures (next 10 years)

3 THE MARKETS

Heating Oil

Strategic Objective

The strategic objective should be to replace heating oil (and coal) as a feedstock and substitute pipelined natural gas or electricity as far as possible from renewable or low carbon sources

Immediate

In view of the failure of the Office of Fair Trading (OFT) Report on off-grid energy markets to differentiate the NI market effectively, DETI should conduct a new review of pricing, consumer protection and competition in the supply of heating oil in the NI market.

In parallel Trading Standards NI should be asked to actively investigate allegations of mis-selling and calibration distortions in the supply of heating oil to domestic consumers.

The supply of heating oil to domestic and business consumers should be included in the mandate of the UR to ensure adequate customer service and genuine competition in the sector.

In parallel the role of the Consumer Council to investigate complaints which operates in the gas and electricity sectors should be extended to the heating oil sector.

Short Term

The NI Executive should legislate a universally available system of saving for purchase of heating oil across NI; this could either subsume or complement existing schemes and be available throughout NI - administered either by local authorities or under contract via the Post Offices and its local outlets and through Credit Unions.

A pilot pay-as-you-go (PAYG) scheme for heating oil is due to take place in 2012 in NI. Given the reliance on emergency oil drums for many fuel poor households this is a welcome step as it should aim to reduce the price per litre paid by consumers. However, it is important this scheme identifies potential issues of ownership, theft and liability. At installation of a PAYG meter at the household, a full energy audit and benefit check could help further assist and identify fuel poor households.

In addition more local authorities, local businesses and local community groups could themselves set up as energy brokers in the oil sector – and potentially also for gas and electricity – using the larger market power to obtain better deals, which also gives the suppliers greater certainty of market demand.

The UR should be required to introduce a licensing system for supply of heating oil to ensure compliance with minimum standards of price transparency and customer service and a system for dealing with complaints.

One of the requirements of the licence should be a levy on sales so as to ensure the heating oil suppliers made an equivalent contribution to energy efficiency and alleviation of fuel poverty, as is made by the gas and electricity sectors.

The UR should also have reserved powers of price control in the heating oil sector.

Medium Term

It should be a clear strategic objective of policy and regulation over the medium/longer term to reduce radically the dependency of NI consumers and businesses on oil for heating purposes.

The strategy should be to reduce as far as possible heating oil dependence.

This should also be aimed at eliminating use of coal and peat for regular domestic (or commercial) heating.

Electricity

Strategic Objective

The electricity network should be modernised and decarbonised as far as practicable using renewable sources in Ireland, supplemented by increasingly low carbon energy imported from GB and RoI via the interconnectors.

Immediate

Price controls on retail electricity should, in principle, remain in place.

However there should be an urgent review of the way in which capital expenditure and the cost of capital is allowed for and charged with a view to shifting the burden of risk from consumers to the generators.

In view of the queries and allegations set out by Mr McIdoon and the Consumer Council there should be an independent investigation into the rewards to generators through the capital and financing aspects of the regulatory framework.

Short Term

The duration of overall price controls in electricity should, in principle, be extended to five year duration but there should be a change in the tariff structure.

There should be no change in the balance of costs between domestic and industrial/commercial.

The capacity for switching electricity suppliers should be increased and the ease of switching improved; switching should be costless to the consumer.

Medium Term

A Service Obligation (SO) element – similar to the new ECO in GB - should be introduced in NI to raise from domestic and small business consumers their contribution to social, environmental and energy security objectives – subsuming current arrangements such as NISEP.

This Social Obligation/ECO should be clearly identified and applied in proportion to energy use above a minimum threshold; users below that threshold should not have to pay the SO/ECO; the cost to consumers of the social and environmental expenditure should therefore be proportional to use and hence the tariff would become more socially progressive and incentivise energy saving.

Tariff structures should be further developed to encourage energy saving and energy conservation.

There should be no significant change in the balance between costs passed on to the domestic sector and the business sectors.

Natural Gas

Strategic Objective

Gas should be seen as the key transitional energy source for the next thirty years. The priority should be to consolidate as many households (and small businesses and public sector users) as possible onto the existing network and thereafter to extend the network and provide storage facilities only where it is clearly cost effective to do so.

Immediate

The top priority should be on the maximising of the number of connections to the existing networks in Greater Belfast and Larne and the Ten Towns. Incentives on both networks should be based on the number of connections.

Short Term

There should be further efforts to revive the stalled Common Arrangement on Gas (CAG) process of movement to an island of Ireland wholesale gas market.

Medium Term

Any extensions of the pipelines should be based on rigorous cost benefit; at present neither the western extension nor the major gas storage facility seem to be justifiable.

The cost benefit of a major facility for gas storage remains to be proven.

Gas and Electricity Tariffs and Methods of Purchase

Strategic Objective

A structure of tariffs in gas and electricity that reflects the policy objectives of affordability, reduction of fuel poverty, decarbonisation and energy security.

Short Term

Price controls on Phoenix Natural Gas (PNG) infrastructure and tariff reviews for Phoenix Supply Limited (PSL) retail gas prices remain in place but for the latter the review period should be extended to five years.

There should be no move to complexity in the range of tariff choice and tariff structures and no significant discrimination between ways of payment.

There should be encouragement of schemes for collective purchase of gas and electricity by communities.

Prior to radical restructuring of tariff structures there should be a mandatory requirement on supply companies in electricity and gas to provide a social tariff for those on defined means tested benefits.

Medium Term

Tariff structures should be developed beyond the current price review period that reflects the objectives of energy conservation and alleviation of fuel poverty. This requires a radical restructuring; as, for example, a first tranche at low non premium rate; and thereafter add surcharges proportionate to usage to contribute towards infrastructure, decarbonisation and social objectives.

4 THE STRATEGIC ISSUES

Affordability and Fuel Poverty

Strategic Objective

Fuel prices for consumers in NI are likely to continue to rise in the medium term: this needs to be offset by major changes in regulatory structures, substantial changes in fuel mix – particularly the elimination of dependency on heating oil – and substantial investment in energy efficiency in the home and in the supply of energy itself.

The aim remains the elimination of fuel poverty in NI. But there is now no chance of the 2016 target for the elimination of fuel poverty being reached; new targets and timescales need to be defined and set.

Immediate: (a) Definitional Issues

The inexorable rise of the numbers of households in fuel poverty to 44 per cent in NI and 19 per cent in England has led both governments to seek

a redefinition of fuel poverty. That is the wrong response. We should be concentrating more on better identification and more effective action for the key groups who make up the fuel poor.

The current definition of fuel poverty has been an accepted definition for some time. The reason for it now being queried is essentially political rather than scientific: the numbers are rising and large and targets unattainable so there is pressure to redefine the problem.

The misuse by the Department for Social Development NI (DSD) of Christine Liddell's very useful detailed work in NI to attempt a redefinition of Fuel Poverty in NI by focussing on those in the severest fuel poverty – 13 per cent in Christine Liddell's calculation – who would have to spend over 18 per cent of their income, cannot be seen as a redefinition of fuel poverty.

It is difficult to translate John Hills' formula for redefinition to the NI situation but it is unlikely that it would alter the figures quite so dramatically as in England (or the UK in total) because of the higher general fuel costs in NI and the lower incomes. Decisions on changed definitions will not alter the reality: fuel poverty is widespread and rising and it is worse in NI than elsewhere in the UK.

For the moment the conventional definition should be retained in NI; it provides historic continuity and an ability to compare across all four UK nations.

Immediate (b) Priority Action

Rather than attempting to redefine fuel poverty, policy and delivery should focus rapidly on those sub groups of the fuel poor who are: identifiable by location; are in a position where specific intervention can help or are in the severest household difficulty. These 'subsets' include:

By socio economic group:

- Those living in the areas with the highest percentage levels of fuel poverty on the current definition;
- Those who will always be off the gas network; and
- Those in the wards with the highest levels of multiple deprivation.

By household characteristic:

- Those in the severest fuel poverty;
- Those in houses with the lowest Standard Assistance Procedure (SAP) ratings (below 60); and
- Those with households members over 70.

Short and Medium Term

Strategies and programmes proposed below on energy efficiency, and on tariff structures should be prioritised on the above sub groups.

The measures outlined under energy efficiency should be geared towards the fuel poor in those sub groups.

Whatever the definition, all measures that involve direct contact with households likely to be fuel poor should also offer a full benefits check.

In the longer run it may be sensible to seek a new definition but that redefinition should be agreed at UK level and if possible at EU level.

Climate Change

The UK targets for reduction of Greenhouse gases (GHGs) and NI targets for the decarbonisation of electricity supply (40 per cent renewables by 2020) need to be reaffirmed as objectives of NI energy policy: this means reinforced efforts on energy efficiency and on renewables.

There is a strong imperative for industry in all sectors in NI and bodies like Invest NI and Enterprise NI to encourage research, development and investment in energy efficiency and renewable energy.

Energy Efficiency

Strategic Objective

A coherent and sustained intervention on energy efficiency delivering substantial reductions in energy use (per unit of GDP) by 2025

Immediate

In immediate terms the Boiler Replacement Scheme should be extended in timescale and scope and the ceiling raised (partly to allow for conversion from oil within near proximity to gas mains).

Similarly the Warm Homes Scheme should allow for full conversion where close to gas mains.

Short Term

Funding for existing interventions on energy efficiency of buildings and heating systems should be consolidated into one scheme set up by DETI and probably run by the UR.

There needs to be a major campaign to shift, where possible, households

away from heating oil and onto natural gas networks. For households who are beside the existing gas network the most important energy efficiency improvement would be connection to that network (or to renewable heat schemes).

Much of the delivery of an enhanced energy efficiency strategy will need to be delivered on area based interventions which should be identified and prioritised on the basis of the interaction between SAP rating and income.

The financing of the energy efficiency schemes should be derived from a combination of the levy on gas and electricity suppliers and a new levy on the heating oil distributers – the latter raised either on each distributing firm via a licence industry system or from the importer; and partly from the cross subsidy element of the tariff structure.

Medium Term

Energy efficiency should be seen as a major part of the infrastructure programme and judged on similar criteria for long term cost saving and carbon saving. That would result in a major shift from larger infrastructure to energy efficiency improvements.

On Smart Meters: DETI and the UR should require the matching of the GB commitment gas and electricity companies to install Smart Meters in all domestic users by 2020 (or other specified date), specifying a single model or at least single technical specifications for the smart meter.

However because of the unique nature of the NI market there would need to be a pilot trial before the full programme is rolled out.

A full Smart Meter programme would also provide the opportunity prior to installation for a complete audit of every household for energy efficiency - identifying problems of insulation, structure or heating systems or of use in each household. This would both form the basis of identification of Warm Homes or boiler replacement opportunities and other energy efficiency interventions; and also for householder financed improvements.

NI Departments should, in say two year's time, review the implementation and take up by consumers in GB of the Green Deal scheme there, and consider whether a similar loan based scheme - repayable via future energy bills and administered via financial institutions - would work for owner occupiers and landlords in NI.

Renewables and Decentralised Energy

Strategic Objective

Substantial decarbonisation by 2030 of the energy system in NI in both supply and use on track for near complete decarbonisation by 2050.

Immediate

The forty per cent target for 2020 for renewable consumption of electricity is ambitious for NI (and more ambitious than most in Europe) but it is achievable and should be explicitly reaffirmed.

Short Term

NI needs an urgent and full review of all incentives applicable for low carbon. All subsidies or cross subsidies need to relate back to a consistent price for carbon or carbon equivalent saved over time – probably related to the trajectory for a floor price of carbon (£16/tce and rising) already announced by the UK Government.

Decentralised energy should also be an arm of energy strategy and carbon savings and cost savings can be achieved with lower carbon technologies based on gas and electricity as well as renewables - in particular in relation to the provision of heat to both households and businesses.

Encouragement of Combined Heat and Power (CHP) and District Heating schemes should be a significant part of the mix. Planning permission for new residential or commercial estates requiring CHP/District Heating to be the first and preferred option. In some cases - particularly at the point of connecting existing estates to the gas grid – retrofitting should also be considered.

Medium Term

Up to 2020 the renewables' contribution will consist largely of onshore and offshore wind generation. The cross subsidy incentive for wind energy (mainly ROs) needs to be renewed beyond 2013: the whole subsidy/cross subsidy system for wind and other non carbon and low carbon technologies needs to be consistent and in place for a substantial period.

Foremost amongst other renewable to be encouraged are those that can use feedstock - mainly waste - from the province's substantial agricultural food and forestry sectors such as Biogas and Anaerobic Digestion - plus those that can utilise wave and tidal power which the island has in abundance.

Consideration should be given to developing a heat strategy, incorporating

some features of the Renewable Heat Incentive (RHI) but applying it also to low carbon technologies.

The island of Ireland is in a good position to be a leader in renewable technology – particularly related to wind and wave power; this should be a priority for NI's universities and industrial research budgets and in cross border cooperation.

Infrastructure Priorities

Strategic Objective

A central task of Government and the UR will be to continue to ensure resources for the appropriate infrastructure investment and maintenance.

The electricity network needs to be significantly modernised and upgraded and adapted to renewable sources. The gas network needs to be consolidated in the areas it serves. This means that the Greater Belfast and Larne area and the ten towns should have virtually all households on the gas network.

The north and west of NI would be served by increasingly decarbonised electricity and renewable energy also contributing in the east – requiring both west/east grid enhancement and greater interconnector capacity.

Short/Medium Term

A central task of Government and the UR will be to continue to ensure adequate resources for the appropriate infrastructure investment and maintenance. This infrastructure development and financing has to have a clear strategy and a narrative that is understood by consumers, business and local communities.

The most rational strategy in terms of economic cost effectiveness and environmental and social return would be to prioritise:

- Investment in energy efficiency;
- Consolidation of the existing gas networks in Greater Belfast and Larne and the ten towns (and thereby facilitating a switch out of oil) by connecting all domestic and commercial users within close proximity of the network;
- Clearing the financing and planning issues to speed up the North South Interconnector and planning new interconnectors with Great Britain and the RoI - with a view to moving to a North West European Supergrid; and
- Developing renewable resources for the electricity network to serve primarily the west and south of NI.

This would mean the down prioritising of the western extension of the gas pipeline.

Medium/Longer Term

Gas needs to be seen as the predominant fuel for the areas it serves probably for the next thirty years but it is a transitional fuel; in the long run there needs to be a move to non carbon sources of electricity for the whole of NI.

Decisions will be needed within a few years on whether there is to be any development of the potential shale gas fields (to which there are considerable environmental and carbon emissions objections); and likewise whether there should be a nuclear plant somewhere in Ireland. This Report assumes for the moment a negative answer to both - but a positive answer on either shale gas or nuclear would transform the supply situation; in the case of shale gas also endangering decarbonisation targets.

Regulation and the UR

Strategic Objective

A strong UR with responsibility for delivery of all aspects of energy policy and a coherent and clear long term framework

Immediate

The UR's remit should be extended to cover the supply of heating oil to both business and domestic consumers. Powers in this sector should cover competition and choice, transparency, customer service, the ability to impose mandatory Codes of Practice and an energy efficiency levy, and reserve powers of price control.

The remit also needs to be extended to incorporate more explicitly the environmental and social dimensions of policy (as well as energy efficiency) rather than them being seen as constraints on an essentially economic UR.

Short Term

There should continue to be a focus on competition and the encouragement of new entrants. But that has to be tempered with the recognition that in a market of this size there is a limit – admittedly not defined - on how much further competition can be developed.

Price regulation should therefore be maintained for gas and electricity and the UR should have powers to regulate heating oil prices.

However the time limits for price regulation should be extended to five years to provide certainty both to investors and consumers.

There needs to be a stronger role for the Consumer Council in the process of price determination and the UR's overall strategy.

Medium Term

Price regulation needs to move away from specific cost reflectivity in setting tariff structures and towards a tariff system which directs the market to policy objectives. The UR should devise and require tariff structures for the medium term that move broadly to a rising marginal cost per unit consumed, and not the reverse.

This is probably the most radical proposal in this Report but it is central to the strategy outlined; a start should be made by making the first tranche of usage exempt from payment towards cross subsidy and subsequently to make the cross subsidy element directly reflect usage above that level i.e. the more you use the more you pay.

5 MACHINERY OF GOVERNMENT

Strategic Objective

A clear coherent structure of government and regulation to drive all objectives of energy policy and provide the framework for long term investment and consumer expectations.

NI Departments

Strategic Objective

Energy Policy to be more focussed, coherent and authoritative - preferably under a single NI Department of Energy

Immediate

Consideration should be given to the creation of a single Energy Department for NI (or if that is not practicable all brought under DETI).

Short Term

The parliamentary oversight of energy policy in the Assembly may be most effectively served by having a single focussed Energy Select Committee.

UK, All Ireland and EU Dimensions

The all Ireland SEM should be developed further and progress made on CAG.

This Report does not support the subsuming of the NI UR into Ofgem

However NI Departments and the UR need to reinforce efforts to ensure that NI interests in energy are recognised by Department of Energy and Climate Change (DECC) and Ofgem and taken into account at EU Ministerial Council, European Parliament, EU Commission and Agency for the Cooperation of Energy Regulators (ACER) levels.

3 Northern Ireland's Energy Markets & Policy Framework

Market Features

3.1 NI is one of Europe's smallest energy markets. To an outsider used to the GB market and familiar with some continental markets it does appear to have a number of unique problems, complexities and peculiarities. Amongst these are:

Fuel poverty, by the usual definition, is the highest in the UK at 44 per cent of all households and rising;

For domestic users there is an overwhelming and nowadays unusual dependence on oil for heating – around 68 per cent and 82 per cent in rural areas; this is both expensive and high in carbon content;

Energy prices have usually been substantially higher for electricity than in GB and higher than the EU average; for most of the last decade this has also been true of gas;

Except for renewables, almost all energy feedstock is imported - at a cost equivalent to 10 per cent of NI's GDP;

The gas network is very underdeveloped serving only 15 per cent of households;

There is a relatively low level of competition and of switching by domestic consumers between fuels or between companies; and

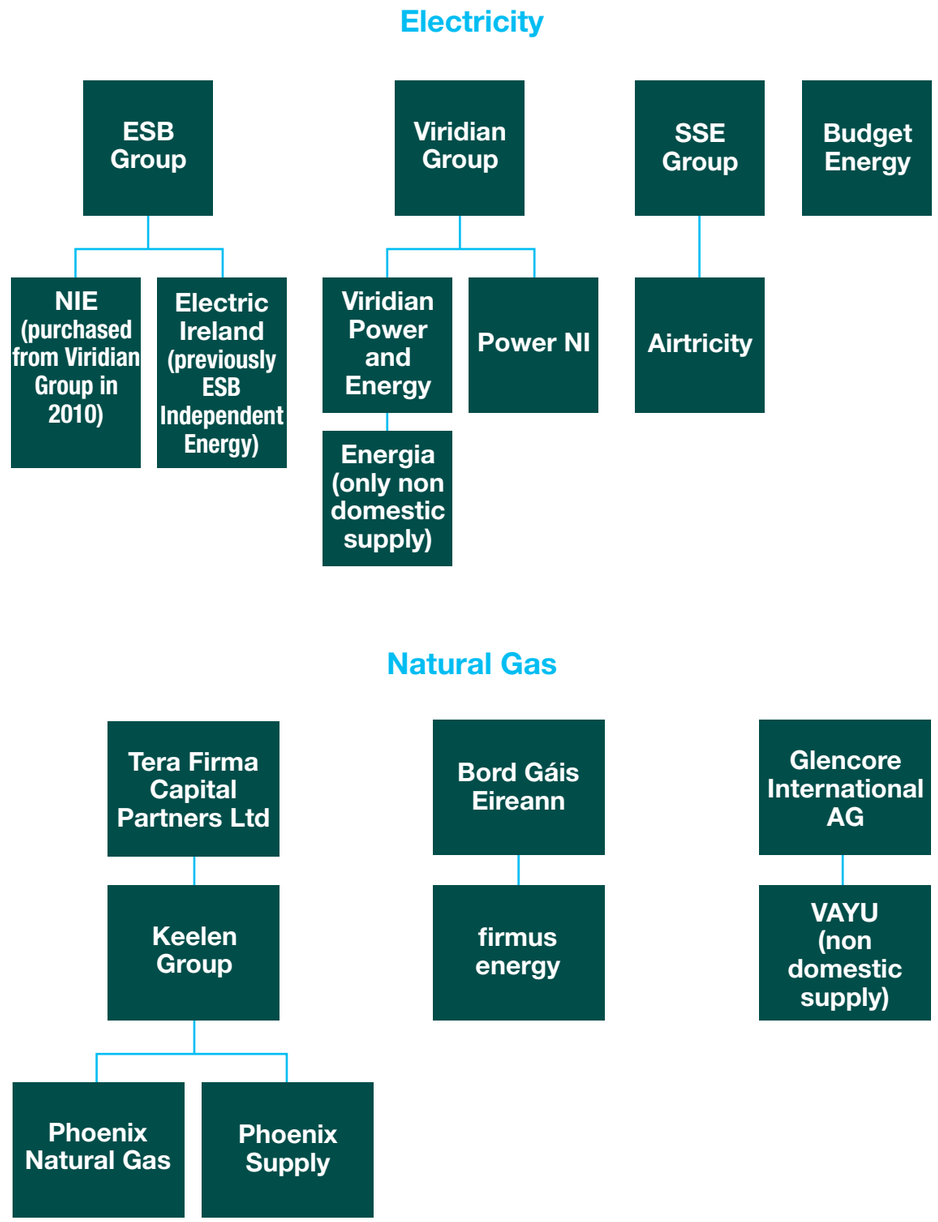
The potential for renewables - wind, biomass, wave and tidal - and the medium term policy targets set by the NI Executive (40 per cent of generation to be renewable by 2020) are significantly higher than for the UK as a whole or most EU economies.

3.2 There are also of course several features that are common to the NI and GB and other markets, amongst these being:

- There is widespread lack of consumer trust in energy suppliers in all markets and high levels of complaint;
- The target for renewables is very challenging and the cost of decarbonisation is being almost exclusively born by domestic and business consumers.

3.3 The ownership of energy companies is complex and almost all of the key industry players are owned outside NI.

CHART I
Structure and Ownership of Main NI Energy Companies



The Policy Framework

3.4 Energy policy in all countries has multiple objectives; principle amongst these are:

Security of Supply (i.e. the lights must not go out hence the system of supply must be resilient and the sources of feedstock secure);

Affordability and Equity (i.e. competitive prices for the commercial user and reasonable prices for the average domestic consumer whilst protecting as far as possible the most vulnerable or 'fuel poor'); and

Greening the Energy System (i.e. reducing the carbon/Greenhouse Gas content of energy both by switching to low carbon feedstocks and by increasing energy efficiency in production, distribution and use).

3.5 Often there is a clash or trade off between objectives and also the balance between these varies over time as market and political priorities change. The report makes some radical proposals about using regulation and price controls - and other interventions - to achieve the above objectives.

3.6 The UR for NI covers only gas and electricity in the energy field and hence not the largest domestic sector fuel – heating oil. In addition there is a single Island market for wholesale electricity, Single Electricity Market (SEM) with the RoI, with discussions also started on the prospect for an island of Ireland approach to gas development and regulation (CAG).

3.7 Energy policy is almost entirely devolved to the NI Executive with economic regulation provided by the UR, unlike in Scotland and Wales. However the market is also covered by EU Regulation and hugely influenced by GB markets and regulatory approaches but NI authorities are not directly represented at either level. NI is also affected by the energy market and by key players based in the RoI, most of whom also operate in the NI context.

3.8 The market is also influenced by many of the broader UK and EU policies, targets and regulations on climate change – principally those designed to decarbonise the energy sector. Moreover there is physical interconnection with the GB market and the RoI market. NI is therefore significantly dependent on policies and market conditions without much of an influence. These wider aspects mean that energy policy is not completely determined within NI and they have to be born in mind when considering the options for strategy: they represent both constraints and opportunities for new policy options.

3.9 There is a multiplicity of Government Departments plus the UR impinging on energy policy. Whilst Department for Enterprise, Trade and Investment (DETI) has primary responsibility, in total there are eight NI Departments involved to some extent in energy policy formulation. This complexity exists in many countries but in a small market like NI it makes energy policy over complex. In Whitehall most – though not all - of the policy issues have, since 2008, been consolidated into one Department – DECC. That is not the case in NI.

3.10 Because of that multiplicity of Departments there is no single statement of energy policy covering all the objectives. The key ones referred to in this Report are :

- Energy: a Strategic Framework for NI: DETI publication in September 2010;
- Warm Healthier Homes: a New Fuel Poverty Strategy for NI: DSD March 2011; and
- NI Greenhouse Gas Reduction Plan DOE Feb 2011

All of this makes policy making somewhat complex and often piecemeal. There are some conclusions below on machinery of government and the remit of the UR at the end of this Report.

On the other hand NI is a sufficiently compact market and the number of players sufficiently limited to allow for the opportunity to establish a strategic long term policy; this Report is a contribution to that process.

4 The Markets

Prices and Fuel Mix

4.1 Over the past decade energy expenditure in NI has been higher in absolute terms and has risen at a significantly faster pace than in GB.

Table A
Heating Fuel Bills: NI and GB

	Average bill 2001	Average bill 2011	% increase 2001 - 2011
Northern Ireland	£768.55	£2,368.71	208%
Great Britain	£541.33	£1,258.09	132%
Difference	£227.22	£1,110.62	389%

Source: DECC, CCNI, Sutherland tables, Consumer Focus, Power NI, Phoenix Supply Limited, firmus energy

4.2 This differential in costs is long standing. But it is growing: according to Christine Liddell (in her recent excellent 2011 report on Defining Fuel Poverty in NI) in the sixties the differential was around 15 per cent: by 2003 it was 40 per cent; by 2008 it was 60 per cent. Thus consumers in NI – who on average have lower incomes than in Great Britain – have been paying more than in the rest of the UK (and slightly more than the western European average) for their annual fuel bills.

4.3 By far the most important reason for the higher figure in NI is the much heavier reliance on oil for space and water heating whereas the majority of households in the UK use natural gas for heating. The average expenditure on oil in NI is over twenty times the average in England whereas that on gas is less than one fifth. The disadvantage of that dependence on oil for heating and its effect on annual energy bills as compared to natural gas heating is illustrated in table below.

Table B
Relative Household Expenditure on Different Fuels
England = 100

	England	Wales	Scotland	Northern Ireland
Electricity	100	106	106	110
Natural gas	100	93	99	22
Oil	100	203	98	1,420
Solid fuel	100	769	588	2,458

Source: Christine Lidell, Defining Fuel Poverty in NI, a Preliminary Review, 2011

4.4 More recent rises in the price of gas, electricity and heating oil have continued that trend.

Table C
Recent NI Price Rises 2011

	Price rises 2011
Power NI regulated electricity price	+18.6%
firmus energy regulated gas price	+28.4%
Phoenix Supply regulated gas price	+39.0%
Heating oil average price (year)	+35.0%

Source: CCNI, Power NI, Phoenix Supply Limited, firmus energy

According to the Consumer Council's latest calculations incorporating the latest figures and the DECC statistics the average expenditure for an oil dependant NI household will be £2,365 pa compared to the highest dual fuel consumer in Great Britain (in Cardiff) of £1,175 i.e. twice as much. Only a small part of this could be said to reflect colder outdoor temperatures in NI.

4.5 This continued secular upward trend is due to a combination of global pressures, NI's logistic costs and relative lack of competition or choice of fuel, the short term cost of decarbonisation policies and the need to finance substantial new infrastructure. Over the last three years the pound price of a barrel of crude oil has risen by 152 per cent.

It needs to be squarely recognised that - whatever the short term fluctuations – the secular trend is that relatively high prices are likely to continue whatever the regulatory structure; however this trend can be significantly modified and cushioned by new and intensified interventions by the Government and the UR.

4.6 Just over two thirds (69 per cent) of consumers in NI are in the domestic sector, the rest from the industrial and commercial sectors. The make up of the fuels supplying that domestic demand is very different from that in the rest of the United Kingdom (UK) (oil -v- gas).

Table D
Breakdown of Expenditure on Fuel
Domestic Sector (2008)

	England	Wales	Scotland	Northern Ireland
Electricity	49	52	48	39
Gas	46	43	42	7
Oil	4	7	1	40
Solid fuel	1	7	5	14

Source: DECC Energy Statistics 2011

And in that domestic market the comparison of total expenditure between NI and the rest of the UK is stark.

4.7 This far greater dependence of consumers in NI on oil (and to an extent coal) for their heating needs is a major factor in the high rate of fuel poverty. This largely reflects the late arrival of natural gas in NI in 1996 – twenty years after coal gas disappeared.

4.8 There is also – usually though not always - a disadvantageous differential in the prices for electricity and often for natural gas in NI and GB. NI electricity prices have been generally higher for most users than in GB; however that depends significantly on the method of payment: direct debit and standard credit customers pay significantly more in NI but prepayment meter ('keypad') customers pay less than in GB – a reflection of the problem in GB where until recently – and still to some extent – prepayment meter users pay higher charges than others whereas in NI the opposite is true. Since there is a high concentration of lower income households using prepayment methods on both sides of the Irish Sea the NI position is more socially progressive. Nevertheless on average NI consumers pay more for electricity than in GB. For most of the last ten years the same was true for gas, although from 2009 until the latest 2011 NI regulated gas price rises in NI, gas consumers in both the Greater Belfast and Larne and ten towns areas did enjoy slightly lower prices.

4.9 Under the devolved energy policy in NI the gas retail market and the electricity retail market are regulated, including on price, by the UR. Oil and coal are not regulated except in relation to general consumer, competition and safety law. High and rising prices in all sectors underline the need for a major campaign for energy efficiency – both in housing and other buildings and in industrial processes and transport.

Heating Oil

The Problems of Heating Oil

4.10 Heating – space heating and water heating - accounts for two thirds of domestic and about a half of industrial and commercial energy use. In NI, the fuel used for heating is predominantly heating oil – in contrast to the situation in GB (and most of western Europe). The lower figure for industry and commerce is simply because of the substantial concentration of enterprises in the Greater Belfast area close to the existing gas pipeline.

Table E
Heating by Fuel

	%
Domestic	**69%**
Oil	87%
Natural gas	9%
Electricity	2%
Coal	2%
Industrial and Commercial	**31%**
Oil	60%
Natural gas	29%
Electricity	2%
Coal	8%
Other	2%

Source: DETI Consultation on Gas Extension 2011

Not only is heating oil the most frequently used fuel in NI by domestic consumers – and indeed by the majority of business consumers particularly small businesses, agriculture and other rural businesses – but it is also the most problematical. Heating with oil is;

- The most expensive fuel;
- The most damaging for carbon and other emissions;
- The most prone to energy security concerns;
- The least regulated fuel.

4.11 The prime reason for the disproportionate dependence on fuel oil is obviously the lack of connection to the main gas grid in NI compared to GB:

Table F
Proportion of Population Off Gas Grid

	% of population off gas grid
England	12%
Scotland	21%
Wales	19%
Northern Ireland	80%

Source: OFT

4.12 Oil, is of course, also still a feed stock to electricity generation in one of the three power stations (Kilroot – a dual coal and oil station) and in decentralised site energy for industrial and agricultural applications. But this Report is focussing on its domestic and heating use because of its effects on prices and fuel poverty (and indirectly competitiveness) and on carbon emissions.

4.13 Moreover, the supply and pricing of heating oil has been subject to a number of consumer complaints and enquiries from householders and small businesses about price, customer service and competition. This is not surprising when one sees both the relative cost of oil as compared to gas heating and the escalation in that cost (and that differential) over recent years.

Table G
Average Cost of Heating Per Annum by Oil or Gas

	2011 pa	Change 2009/11
Old oil boiler	£1,648	62%
Old gas boiler	£970	-27%
Difference	£678	41%
Combi oil boiler	£1,347	61%
Combi gas boiler	£800	-27%
Difference	£547	41%

Source: Sutherland tables

4.14 Within those figures there is an additional regressive effect. The most cost effective way of buying heating oil is to fill up a medium tank three times a year with a 900 litre delivery. But many households cannot pay that all in one go and resort instead to buying smaller amounts more frequently. As prices have escalated there has been a tendency to scale right down – with the poorest families resorting to buying in 20 litre drums. The aggregate annual price for an average dwelling of these various ways of buying is substantial (and far greater than regularly supplied mains gas or electricity):

Table H
Annual Cost of Heating Oil by Size and Frequency of Fill

	£ per year
900 litres (3 fills)	£1,730
500 litres (5.5 fills)	£1,781
300 litres (9 fills)	£1,909
20 litres (137 fills)	£2,691
Annual natural gas	£595
Annual electricity	£588

Source: CCNI, Power NI, Phoenix Supply Limited, firmus energy

These are substantially higher costs for oil users and this contributes to high levels of fuel poverty in NI. Moreover there is little sign of the delivery companies helping their customers to manage their expenditure; a Consumer Council report found that only 63 of nearly 300 suppliers offered any form of budget plan.

4.15 Almost all heating oil in NI is delivered to three depots in Belfast and one in Derry with 70 per cent coming direct via the British Petroleum (BP) terminal. However it is distributed by around 200 different companies varying from one person/one tanker operations to large companies, the largest of which is DCC; and about seventy of which belong to the NI Oil Federation. On the face of it, although the import is a near monopoly the distribution looks highly competitive.

4.16 However, the Consumer Council has long been in receipt of complaints not only about the price but also about differential pricing, failure to stick to the price agreed and poor customer services. For example the price in Belfast (with large scale market and apparently substantial competition) appeared to be higher than in the countryside with fewer suppliers and more costly logistics. There was a price spike last year just at the point where customers were most vulnerable. Nor is customer service good. Attempts to set up an agreed voluntary code of practice for the sector have eventually started to progress but as yet have not been finalised.

4.17 Even more seriously were allegations about the calibration at delivery of a product that varies in volume according to temperature. In October, the Enterprise, Trade and Investment (ETI) Select Committee in Stormont expressed their concern about some of these alleged practices.

4.18 Largely because of these allegations varying from price fixing collusion, mis-selling to calibration irregularities the Consumer Council referred the heating oil sector to the OFT. In this they were supported by similar pressure from Consumer Focus on the off grid fuel market in the whole of GB as well as NI.

4.19 In hindsight it might have been better if the reference had been NI only. The OFT conducted a substantial inquiry which reported in October 2011. Broadly its conclusions were that there was some evidence of misinformation, non compliance with regulations and poor customer service but not of serious anti competitive behaviour. Gross profit margins were not found to be unreasonable. Nor did they advocate price regulation.

4.20 Unfortunately although some of the OFT analysis differentiated between the GB and the NI markets their conclusions did not. The CCNI have several criticisms of the OFT Report as it relates to NI. Only two of the 180 odd suppliers identified by OFT replied to the questionnaire. OFT wrongly asserted that there were 10 suppliers in all post code areas of NI, whereas there are far fewer in many districts and only one in one district council area. And they were unable to identify why substantially different prices occurred in different places. The logic appears to be that there is wide competition in NI and slightly lower prices generally than in GB – that is to be expected with a dominance of oil in the market in NI (whereas the market in England is sparse and almost entirely rural); but by the same token prices should therefore have been better, collusion not suspected because of competition and customer service better for the same reason. None of that appears to be the case.

In view of the failure of the OFT Report to differentiate the situation in the NI market effectively, DETI should conduct a new review of pricing and competition in the supply of oil heating in the NI market including the oil supply chain.

In parallel, Trading Standards NI should be asked to actively investigate allegations of mis-selling and calibration distortions in the supply of heating oil to domestic consumers.

4.21 There have been a number of initiatives, starting with self help groups, charities and churches, to try to help households manage their accounts by saving through stamps or voucher schemes and similar arrangements. In about half of local authority areas there are now such schemes operating. But the take-up has not been high and there are anxieties about energy security. There has been little attempt to extend this cooperation to collective purchasing contracts. More support from the NI Executive and from local authorities is needed.

The NI Executive should legislate a universally available system of saving for purchase of heating oil across NI; this could either subsume or complement existing schemes and be available throughout NI - administered either by local authorities or under contract via the Post Offices and its local outlets and through credit unions.

A pilot pay-as-you-go (PAYG) scheme for heating oil is due to take place in 2012 in NI. Given the reliance on emergency oil drums for many fuel poor households this is a welcome step as it should aim to reduce the price per litre paid by consumers. However, it is important this scheme identifies potential issues of ownership, theft and liability. At installation of a PAYG meter at the household a full energy audit and benefit check could help further assist and identify fuel poor households.

Some concerns have been raised that consumers using the PAYG heating oil scheme will have to pay more per litre for oil - than if they bought larger fills - to offset the investment and risk factors. In NI consumers using PAYG for natural gas and electricity receive a discounted tariff. With the high reliance on heating oil and high levels of fuel poverty here a discounted PAYG tariff for home heating oil could be seen, in part, as a contribution to reducing fuel poverty by the oil industry.

In addition more local authorities, local businesses and local community groups could themselves set up as energy brokers in the oil sector – and potentially also for gas and electricity – using the larger market power to obtain better deals which also give the suppliers greater certainty of market demand.

Heating Oil Regulation

4.22 More fundamentally than issues of market abuse there is the anomaly of the largest single sector of energy for heating being outside the scope of the UR and outside the effects of policies designed to reduce carbon and improve energy efficiency and reduced fuel poverty. So far the UK, NI and RoI Governments have resisted economic regulation of the oil sector – although the 2011 DSD report on A New Fuel Poverty Strategy for NI does support regulation and levy for the oil sector (para 1.18). The OFT Report itself did at least recognise that 'it is an oddity of the NI market that the most common household fuel, heating oil, is unregulated...' whereas much less used natural gas is regulated.

The supply of heating oil to domestic and business consumers should be included in the mandate of the UR to ensure adequate customer service and genuine competition in the sector, and to ensure that the sector is treated in the equivalent way to gas and electricity so that it contributes to objectives of public policy including alleviation of fuel poverty and reduction of carbon emissions.

The UR should be required to introduce a licensing system for supply of heating oil to ensure compliance with minimum standards of price transparency and customer service and a system for dealing with complaints.

One of the requirements of the licence should be a levy on sales and/or importers so as to ensure the heating oil suppliers and importers make an equivalent contribution to energy efficiency and alleviation of fuel poverty as is made by the gas and electricity sectors.

The UR should also have reserved powers to introduce price controls in the heating oil sector if it is clear that competition is not delivering the best prices and customer service.

4.23 Over the medium term a sustainable energy framework needs the radical reduction of dependency on heating oil to be the aim for social, economic and environmental reasons – the reduction of fuel poverty, and of fuel prices generally, the competitiveness of industry in NI and the contribution to the reduction of GHGs. This is a long term programme – probably over fifteen years - but it needs to be made clear that is the direction and for it to be started now.

It should be a clear strategic objective of policy and regulation over the medium/longer term to reduce radically the dependency of NI consumers and businesses on oil for heating purposes.

4.24 There will be some rural locations where alternatives to oil heating even over that timescale will not be achievable, although even in the most rural areas where no gas pipeline or renewable source is ever going to reach it would be beneficial in both cost and carbon terms to use liquid gas rather than kerosene or other heating oil. There would of course be some remoter rural locations where neither pipeline nor renewable electricity would reach – but even there it would be better in carbon, safety and cost terms to use LPG cylinders, or biomass or wood pellets for heating purposes rather than oil.

The strategic objective should be to replace heating oil (and coal) as a feedstock and substitute pipelined gas or renewable sources.

Coal and Peat

4.25 The use of coal in domestic heating has remained quite high in rural areas particularly but also in central Belfast. It had been gradually diminishing but with rising oil prices there has been some reversion to use of coal (and to some extent peat) in both rural and urban areas. From the point of view of carbon reduction coal is as undesirable as heating oil – both in terms of carbon content and other emissions. In a medium term strategy it should be possible to eliminate coal for all regular use. A coal fire at Christmas might survive but not regular use. In rural areas various forms of biomass would be preferable and usually in the medium term cheaper than either coal or peat.

The strategy to reduce as far as possible heating oil dependence should also be aimed at eliminating use of coal and peat for continuous domestic (or commercial) heating.

Electricity

Electricity Supply

4.26 The wholesale electricity market is operated on an all island basis by the SEMO mechanism jointly between NI and the RoI URs. Generators above 10 MW and the Interconnector operate under SEM licence. The Systems Operator for NI (SONI) is also regulated under licence.

4.27 There are three NI based power stations:

Table I
NI's Power Stations

Generator	Size	Fuel source	Owned by
Ballylumford	1.2 MW	Natural Gas	AES (US)
Coolkeragh	0.5 MW	Natural Gas	ESBIE (RoI)
Kilroot	0.6 MW	Coal or Oil	AES (US)

Electricity is also imported via the Moyle Interconnector to Scotland operated by Mutual Energy (a cooperative) importing up to 500 MW (and exporting up to 80 MW); there is also an Interconnector with the RoI which is part of the SEM system, plus two small balancing standby interconnectors between NI and the RoI allowing NI Electricity (NIE) and Electricity Supply Board (ESB) to provide emergency assistance. There are smaller generators using renewable sources – wind, biomass and hydro. In total just over nine per cent of electricity is currently supplied from renewable sources and CHP, of which four fifths is from wind. It is the Government's target for renewable sources to reach 40 per cent by 2020, mostly through onshore wind generation.

4.28 The grid is operated by SONI and the transmission and distribution assets are owned by NIE (ultimate owners: previously Viridian, now ESB).

4.29 There are about 825,000 users of electricity from the grid of whom 92 per cent are domestic consumers. However, by consumption domestic households only account for 36 per cent, with small industrial and commercial users accounting for a further 42 per cent. The retail market is also dominated by the previous incumbent Power NI - then Viridian owned and formerly called NIE Energy and now Power NI. Until recently there was no competition in the domestic electricity market and only a small amount in the industrial market from Energia (also Viridian owned). However competition has now opened for domestic consumers with Airtricity (owned by Scottish and Southern) entering the market in 2010 and Budget Energy and Electric Ireland in 2011.

Electricity Prices and Bills

4.30 The average annual domestic electricity bill in NI is now £588 per annum (based on Power NI's average consumption and standard credit tariff). However, this average figure is misleading since it ranges from households who are virtually totally dependent on electricity and it also covers the majority of households - who use heating oil for all heating and some cooking purposes, and dual natural gas/ electricity households. Domestic consumers pay in a number of ways:

- Standard Credit;
- Direct Debit; and
- Key Pad/Prepayment meter

But for regulation purposes the market is simply divided into domestic credit and domestic key pad. About 36 per cent of domestic consumers are in the keypad sector (compared with 20 per cent in GB) and the rates are considerably more favourable for prepayment (keypad) customers relative to other forms of payment than they are in GB. Whereas prices for direct debit and standard credit are higher than in GB, those for prepayment keypad are lower than in GB.

4.31 Obviously competition and switching are pretty new features of the market and so far over 90 per cent have remained with the previous incumbent Power NI and over three quarters of consumers have never thought of switching between suppliers. The UR just recently has increased the capacity for consumers to switch from 7,500 to 9,000 per month and this should become unlimited later this year under the project Enduring Solution. However, these are early days for open competition in the sector. The market share of domestic consumers in 2011 in terms of numbers was:

Table J
Domestic Electricity Market Shares 2011

	000s	%
Power NI	688	92.0%
Airtricity	56	7.5%
Budget Energy	0.4	0.5%
Electric Ireland	0.2	

Source: Utility Regulator

Electricity Regulation and Competition

4.32 The retail market is operated under a price control tariff review system run by the UR setting Power NI prices every three years; competition has to match those prices. According to the UR the cost breakdown of annual domestic electricity bills in the regulated electricity market averaged over the past ten years:

Table K
Breakdown of Electricity Annual Average Bills 1999/2010

	% of Bill
Generation costs	65%
Use of system	20%
Public service Obligation	2%
System support services	2%
Supply costs	7%
Correction factor (net)	4%

Source: Utility Regulator

Hence nearly two thirds of consumer bills are a return to the generating company.

4.33 The regulation process is a complicated one of checking allowable costs in all areas of the chain and then allowing for a margin. The Consumer Council is consulted on the methodology, although the UR does not have to take the Consumer Council's views into account.

4.34 The formulas used in the UR's calculations are complex and in general are regarded as robust and have not been challenged fundamentally. However, a major dispute is arising over the cost of the largest element – the return to the generators. This is about how the costs and returns to the generators are justified, with questions about historic allowance for capital and for finance and the interplay between them, raising questions of whether the balance of risk is appropriate for domestic and business consumers relative to virtually nil risk for the generators.

4.35 This crucial querying of the process goes back to 2008 when the then UR asked one of his predecessors, Douglas McIldoon, to look at the system following some particularly controversial price rises. As well as commenting on the episodic price allowances, Douglas McIldoon made some general fundamental criticisms about the way the generators are rewarded and pointing to what he saw as fundamental flaws in the process resulting in all consumers paying too much and they have continued to do so. The UR and the industry rejected these assertions. In the intervening period this issue has not been resolved. Over the past few months several parties have urged a fresh look at the McIdoon analysis. In January 2012 the Consumer Council issued a public document (Consumer Council Analysis of the McIldoon Report: Orphans in the Energy Storm) arguing for revisiting the McIdoon thesis and for a new approach.

4.36 The argument is complex and relates back to how the generators' costs are rewarded under the SEM. McIldoon argues that the generators have gained excessively in two main ways: from allowance for the cost of capital in excess of what they, as relatively risk free companies, would in reality have to pay; and because of the capacity payment calculations which are based on a different kind of risk insurance; in a sense consumers are paying twice. In both cases he argues that it is consumers, not the generators, who in reality are taking the risk; the system removes risk from the generators. He also argues that renewable generators benefit even more because they get the price determined by the fossil fuel generation costs without having to incur them; and that consumers in NI are probably unfairly incurring these costs relative to consumers in the same market in RoI.

4.37 These are disturbing assertions and it is difficult to make a retrospective judgement let alone a prospective one. But the relative profit levels of the generators - relative that is both to other directly price regulated companies in the NI electricity system and to the generality of companies based in NI - do seem to suggest that the companies may be getting an over favourable deal - with consumers bearing the bulk of the risk.

Table L
Profit Levels in NI Electricity Companies

Type	Company	Profit margin 2011
Conventional generating companies	AES Ballylumford	26%
	AES Kilroot	28%
	ESB Coolkeeragh	30%
Renewable generating companies	Scottish Power Renewables	49%
	Airtricity	14%
Average generating companies		29%
Other electricity companies (price regulated)	NIE	11%
	SONI	4%
	Viridian Group	2%
Top 100 companies average		4%

Source: Top 100 companies, CCNI

At the very least this suggests that there are prima facie indications of something needing further investigation.

There should be an urgent review of the way in which capital expenditure and the cost of capital is allowed for and charged with a view to shifting the burden of risk from consumers to generators.

In view of the queries and allegations from Mr McIldoon and the Consumer Council there should be an independent investigation into the rewards to the generators through the capital and financing allowances in the regulatory process.

An Island of Ireland Dimension

4.38 Having an island of Ireland wholesale market and regulation should bring significant consumer benefit. However it is not yet clear whether consumers in NI are yet receiving the full benefit, or as great a benefit as those in the RoI.

Eventually a single retail island of Ireland regulatory framework would bring greater benefits – but only if the issues of equity and the appropriate sharing of risk is addressed.

Natural Gas

Gas Supply

4.39 Natural gas is a recent fuel source in NI arriving in 1996. All natural gas both for feedstock for two of NI's electricity generator at Ballylumford and Coolkeragh and for the pipelines connecting to households and business comes via the Scotland and NI Pipeline (SNIP). There is an arrangement for emergency (only) for gas to come via the Scotland Dublin North/South pipeline in emergencies; but there is effectively no storage facility.

4.40 Natural gas ought to provide NI households and businesses with a fuel that is cheaper, cleaner, more fuel efficient, safer and less carbon intensive than the heating oil alternative. As a heating fuel it is also cheaper than electricity. Yet gas is a minority fuel in NI. In GB around 95 per cent of properties are connected to the gas network; in NI the figure is still only about 15 per cent. Compared to over 800,000 domestic electricity customers there are only 136,000 domestic gas customers. There are three main reasons for this:

The relatively small geographical coverage of the two existing networks: the PNG network in Greater Belfast and Larne and the ten towns network run by firmus energy; The high cost of connection of properties to those pipelines and conversion from oil or coal to gas heating systems – on average around £3,000, and; The legacy of suspicion of gas as a hangover from the coal gas era with memories of poor performance, safety issues, smells and poorly operated district heating systems.

4.41 In Greater Belfast and Larne and in the ten towns there are 118,000 domestic connections and a further 18,000 small businesses. But there are still scores of thousands of properties within a few hundred yards of the existing gas mains network, and about the same within two miles. Even at the present level of connections annually there will still be thousands unconnected in ten years time.

4.42 It is argued below that the first priority for gas infrastructure investment should be the connection of those properties to the existing network and thereby making it economic to convert from oil heating to gas heating. This would also reduce over time the average price of gas to the existing consumers in the medium term as it would allow lower unit network charges as costs are spread across a wider base.

Table M
Potential for Consolidation of Existing Network Areas

Domestic	Phoenix - Greater Belfast and Larne	firmus energy - ten towns
Connected	128,000	10,000
Potential	300,000	90,000
Shortfall	*172,000*	*80,000*

Source: Utility Regulator

This connection programme needs to involve expenditure which will reduce the cost of conversion out of oil for households and businesses. It would not prevent choice but would make it economically crazy to stick with oil. It will also need leadership by example and advocacy from public authorities, medium and large business and the NI Housing Executive (NIHE) and other large residential landlords.

4.43 The potential for more than very limited extensions to the pipeline networks is limited and it would be costly. The cost of the proposed western extension is put at £178m; the cost of consolidating the existing network areas is much less. Even if both consolidation and a western extension were to be completed there are probably 300,000 who could not economically be connected to the network.

4.44 The most difficult decision will be on the proposed major western extension of the gas pipeline from two branches; Portadown to Magherafelt and Enniskillen or Derrylin plus a further extension from the northern branch of the existing pipeline from Derry/Londonderry to Strabane. Also under consideration is an extension to East Down. Ministers are in principle committed to the western extension – at an estimated of cost of £178m. The UR estimates this at about an average 2.3 per cent on annual gas bills. This estimate however excludes the cost to households and businesses in connection charges and costs incurred by the households themselves.

4.45 The reality is that because of the sparseness of population and the distances involved the extension would be within reach of only a small proportion of the dwellings and businesses in the west and north of NI and even of those within a relatively close proximity to the proposed pipeline only 70 per cent are likely to connect. Of the two sets of assumptions in the consultative paper on the western extension (Fig 2 p12), Business Model 1 results in under 8,000 connections and Business Model 2 just over 31,000 (DETI: Consultation on the potential for extending the gas network in NI: 2010).

4.46 This maximum figure of 31,000 compares to a total of over 400,000 not within reach of the existing networks – and virtually all of those are connected to the electricity grid. Moreover, the Net Present Value (NPV) of the western extension project is only positive if taken over a forty year time horizon with favourable discount rates. But natural gas is a transitional fuel. By 2030 it is likely that cost and prices will be equalled by renewable electricity and that demand for natural gas will have turned down. That is not to say that there would not be some advantage to those western consumers connecting in the early years. But their interests are better served with prioritising the western parts of the grid upgrade and its connection with renewable sources of electricity for heating as almost all premises will already be connected to the electricity network.

An Island of Ireland Dimension

4.47 Unlike electricity there is not yet a wholesale island of Ireland natural gas market or regulatory framework. If developed and properly functioning a common market framework should bring down prices over the medium term. Discussions on the Common Agreement on Gas (CAG) seemed to be making little progress and some say have stalled badly. However, the two URs (i.e. the NI UR and the Commission for Energy Regulation from the RoI) issued a joint statement in February recording discussions so far focussing on compliance with the EU Second Package. It also did reintroduce a bit of a sense of urgency but no clarity of clear medium term objective.

Efforts need to be made to accelerate those CAG discussions to move towards common regulatory assumptions and eventually to a common pipeline and interconnector system for wholesale gas.

Security of Supply

4.48 At present all natural gas comes via the SNIP pipeline run by Mutual Energy. It is vulnerable to sudden interruption for whatever reason. If there were a fully operational North South gas pipeline the vulnerability reduces. Because of total dependence on imports of natural gas through the interconnector and concerns about possible disruption of supplies through the interconnector - for whatever reason - the NI Executive in the Framework also identified the need for substantial gas storage and a project costing an estimated £280m is included in the Strategy, again to be paid for through consumer bills.

The cost-benefit of such a large facility for gas storage needs to be proven.

Gas Prices and Bills

4.49 According to the UR's Annual Report on average over the past ten years gas Bills have been made up as follows

Table N
Breakdown of Annual Gas Bill; 1999/2010

	% of Bill
Wholesale gas purchases	56%
Transmission costs	9%
Distribution costs	29%
	94%
Supply operating costs	6%
Margin	1%
Adjustments (net)	2%

Source: Utility Regulator

Apart from the brief period 2009/11 gas prices in NI have been generally higher than in Great Britain. This primarily reflects distance. The majority of gas consumers in both areas (65 per cent in Phoenix; 85 per cent in firmus area) pay via prepayment meters. The terms seem appropriate and provide consumers with convenience for households in managing bills and security of income to the companies.

Gas Regulation

4.50 Irrespective of whether there is substantial extension of the networks there needs to be an assessment of whether the networks should be combined into one and/or provide for the entry of other companies in wider competition at the retail end. At present there is no competition for domestic supply in the ten towns area and only very limited competition for domestic supply in the Greater Belfast and Larne area. There are slightly more competitors for the business market. However, there is little prospect for a major expansion of competition. Even so, there needs to be some investment in a potential switching system for gas consumers.

Payment Methods for Gas and Electricity

4.51 Price and choice should not be distorted by system of payment. The availability of different payment methods to NI consumers and the relative equity between them is better than in GB where – at least until very recently and still to some extent – prepayment meter consumers were at a systematic disadvantage.

In devising more tariff options companies and the UR should not jeopardise the broad equity between payment methods, or should they move to the kind of complex tariff structure that operates in GB.

Allowance also needs to be made for ensuring the financing of the proposed single pot on energy efficiency and built into the forward trajectory.

Allowance for energy efficiency measures and for promoting renewables and otherwise speeding up decarbonisation of energy need also to be separately identified in price control settlements. They also need to be explicitly identified on consumer bills.

A Service Obligation (SO) element – similar to the new ECO in GB - should be introduced in NI to raise from domestic and small business consumers their contribution to social, environmental and energy security objectives – subsuming current arrangements such as NISEP.

This SO/ECO should be clearly identified and applied in proportion to energy use above a minimum threshold; users below that threshold should not have to pay the SO/ECO; the cost to consumers of the social and environmental expenditure should therefore be proportional to use and hence the tariff would become more socially progressive and incentivise energy saving.

More radical medium term proposals for the role of regulation and the UR are spelt out under the section on Machinery of Government.

5 The Strategic Issues

Key Issues

5.1 The more immediate and medium term problems of the NI energy situation can be divided into three groups broadly in line with the three objectives of energy policy set out previously:

Issues of Affordability: escalating prices for consumers (and business) creates escalating fuel poverty;

Issues of Energy Decarbonisation: greening the energy system to mitigate and adapt to climate change - from generation to energy efficiency and conservation by final users;

Issues of Infrastructure: strategic priorities and funding for investment in gas and electricity networks, alternative energy and supply chains;

Issues of Regulation: how the role of the UR and regulatory framework might change to deliver these wider policy objectives.

Subsequent sections are written so as to differentiate these four strands but in reality they are all cross related and interdependent. It is important that synergies rather than conflict and trade offs are found so that the energy system becomes more sustainable in economic social and environmental dimensions; at the moment it is unsustainable on all three dimensions.

Fuel Poverty Figures

5.2 Changing the fuel mix and measures on energy efficiency will in part offset the likely medium term rise in average energy costs and prices. However there will still be the crucial issue of the distributional impact of fuel prices on the most vulnerable households – those in fuel poverty. NI's level of fuel poverty is by far the worst in any part of UK and Ireland.

Table O
Proportion of Households in Fuel Poverty (Conventional Definition) 2009

	2009
England	13%
Wales	26%
Scotland	33%
Republic of Ireland	19%
Northern Ireland	44%

Source: DECC, NI House Condition Survey 2009, RoI Energy Statistics

5.3 NI does a full assessment of the level of fuel poverty every three years (shortly to be reduced to 2 years but with a less robust sample base in size and detail) so the level and the differential is almost certain to be larger by the 2012 assessment – approaching 50 per cent. Vulnerable groups are most at risk from both fuel poverty and its consequences in terms of health and wellbeing: fuel poverty levels in NI rise to 53 per cent for households with at least one member between 60 and 74; and to 75 per cent for households with a member over 75.

5.4 The effects of fuel poverty on health and wellbeing, particularly on the elderly, children and vulnerable households who cannot afford to heat their homes to a recommended level, have been well documented. In NI in 2009/10 there were over 944 excess deaths ascribable to the cold winter and there are significant effects on the level of respiratory, rheumatic and heart disease.

5.5 As in the other countries of the UK, NI adopted a target to eliminate fuel poverty by 2016, although in NI this was a 'voluntary' target, not a legislative one as in the other countries.

There is now no chance of the 2016 target for the elimination of fuel poverty being reached. New targets need to be defined and set.

The total number of fuel poor needs to be broken down into target groups and realistic targets for policy interventions and reductions in fuel poverty need to be adopted.

5.6 As in GB hitherto the main source of funding for help to the fuel poor, whether via cross subsidy or a charge on supply companies – has directly or indirectly been met by other domestic consumers. NI has an acute problem about who meets the costs of such interventions because any cross subsidy is much more difficult to defend to other consumers when fuel poverty has reached nearly 50 per cent

- as in NI - than it is when only less than one in five are fuel poor as in England. Any direct or indirect cross subsidy has to be met by the other half of consumers – many of whom are only just above fuel poverty levels and all of whom also already face escalating costs.

5.7 Departmental responsibility for tackling fuel poverty rests with DSD rather than DETI. It is therefore seen as part of a social strategy rather than part of an energy strategy. The DSD drew up a consultation paper in March 2010 and, on the basis of that, issued in March 20011 A New Fuel Poverty Strategy for NI. That Strategy groups 18 actions to address fuel poverty under four headings:

1 **Targeting Resources** including a new definition and a severity index for targeting;

2 **Improving Energy Efficiency** including a 15 per cent increase in numbers treated under the Warm Homes Scheme, a Boiler Replacement Scheme, improvements in social housing, and more powers for Local Authorities plus assessments of possible schemes for Energy Performance Certificates, Equity Release, and Smart Meters;

3 **Achieving Affordable Energy** including support for savings and brokerage schemes and evaluation of energy efficient technologies;

4 **Building strong Partnerships** including looking at area based interventions ('the Kirklees model').

Some of these initiatives have been actioned or started and are cited below - but resources have been limited and meanwhile there has been little improvement and overall numbers have gone up further.

Concept and Definitions of Fuel Poverty

5.8 We need to make a lengthy diversion to consider potential changes to definitions of fuel poverty.

5.9 There have been arguments in NI (as in Whitehall) that fuel poverty is simply an aspect of general poverty in the population. This Report rejects that approach. Fuel poverty is indeed about income levels but it is also crucially about energy pricing and housing conditions: it will not be tackled simply by general anti poverty strategies. In NI the DSD commissioned Christine Liddell to look at the definition of fuel poverty. This mirrored what was going on with the Coalition Government in Westminster. The inexorable rise of the numbers of households in fuel poverty to 44 per cent in NI and 16 per cent in England has led both Governments to seek a redefinition of fuel poverty. That is the wrong response.

Rather than attempting to redefine the fuel poor there should be a concentration on cross departmental efforts to establish a better identification of groups of the fuel poor that can be targeted and more effective action to help those groups.

5.10 This is not to say that the current definition is entirely robust. The definition adopted by the UK Government in 1999 and subsequently by the devolved administrations, is based on the earlier definition and defines a household to be in fuel poverty if they would need to spend more than 10 per cent of income on maintaining a satisfactory heating regime. There are assumptions behind this definition which have been queried e.g. what is a satisfactory heating regime (usually defined as 21 degrees in the living room and 18 degrees in the bedroom); it is rightly based on 'required' expenditure not actual expenditure; and 10 per cent (originally based on twice the then level of actual expenditure) may be seen as an arbitrary figure. There are also efforts to draw up a common European definition.

Nevertheless the current definition has been an accepted definition for some time. The reason for it now being queried is essentially political rather than scientific: the numbers are rising, and large and targets unattainable so there is pressure to redefine the problem.

Nor is it to say we could not improve the definition. Both Christine Liddell for DSD in NI and Professor John Hills for DECC have produced forensic analyses of the definition and alternatives to it.

However the misinterpretation by DSD of Christine Liddell's very useful detailed work in NI to attempt a redefinition of Fuel Poverty in NI by focussing on those in the severest fuel poverty – 13 per cent in Christine Liddell's calculation – who would have to spend over 18 per cent of their income cannot logically be accepted as a redefinition of fuel poverty. The high and rising NI figure for fuel poverty simply reflects that prices are higher and average expenditure higher (and ignores the fact that incomes are lower) in NI than in GB. Attempting to redefine fuel poverty will not improve the situation for one single household in NI; nor does it make alleviation measures any easier to implement by attempting to redefine fuel poverty.

5.11 For Whitehall, Professor John Hills' analysis goes through the advantages and disadvantages of the current definition and comes up with an alternative: that alternative is based on a 'low income high costs' analysis which in effect would exclude those who were richer but in low efficiency accommodation and those who were poorer but in energy efficient buildings; there are a number of other changes such as treatment of housing costs. The Hills' alternative definition would reduce the number of households defined as being in fuel poverty in England from 3.9 million to 2.7million. It is still a big number and rising and it still shows little progress since 1996; because it is less sensitive to prices it also shows less of a dip in numbers to 2005 and less of a rapid subsequent rise. As Professor Hills' report shows it still leaves a massive problem in England.

The application of John Hills' formula for redefinition to the NI situation is difficult but it would probably not alter the figures quite so dramatically as in England (or the UK in total) because of the higher general fuel costs in NI and the lower incomes.

5.12 One trouble with both the old definition and the proposed new Hills' formula (or indeed the 13 per cent derived for the severest fuel poor in NI) is that the definition was essentially statistical and difficult to operationalise - i.e. they do not immediately identify those actual households who fell into that category. Instead analogues have been used for policy interventions in NI as elsewhere. Those proxies have mainly been based on entitlement to particular benefits. This is a bit hit and miss – particularly since it includes non means tested benefits like pensions and disablement entitlement – neither of which are necessarily an indication of poverty although they may be an indication of need for warmth.

5.13 An alternative proxy has been to look at the physical state of the dwelling. This would base priority on the standard of energy efficiency of the building - the estimated SAP rating. This makes sense but SAP ratings are generally not available for all individual identified dwellings but a general rating for that age, area and type of architecture. Again a bit hit and miss. Hills does also come up with another form of measure – the Fuel Poverty Gap. This might, with a bit more work, be a more promising concept measuring the depth of fuel poverty in aggregate; and could notionally do so for individual households thus establishing some form of priority.

5.14 Fuel poverty really requires a three dimensional graph with axes on household income, on energy prices and on the energy efficiency of the building. Intervention measures need to tackle all three dimensions. It would be desirable if any new approach could be more easily operationalised to identify actual households or at least terraces or blocks of buildings.

Decisions on changed definitions will not alter the reality: fuel poverty is widespread and rising and it is worse in NI than elsewhere in the UK and Ireland.

For the moment the conventional definition should be retained in NI; it provides historic continuity and an ability to compare across all four nations.

Policy and delivery should focus rapidly on those sub groups of fuel poor who are: identifiable by location; are in a position where specific intervention can help, or, are in the severest household difficultly.

These 'subsets' could be based on socio economic criteria or individual household characteristics. For example:

By socio economic characteristic

- Those districts/wards with the highest percentage of fuel poverty (on the current definition);
- Those in 'severest fuel poverty' i.e. needing to spend over 18 per cent of income on energy to keep warm;
- Those in the most deprived districts/wards base on the index of multiple deprivation;
- Those more than say 20 miles from the gas pipeline.

By household characteristic

- Those with household members over 70;
- Those in dwellings with the lowest SAP ratings (below 60).

See also para 5.23 on energy efficiency schemes.

Strategies and programmes on energy efficiency and on tariff structures should be prioritised on these sub groups.

In the longer run it may be sensible to seek a new definition but that redefinition should be agreed at UK level and if possible at EU level.

Whatever the definition, all measures that involve direct contact with households likely to be fuel poor should also offer a full benefits check.

Some of these issues are dealt with under energy efficiency below.

5.15 General economic improvements and benefit hikes raise total incomes for fuel poor households: one of the most effective measures in fuel poverty interventions has actually been to associate energy efficiency interventions with a benefit entitlement check. That has regrettably now been dropped from the - rapidly diminishing - Warm Front programme in England and shows no sign of re-emerging with Green Deal or the Eco proposals. However, benefit checks are still associated with the Warm Homes initiative in NI and that has made a real difference to many of the low income families involved. Benefit checks need to be retained and also associated with other programmes.

Climate Change and Carbon Saving

5.16 NI is covered by the UK Climate Change Act and indirectly by the UK's commitment on various EU targets for carbon reduction and renewable. The UK target is a reduction on 1990 levels of GHG's by 34 per cent by 2020 and 80 per cent by 2050. As a recent report from the (UK) Climate Change Committee put it: 'It is implicit that NI contributes to the required reductions. However the Act does not require specific targets or carbon budgets for NI'. The EU have also set a target for renewables of meeting 20 per cent of total energy supply for 2020 implying 15 per cent for the UK – which in turn implies a figure of 32 per cent of electricity being supplied by renewable energy sources by 2020.

5.17 In total NI GHG emissions are slightly higher in NI than in the UK as a whole.

Table P
Greenhouse Gas Emissions

	NI as a proportion of UK
GHG Emissions	3.5%
Population	2.0%
GDP	3.0%

Source: Climate Change Committee paper 'The appropriateness of a NI Climiate Change Act Nov 2011

It might therefore be presumed that NI's proportionate 'share' of GHG emissions reductions should if anything be greater than the UK overall target. Moreover, in February 2011, NI's Executive Interdepartmental Committee set GHG reduction targets (as measured before any trading of Emission Unit Allowance (EUA)):

- 30 per cent by 2020; and
- 35 per cent by 2025

thus setting ambitious targets for NI.

5.18 The main sectors compare with the UK as a whole in percentage terms as follows:

Table Q
Sector Contributions to NI and Total UK GHG Emissions (%)

	Northern Ireland	UK
Agriculture	27%	15%
Energy Supply	19%	35%
Transport	22%	22%
Residental	17%	14%
Industrial	9%	15%
Other	6%	-
Total	**100%**	**100%**

Source: Climate Change Committee paper 'The appropriateness of a NI Climiate Change Act Nov 2011

5.19 Clearly to meet overall cuts in GHG or carbon emissions there will need in NI to be action outside of the scope of this Report. It is important to note that overall emissions targets will not be met unless drastic action is also taken in relation to agriculture and transport.

The UK targets for reduction of GHG and NI targets for the decarbonisation of electricity supply (40 per cent renewables by 2020) need to be reaffirmed as objectives of NI energy policy: this means reinforced efforts on energy efficiency and on renewables.

There is a strong imperative for industry in all sectors in NI and bodies such as Invest NI and Enterprise NI to encourage research and investment in energy efficiency and renewable.

5.20 This Report is focussing on residential and energy sector emissions which together constitute 36 per cent of NI GHG emissions. Within the overall target of 30 per cent reduction of GHG's by 2025 the NI Government (DETI: Strategic Energy Framework) has also set an extremely ambitious target (by GB standards) of 40 per cent of electricity generation being from renewables by 2020, with the bulk coming from wind power. Although energy generation constitutes a relatively small proportion of NI's GHG emissions (19 per cent compared to 35 per cent in UK as a whole) that simply reflects that NI imports much of its mostly fossil fuel based energy from GB and beyond.

The residential sector - principally due to heating oil dependence - is therefore an even bigger issue in NI than in GB as regards GHG/carbon reductions.

To achieve the target reductions set by Government requires strongly enhanced action on both energy efficiency and renewable energy.

Energy Efficiency

5.21 Energy efficiency improvements of buildings, domestic heating and insulation will both help reduce carbon emissions and cut ongoing costs to consumers. Modern building standards should meet a SAP standard of around 80. NI homes have a wide range of basic structural energy efficiency largely depending on age of the building and on the form of tenure as the following two tables show.

Table R
NI Dwellings Stock by Age of Building

Housing age	% of total	SAP Rating <40	SAP rating >60
Pre 1919	12.6%	37.9	14.6
Interwar	10.5%	21.4	25.8
1945-64	17.2%	14.1	40.8
1965-80	25.3%	4.8	51.8
Post 80	34.4%	1	78.9

Source: NI House Condition Survey 2009

5.22 There is also a marked difference on average between the main different forms of tenure, although in part this also reflects the age of building with largely NIHE built social housing being on average more recent and with the best average SAP. NI on average has a better energy efficiency of buildings than GB especially in the social housing sector – but nowhere near that achieved in much of northern Europe.

Table S
NI Domestic Dwellings: Average SAP by Tenure

	Average SAP NI	Average SAP GB
Owner occupied	56.43%	48%
Private rented	56.58%	48%
Social housing	63.44%	59%

Source: NI House Condition Survey 2009

5.23 There have been a range of initiatives within NI to tackle energy efficiency in buildings; some have been branded as fuel poverty initiatives and some as energy efficiency. They include:

Table T
Energy Efficiency and Fuel Poverty Interventions

Scheme	Run by	Source of funding	Funding
Warm Homes and Warm Homes Plus	Bryson Energy and H & A Mechanical Services	DSD	£15m pa
Cosy Homes, Energy Saver Homes, Snug Plus, Toasty Homes, Toasty Homes Plus, “21 Degrees”, Cosy Homes Biomass Boilers/Insulation/ Solar Water Heating, Free Insulation, Hard to Treat Solid Wall Insulation, Wood Pellet Boiler Scheme and other non priority domestic schemes*	Power NI, housing associations, firmus energy, Bryson Charitable Group, H&A Mechanical Services, Airtricity and Energia	Northern Ireland Sustainable Energy Programme (NISEP) from electricity and gas suppliers.	£7,479,775 (2011-2012); £7,941,946 (2012-2013)
Heating Replacement Scheme	NIHE	DSD	£6.5m in 2009-2010

Pilot Boiler Replacement Scheme (for pensioners and older systems)	NIHE	DSD	£2m (until 31 March 2012)
Double glazing for all Housing Executive properties	NIHE	DSD	TBC
Local Authority Initiatives (now facilitated by transfers of HECA powers to LAs)	Local Authorities	TBC	TBC
Advice Schemes	Energy Savings Trust	EST	Not available in NI from 31 March 2012
Innovation Fund for Increasing Benefit Uptake	Social Security Agency (DSD)	DSD	£375k
Green New Deal (run by broad consortium)	Green New Deal Trust	Green New Deal Trust (mutual company)	Estimated £4m pa for three years

**For full list of additional details, visit http://www.uregni.gov.uk/uploads/publications/NISEP_List_of_Schemes_2011-12.pdf*

5.24 The funding for the Energy Saving Trust advice centre in NI has been withdrawn from 31 March 2012. This was estimated at £500k annually. The existing freephone number will cease to operate as a result.

Energy advice will be available from a range other sources, including the Warm Homes scheme and Bryson Energy. The latter will be launching a new freephone energy advice telephone number in April 2012 with an annual funding of £95,000 provided by the Housing Executive.

5.25 There have also been allocations from the Social Protection Fund such as £12m to NIHE for improvements on double glazing as an exclusive priority; there was also the allocation of additional Winter Fuel payments. Neither of these are easily justified in terms of targeting fuel poverty or of cost effectively reducing carbon emissions.

5.26 Also on the horizon is a NI Smart Meter programme and consideration of a NI version of the Green Deal being introduced this year in GB.

5.27 In total, DSD estimate there is now £31m a year being directly spent on the various energy efficient schemes. The largest of these – the Warm Homes programme has treated over 75,000 households since 2001/2 and in terms of outturn been relatively successful - marginally better than the English Warm Front programme - in targeting and reducing fuel poverty. The funding is received directly from the DSD and has now reduced to running at £16m pa dealing with 9,000 homes per year.

5.28 The recently established temporary Boiler Replacement Scheme is spending up to £1,500 on old boiler (those over 15 years) replacement for pensioner households, though that is coming to an end shortly.

In immediate terms the Boiler Scrappage Scheme should be extended beyond the deadline and in scope beyond pensioner households and the ceiling should be raised.

Similarly the Warm Homes Scheme should allow, in appropriate circumstances, for full conversion where close to the gas pipeline.

5.29 What appeared to be potentially the most ambitious of the NI schemes - Green New Deal - envisaged initiatives for area action under the consortium of private sector, state agencies, Non-Governmental Organisations (NGOs) and charities with a target for treatment of 100,000 dwellings rising to 500,000. Action so far has in practice been limited to pilot schemes in Newry. Regrettably there is now some scepticism that the Green New Deal consortium will work or at least deliver anything like its target.

5.30 There are a range of schemes, therefore, all of which have relatively small resources and little overall coherence. The range of schemes and the different methods of delivery cause both sub optimal efficiency and confusion. The DSD Report talks about consolidation of resources and that needs to happen and there is a need for radical reorganisation of existing and proposed initiatives. Although some of these schemes are funded direct from taxpayers, in practice the bulk of the expenditure is derived directly or indirectly from consumer bills.

Funding for existing and proposed interventions on energy efficiency of buildings and heating systems should be consolidated into one pot with projects and schemes being drawn down on a common basis of return and subject to overall strategic management.

Much of the delivery of enhanced energy efficiency schemes will need to be delivered by area based interventions and prioritised on the basis of the interaction between SAP ratings and household income.

The prioritised areas need to be identified and delivered and area based schemes delivered (as suggested on p73 and Table 5.3 of Christine Liddell's Report Defining Fuel Poverty in NI: A Preliminary Review):

5.31 Although the above should improve efficiency of delivery and raise some further resources for energy efficiency schemes, the total amount mobilised is nowhere near sufficient to meet the size of the problem. Of course the fact that for the majority (68 per cent) of households heating systems based on heating oil are by definition less efficient in terms of cost and carbon emissions than systems based on gas.

There needs to be a major campaign to shift, where possible, households away from heating oil and onto the natural gas networks.

Where households are beside the gas network but not connected to the gas network the most important energy efficiency improvement would be connection to that network or to renewable heat schemes.

5.32 However, this would mean the unit costs of interventions would significantly increase even where the pipeline is already close to the dwelling. Much more money is needed for these programmes. That could be justified and delivered if the Government were to treat energy efficiency as a form of infrastructure investment rather than a lever of social policy. Overall energy efficiency (in business and the public sector as well as dwellings) gives a significantly better return both in terms of cost savings and of carbon saving than most traditional infrastructure investment schemes.

Energy efficiency should be seen as a major part of the infrastructure programme and judged on similar criteria for cost saving and carbon saving. That would result in a significant shift of resources from larger infrastructure to energy efficiency improvements.

There needs to be a significantly higher Government expenditure on energy efficiency measures.

In addition, the financing of the subsidy and cross subsidy elements of energy efficiency schemes should be derived from a combination of the levy on gas and electricity suppliers and a new levy on heating oil and LPG distributers – the latter to be raised either on each distributer via a licence system or from the importer.

This may also require changes in departmental and regulatory responsibilities, probably the widened programme should be set up by DETI and administered under the auspices of the UR.

Smart Meters and GB Green Deal

5.33 Energy saving also requires changes in consumer behaviour. For GB the Government is committed to rolling out a programme of smart meters to all domestic consumers and 'in England' an offer of Green Deal arrangements. A final go ahead on smart meters is still awaited in NI. Strictly speaking the EU Directive only requires it if there has been a positive cost benefit assessment and that as yet has not formally been conducted and reported.

5.34 NI is therefore a bit behind GB in developing a strategy for smart meters. This may be an advantage. In GB a number of companies have gone ahead with smart meters although the standard specification – and hence the interoperability – will not be enforced until 2014. NI can benefit from that standard specification and still get close to the EU requirement that smart meters should in place by 2020.

5.35 If a similar programme was eventually triggered in NI it should go further than the GB Smart Meters programme and also be used to provide a point for an energy audit for every domestic dwelling in NI for energy efficiency and opportunities to improve. It would be like combining for NI elements of the Smart Meters programme with elements of the Green Deal in England.

DETI and the UR should require the matching of the EU Directive and GB commitment for gas and electricity companies to install Smart Meters in all domestic users by 2020 (or specified alternative later date), specifying a single model or at least single technical specifications for the smart meter.

However, because of the unique nature of NI, particularly the rural dimension, a smart meter programme needs to be preceded by proper pilot trials in different parts of NI.

A full Smart Meter programme should also provide the opportunity prior to installation for a complete audit of every household for energy efficiency - identifying problems of insulation, structure or heating systems of use in each household. This would both form the basis identification of Warm Homes or boiler replacement opportunities or other energy efficiency interventions under the single pot proposed above; and also for householder financed improvements along the lines of the Green Deal in GB.

GB Green Deal

5.36 In Great Britain there is the prospect of a massive programme of improved energy efficiency through 'Green Deal' financing arrangements – the details of which have yet to be finalised. The UK Government is also introducing for England the Green Deal programme designed to provide long term loans to home owners to invest in energy saving measures, the cost of the loan to be repaid via future bills on the house. It is therefore a programme primarily for the 'could pay' sector although there may be developed variants for tenants and for the fuel poor. The whole programme has yet to start and there are still a

number of uncertainties about the take up and the effectiveness. It would be wise for NI authorities to wait and see if it works in England.

NI Departments should, in say two year's time, review the implementation and take up by consumers in GB of the Green Deal scheme there, and consider whether a similar loan based scheme - repayable via future energy bills and administered via financial institutions - would work for owner occupiers and landlords in NI.

Area Delivery

5.37 Both in GB and NI some of the inefficiencies of delivery of those energy efficiency schemes designed to reduce fuel poverty has been that the identification and qualification for such assistance has been on the basis of individual household circumstances and hence on single dwelling treatment. Some schemes will continue to be developed on those criteria but as argued under fuel poverty much of the delivery of an enhanced energy efficiency strategy will need to be on an area or zonal basis. This implies some degree of prioritisation of areas.

5.38 It is of course also possible to prioritise neighbourhoods on the basis of the general quality of the property using existing statistics on the existing definition to identify where in general the most fuel poor live. Taken together they formed the basis of some of the Warm Zones interventions in GB. In Christine Liddell's report (Defining Fuel Poverty) there is clear identification of the NI districts with the highest incidence of fuel poverty. She suggests an area based approach to energy efficiency interventions on the lines of the Kirklees project in South Yorkshire – though it should, in fairness, be noted that although the Kirklees project is well known this approach was first pioneered, with significant success, in Belfast in the Beechmont and WIllowfield projects.

5.39 As identified under fuel poverty there are many ways in which areas could be prioritised. The combination of SAP rating and income gives an optimum template for such prioritisation. In purely fuel poverty terms this will inevitably be subject to criticism that it is not targeted enough. But improvements in building and heating systems efficiency will ultimately benefit future occupants and maximise carbon savings. There would need to be rigorous prioritisation.

To maximise cost effectiveness and speed a significantly higher proportion of energy efficiency interventions should be on an area basis. Area based interventions should be identified and prioritised on the basis of the interaction between SAP rating and income (as suggested on p73 and Table 5.3 of Christine Liddell's Report Defining Fuel Poverty in NI: A Preliminary Review).

Renewables and Decentralised Energy

5.40 At present the level of renewable generation of electricity is about 9.65 per cent, including hydropower and biomass.

The 40 per cent target for 2020 for renewable contribution to electricity is ambitious for NI (and more ambitious than most in Europe) but it is achievable and should be reaffirmed.

Beyond that there should be substantial decarbonisation of the whole energy system both in supply and use by 2030, with a view to near zero carbon by 2050.

5.41 Up to 2020 the renewables' contribution will consist largely of on shore and offshore wind generation. However, other renewable and low carbon technologies also need encouragement. For example a decision is still outstanding on whether to proceed with two large biomass plants on Belfast Lough. The problem has been that in both GB and NI the incentives have been inconsistent, frequently changed and inequitable between technologies. The cross subsidy incentive for wind energy (mainly ROCs) needs to be consistent and in place for that period i.e. it needs to be renewed beyond 2017 or alternative incentives put in place. All subsidies or cross subsidies need to relate back to a consistent price for carbon or carbon equivalent saved over time – probably related to the trajectory for a floor price of carbon (£16/tce rising to £20 in 2020) already announced by the UK government.

NI needs an urgent and full review of all incentives applicable for low carbon: ROCs, FIT, CRCs etc and the effects of the carbon floor price; the aim should be consistency of assessment.

Decisions are needed on long outstanding proposals for new green energy based sources for electricity - including on off shore wind proposals and the biomass plants.

5.42 This goes much wider than energy policy but the NI economy could benefit from the investment, R&D, jobs and skills that the development of renewables can bring. Having set an ambitious target in an area where innovation is key it would be disastrous if all the skills, technology and hardware were imported - just as now with fossil fuels - and NI lost the economic benefit of setting such a target.

Foremost amongst other renewables to be encouraged are those that can use feedstock waste (mainly from the province's substantial agricultural, food and forestry) into technologies such as biogas and anaerobic digestion and indeed domestic wood and biomass burners in those areas off the gas network. Geological studies suggest that geothermal heat sources are also possible. Above all there are those technologies that can utilise wave and tidal power which Ireland has in abundance.

The island of Ireland is in a good position to be a leader in renewable technology - tidal and wave power and power from agricultural waste in particular; this should be a priority for NI's universities and industrial research budgets and for cross border cooperation.

Invest NI should consider allocating a research budget given the potential for employment and skills growth from design and manufacture of renewable energy.

5.43 Many of the renewable based installations will be primarily decentralised generation applications (with many selling surplus into the electricity or gas grids). Decentralised energy should also be an arm of energy strategy, carbon savings and cost savings can be achieved with gas and electricity as well as renewables, in particular in relation to the provision of heat to both households and businesses.

Consideration should be given to developing a heat strategy, incorporating some of the features of the RHI but applying it also to low carbon technologies.

Encouragement of CHP and District Heating schemes should be a significant part of the mix – both stand alone renewable feedstock based CHP especially in areas unconnectable to the gas network on a commercial basis and in District Heating schemes connected to the natural gas network.

Planning permission for new residential or commercial estates requiring CHP/ District Heating to be the first and preferred option. In some cases - particularly at the point of connecting existing estates to the gas grid – retrofitting should also be considered.

5.44 At the same time it is important to ensure that consumer sensibilities are addressed and consumer protections are built in to the planning and authorisation of District Heating Schemes as, on the face of it, they do restrict choice and households could be susceptible to exploitation by the provider or the landlord.

Infrastructure Priorities

5.45 Simply to maintain a functioning energy system and to take advantage of new technologies requires substantial infrastructure investment from generation through transmission and distribution and into usage. A strategic approach to investment is also key to business and consumer confidence in NI.

5.46 There is of course a strong a priority argument for at least some of that investment - which should benefit the whole of NI's economy and society, and the environment – to be met from state resources. Historically pre privatised NI energy infrastructure was largely paid for out of tax payers' money. With current constraints on public expenditure and public borrowing that is no longer likely to be a politically acceptable option. On the other hand policy objectives have been decreed by politicians in Stormont, Westminster and Brussels which mean infrastructure expenditure over the next twenty years will need to be higher simply to make sure the system works and the lights do not go out. Those policy objectives relate to rapid decarbonisation of energy supply, substantial alleviation of fuel poverty, reducing communal and geographical inequalities, enhancing security of supply and reducing import costs. It is therefore incumbent on the public authorities to operate a framework whereby the investments needed to meet those objectives are met. Largely that will be met from the revenue from domestic and business consumers within the regulatory framework set by the Government and URs. Even so there will need to be some direct government expenditure.

5.47 The NI Government, in DETI's Strategic Energy Framework 2011, have gone some way to identifying the infrastructure needed to meet these varying objectives. That document and other governmental and UR pronouncements have identified key infrastructure developments to be allowed for in the current price review period and beyond, and in some cases the relevant cost and how they will be funded. The costed ones include the following:

Table U
Energy Infrastructure Requirements

Investment	£m
Electricity grid	**898**
Business as Usual' upgrading	**607**
Interconnector	**76**
Renewables:	**215**
Medium term plan	*70*
Clusters (net)	*18*
Long term plan	*127*
Gas	**420**
Gas storage facility	250
Western extension of pipeline	170
Energy efficiency	**310**
Smart meters	280
Energy efficiency schemes*	30
Total	**1,628**

Source: DETI Strategic Energy Framework 2010
Note: *Around £30 per annum

5.48 In the Strategic Energy Framework document DETI refer to £1bn investment in the electricity sector and attribute all of it to the adaptation for renewables; in fact most of that billion appears to be much needed upgrading of transmission and distribution lines - not specific to renewables. The document also estimated that the cost of that £1bn on consumer bills would be an extra £49/83 per household each year at current prices (although it also says that could be offset if fossil fuel prices rise relative to renewables). It is not clear how that calculation is made but if correct it implies an average additional cost to domestic consumers (gross of any offset) of about £7 per annum for every £100m of investment.

5.49 The issue of the western extension of the gas pipeline has been dealt with above under the gas market. That would cost £178m with the cost of connection falling directly on consumers. Because of the small number of connections it is likely to deliver - as indicated above- the conclusion in this report is that the western extension is likely to be less of a priority than other expenditure.

5.50 Unfortunately there are no equivalent estimates for the cost of other aspects such as enhanced connection to the existing gas grids or a consolidated energy efficiency programme. Elsewhere there is reference to the cost of a biomass generator but not other renewable generators - nor for conversion of Kilroot Power Station away from oil and coal. The infrastructure programme is therefore nowhere set out in its entirety.

5.51 Very little of this investment will be met from public funds. In a separate document on investment strategy (Building a Better Future: 2011) DETI set a total of only £105m public expenditure in energy networks to 2016. The main burden will fall on the consumer – domestic and business. Key strategic decisions need to be made on the capital expenditure needed to extend the gas and electricity transmission and distribution networks and on the enhancement of generating capacity as well as an energy efficiency programme. These decisions need to be taken quickly. Only then can timescales and revenue requirements be established for the next five and ten years and difficult planning decisions progressed.

Hence a central task of Government and the UR is the need to continue to ensure adequate resources for the appropriate infrastructure investment and maintenance. Infrastructure development and financing has to have a clear strategy and a narrative that is understood by consumers, business and local communities.

5.52 There are inevitably choices and potential conflicts. Not all of the desirable investments can take place in parallel and not all can be afforded even over a lengthy timescale. Moreover, not all objectives and not all propositions are being judged on a consistent cost benefit basis, even in its widest sense. This is partly aggravated by differing departmental or industrial sponsorship – some programmes which clearly ought to be regarded as infrastructure investment and judged on the same long term criteria of economic, social and environmental return are not seen as investment because the return is to the community and the environment rather than to the company or the exchequer, principally the much higher levels of energy efficiency investment that is required.

5.53 All such investment requirements for social and environmental purposes should therefore be seen as part of the investment prioritisation process. This will annoy many in the energy sector who see these as being not really 'energy' measures and as none of their business – simply government and pressure groups

interfering. It will likewise be dismissed by many campaign groups who see their objectives – social justice or greening the planet – as overriding all others. The reality is that infrastructure and investment – the priorities and the funding - do need to be assessed together.

5.54 There is also the question of sequencing of changes in the fuel mix. Natural gas needs to be seen as the predominant fuel for the areas it serves probably for the next thirty years but it is a transitional fuel; in the long run there needs to be a move to non carbon sources of electricity for the whole of NI.

5.55 Against this backdrop a central task of Government and the UR will continue to be to ensure resources for the appropriate infrastructure investment and maintenance.

The most rational strategy in terms of economic cost effectiveness and environmental and social return would be to prioritise:

- Investment in energy efficiency;
- Substantial modernisation of the ageing electricity network, it needs to be upgraded and adapted to renewable sources;
- Consolidation of the existing gas networks in Greater Belfast and Larne and the ten towns (and thereby facilitating a switch out of oil) by connecting all domestic and commercial users within close proximity of the network;
- Clearing the financing and planning issues to speed up the North South Interconnector and planning new interconnectors with Great Britain and the RoI - with a view to moving to an eventual north west European Supergrid; and
- Developing renewable generation resources and their connection to the electricity network to serve primarily the west and south of NI.
- This would mean the down prioritising of the western extension of the gas pipeline.

5.56 Having set out that scenario as the basic backdrop to the Report we need to recognise that there are two potential major changes to that backdrop which may or may not happen but would be of major importance.

5.57 The first relates to the possible exploitation of shale oil and shale gas. At the time of writing there is still uncertainty whether the shale gas or shale oil indentified in County Fermanagh and in neighbouring counties south of the border can, should, or will be exploited on an economic scale. If there were substantial sources of shale gas in Ireland and the economics and environmental and safety issues could be effectively addressed then Ireland could, for several decades, be in a transformed position as a source of fossil fuel, probably self sufficient and indeed an exporter. It would mean that – contrary to what is assumed below - gas would be the predominant fuel in Ireland for much longer than two decades.

5.58 There are however considerable problems with shale gas. Small scale exploitation is unlikely to be economic and large scale exploitation would cause significant environmental problems and completely undermine NI's carbon reduction targets and EU commitments (and likewise in the RoI). Its extraction and use is more carbon intensive than natural (sea) gas and its widespread use would undoubtedly reverse progress on carbon targets and in the development of renewable energy in Ireland. There are also a range of local environmental and safety problems about the 'fracking' process - ranging from water contamination and methane release to potential earthquakes - which have led to its banning or restriction in several American States and EU countries. If shale gas were deemed non viable for economic or environmental reasons – as some environmentalists already argue – then technology and public opinion might allow a faster development of renewables so that parts, at least, of NI could 'skip gas' and move more swiftly to a predominantly renewable based energy mix by 2032.

5.59 Similarly double edged is the possibility of nuclear power playing a major role in energy supply in NI or Ireland as a whole. This is a delicate issue in public and political opinion in NI. In reality NI already uses nuclear power – via the interconnector since a significant part (currently about 20 per cent) of GB energy is nuclear sourced within the GB nuclear power sector - which is now about to embark on a new phase of nuclear rebuild – and also indirectly through the interconnector with France. NI's future energy mix is in any case likely to be increasingly nuclear sourced. On the other hand the economics of building a nuclear power station in Ireland are not at all clear – the size of the island of Ireland market is less than the output of an optimum size state of the art nuclear power plant, and nuclear generation, economically best at running at a constant rate near capacity, is really best at only supplying the baseload in any economy. It could of course be argued that with a single nuclear plant Ireland could become both self sufficient and a net exporter of energy and that there are several potential locations where a nuclear power station could be sited on the coasts of NI or the RoI. That is true. But it is still not obvious why an Irish site would be favoured by the global interests that control the substantial funds that nuclear investment requires. And in terms of the SEM in Ireland the economic and security issues of being so dependent on one plant would be difficult. Moreover, public and political antagonisms to nuclear power in NI (and the RoI) run very deep.

Whilst development of either shale gas or nuclear would make a dramatic difference to NI's energy, both of them present serious imponderables as well as political difficulties. The majority of this report is therefore based on the assumptions at the beginning of this section and on neither shale gas nor domestically based nuclear power playing a role in the next twenty years.

If that is wrong and either did materialise, it would make a very significant difference to the long run position and to some of the recommendations – but not to the next ten years.

A decision will nevertheless be needed within the next few years on both shale gas development and on nuclear power.

6 Regulator and Regulation

Price Controls, Choice and Competition

6.1 There are still extant in the UK various models of independent economic regulation each with their own esoteric features reflecting both the nature of the industry they regulate and the political and societal context in which they were legislatively established or altered. Some theorists would see them as a straight line progression from state monopoly to full competition – via private monopoly, regional monopolies, dominant companies with 'ankle biting' competition, regulated oligopoly, quasi competition and no doubt other stages with diminishing forms of price regulation appropriate to the stages. In that context NI electricity and natural gas are at a relatively early stage – the 'dominant company/ankle biting competition stage'. The reality is that markets do not move in straight lines and NI may not move much away from the current market structure – though competition might grow a bit it is unlikely to match even the 'regulated oligopoly' of the GB market. Price controls and other interventions have to recognise this reality.

6.2 Choice for NI's consumers – particularly domestic consumers – has hitherto been limited; moreover, experience of exerting that limited choice through switching has not always been effective or financially beneficial. In electricity and natural gas supply much of the choice that a consumer wants will be delivered by each supplier having a range of tariff options. This is absolutely not to encourage such a wide range of tariffs as exists in the GB market (which mainly serves to confuse the average consumer - let alone the most vulnerable) it is to provide consumers with the ability to switch between tariffs as well as between suppliers. That requires greater transparency of options by supply companies enforced by the UR.

There should continue to be a focus on competition and the encouragement of new entrants. But that has to be tempered with the recognition that in a market of this size there is a limit – admittedly not defined - on how much further competition can be developed.

Given limited competition and prospects for more competition also being limited it is important that the UR retains price controls in gas and electricity markets for domestic consumers.

However, the time limits for regulation could be extended from three to five years to provide certainty both to investors and consumers.

6.3 It is important also to recognise that with competition being limited on prices there needs to be encouragement of non price competition through customer service improvements and development of energy services.

Non price competition needs to be encouraged by the UR.

Regulator Remit

6.4 The UR in the NI system is already, in many ways, in pole position on the delivery of energy policy objectives. Yet the UR is not involved with several of the key aspects of that policy.

6.5 For a start the remit does not extend to the key heating oil sector on which the bulk of households and small businesses rely for their heating. In relation to electricity the principal objective (stemming from the Energy (NI) Act 2003) is indeed 'to protect the interests of consumers wherever appropriate by promoting effective competition'. The remit then specifies the main way in which to fulfil that principal function – '(a) to secure that all reasonable demands are met' and '(b) to secure that licence holders are able to finance (their) activities'. In other words this relates primarily to economic prices to the consumer and ensuring adequate supply; the UR is only required to 'have regard to' issues of affordability, disadvantage or environmental sustainability.

6.6 In relation to gas the main objective deriving from the same Act is actually 'the maintenance of an efficient, economic and coordinated gas industry' with consumer protection reduced to a 'having regard to' status. And all reference to consumers – as with electricity – does not differentiate between the interests of today's consumers and those of future consumers. In GB the remit of Ofgem was explicitly changed to ensure the medium/long term interests of consumers was taken into account.

6.7 This seems to understate the range of issues for which the UR is held to be responsible. In practice in the various price determinations it is clear that past and present URs do indeed take a wider view. But that in turn is a cause of confusion and one of the reasons determinations are often so contentious. For example, regarding the recent determination for PNG, the UR determined that the company had been over-compensated and in part needed to make recompense to consumers generally; a more rational decision might have been to reallocate that to more rapid connection to the gas network or to energy efficiency improvements or reducing the bills of low income groups in fuel poverty.

The UR's remit should be extended to cover the supply of heating oil to both business and domestic consumers. Powers in this sector should cover competition and choice, transparency, customer service, the ability to impose mandatory Codes of Practice, an energy efficiency levy, and reserved powers of price control.

The remit also needs to be extended to incorporate more explicitly the environmental and social dimensions of policy (as well as energy efficiency) rather than them being seen as constraints on an essentially economic UR.

Role of Consumer Council

6.8 The Consumer Council has played a key role in NI representing consumer concerns and the longer term consumer interest in energy policy issues. On occasion this has led to some disputes with the UR and with Government Departments as well as energy companies themselves. It is important that all parties recognise the independence of the Consumer Council as an advocate and voice in energy policy and that independence needs to be maintained. At the same time there may be a case for greater involvement of the Council in the regulatory process itself. This is closer to the Ofgem proposals under the new RIIO framework and could be done in a number of ways – a clearer role for the Council at key stages of the price determination and other regulatory processes; a requirement that the UR and the Department take into account the Consumer Council view at the draft final decision stage - and report on how they have done so; or the creation of an internal consumer panel with links to the Consumer Council (probably with parallel arrangements for business consumer interests).

There needs to be a strengthening of the Consumer Council's role in the regulatory process and discussions need to take place on how that is best achieved.

A Radical Approach to the Regulation of Energy in NI

6.9 There is a need to align the role of the UR with the wider policy objectives; a more radical approach is needed.

Over the medium term the UR needs to move away from specific cost reflectivity and towards a pricing system which directs the market to longer term public policy objectives. This new approach should begin to be implemented after the expiry of the present price review period for both gas and electricity – in other words thinking and design should start now.

6.10 In order to mobilise the market to meet the multiple objectives of energy policy the UR and the Department need to introduce a radically different template for price structures for domestic consumers and small businesses. The present structure means the unit cost of electricity is higher for low users than high users and the marginal cost of a unit of electricity is falling. See for example the differentially lower rate at higher volumes for domestic consumers of PSL and firmus energy.

CHART II
Tariffs on Gas and Electricity Bills

Mr Alan Example
Sample Road
Sample Town
BT00 0AA

Bill Period: 11 Mar 2010
02 Jun 2010
Date of Issue: 04 Jun 2010
Account no: 123456789

meter no	meter readings		conversion factor		gas used
	current	previous	units	conv.factor	kWh
	2770e	2465	305 m3	11.0028	3358

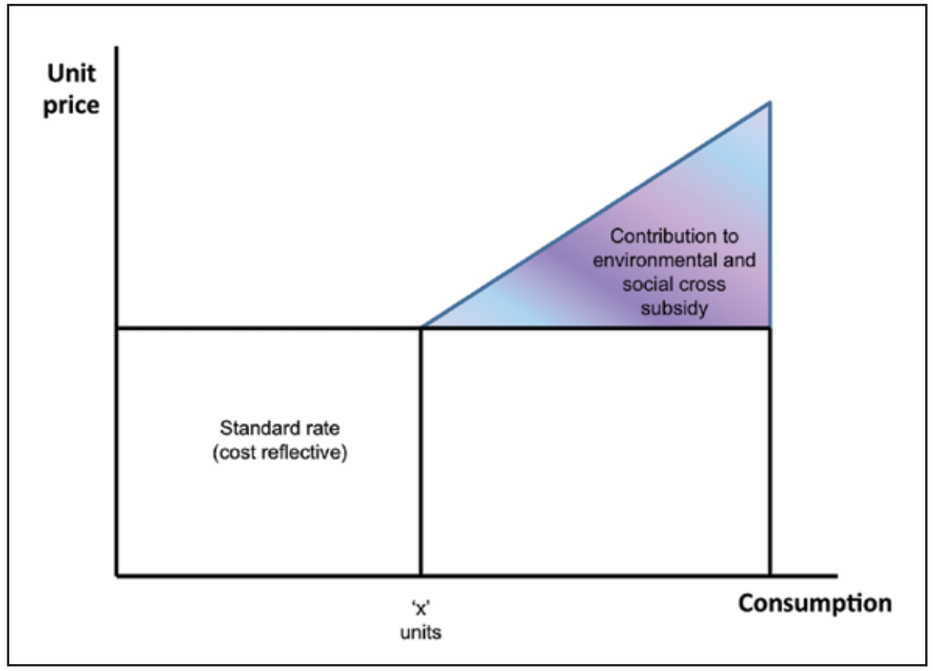
		Amount Due
Last Bill Amount:		79.71
01 Apr 2010 Direct Debit		33.00CR
04 May 2010 Direct Debit		33.00CR
01 Jun 2010 Direct Debit		33.00CR
0-500 kWh	500@4.789 p 23.94	
Over 500 kWh	2856@3.187p 91.02	
7.5% discount	-8.62	
V.A.T. @ 5% on 106.16	5.32	111.66
Direct Debit discount (inc VAT)		5.10CR

Put simply the more you use the less you pay per unit; and the poor generally speaking pay more per unit. This is both socially regressive and environmentally counterproductive and it acts directly contrary to policy objectives for energy efficiency, energy security and the alleviation of fuel poverty for most – though admittedly not all – of the fuel poor.

The UR should devise and require tariff structures for the medium term that move broadly to a rising marginal cost per unit consumed and not the reverse.

The most straightforward way to introduce this relatively simply is to limit the 'premia' collected for environmental or social purposes via the gas or electricity bill to higher levels of use. There would therefore be an initial tranche up to say 'x' units which could be simply reflective of average cost. Beyond that level there would be a rising contribution to the costs of decarbonisation and the element of cross subsidy for fuel poverty reasons and hence a rising marginal price (without going the full way to rising block tariffs).

CHART III
Diagram of Possible Future Tariff Structure



However, caution must be taken with the implementation of this approach. Many households living in fuel poverty will live in homes which are less energy efficient and as a result consume more energy throughout the year. This problem would be further exaggerated for large households living in fuel poverty.

6.11 This is probably the most radical proposal in this report. As such there is likely to be resistance from the industry, from the UR – and indeed from some domestic consumers. Hence we need a fall back.

In default of this proposed radical restructuring of price tariff structures, or in advance of its introduction – there should be a requirement on gas and electricity supply companies to provide a social tariff i.e. that for designated groups of means tested benefit recipients, the lowest available tariff will always apply.

This stipulation by the UR is preferable to a discount approach to a social tariff, although that could be easier to implement and enforce.

7 Machinery of Government

Departmental Responsibilities

7.1 There are up to eight NI Departments involved in energy policy in NI – the principal ones being:

TABLE V
Departmental Responsibilities for Energy

Department	Energy Responsibilities
DETI	Overall energy strategy
DSD	Fuel poverty and energy efficiency
DOE	Climate change, planning and Local Authorities
DARD	Rural Dimensions
OFMdFM	Poverty and pensioners
DHHSPS	Health related aspects
DEL	Promoting knowledge and skills
DFP	Funding arrangements, energy performance of buildings

In addition there is some influence of UK Departments, particularly DECC and the Treasury.

7.2 It is understood that there is a review underway of the structure of Departments in NI with possible mergers and reconfiguration now being considered.

Consideration should be given to the creation of a single Energy Department for NI.

If that is not politically and/or administratively possible then greater coherence is necessary. DETI needs to be explicitly the lead Department across all dimensions of energy policy. Future statements of energy strategy need to have incorporated the other department's dimensions and a single policy document issued and kept to by all departments.

Parliamentary Accountability

7.3 In Stormont, Select Committees largely reflect departmental structures and hence again there is no single focus of parliamentary oversight, in terms of accountability.

Even if there is not a single Department for Energy the oversight of energy policy in the Assembly may be most effectively served by having a focussed Energy Select Committee.

An Island of Ireland, GB and EU Dimensions

7.4 The creation of the Single Electricity Market (SEM) for the island of Ireland complicates the regulatory strategy but fundamentally provides a real benefit to the developing infrastructure and regulatory framework.

The island of Ireland SEM should be developed further and progress made on CAG.

However, to be fully effective it does require enhancement of North South Interconnector capacity. And the single market approach needs to be delivered also for natural gas. The natural gas interconnector with Scotland has already played a major part in meeting NI's energy demands. In the longer term that will be the case even more with more east west interconnection for both gas and electricity. As GB generation decarbonises this will also make a contribution to meeting carbon reduction targets. Nuclear power – not popular in NI - will in the long run be a larger component of that imported electricity.

7.5 NI is bound by – and faithfully adopts - EU frameworks for energy policy including the latest Third Energy package and, in the longer term, the plans for a North West Europe Supergrid. However the NI influence on that policy is indirect through the UK Government and Ofgem – and to a limited extend through the RoI authorities. Close engagement with DECC is needed, but with the creation of effective single markets for gas as well as electricity the all island dimension in Brussels should also play a major role. DETI and the UR need to reinforce efforts to ensure that NI interests in energy are recognised by DECC and Ofgem and taken into account at EU Ministerial Council, European Parliament, EU Commission and ACER levels.

7.6 One solution suggested was that the NI UR should be subsumed into Ofgem. That is not a sensible proposal: the markets and the players are almost entirely different, the island of Ireland dimension is vital and the approaches of the two URs are for mainly good reasons very different.

This report does not support the subsuming of the NI UR into Ofgem.

However, NI Departments and the UR need to reinforce efforts to ensure that NI interests in energy are recognised by DECC and Ofgem and taken into account at EU Ministerial Council, European Parliament, EU Commission and ACER levels.

LARRY WHITTY
MARCH 2012

Annex

Northern Ireland Electricity

Company	Supply domestic	Supply Commercial	Generation	Transmission	Distribution	Systems Operator	Interconnector	Ownership
Power NI	X	X						Viridian Arcapita
Airtricity	X	X						SSE
Energia		X						Viridian Arcapita
Electric Ireland	X	X						ESB
firmus energy								Bord Gais Energy (RoI)
NIE				X	X			ESB
AES			X					Bord Gais Energy (RoI)
SONI						X		Eirgrid (RoI)
Mutual Energy							X	Mutual

Northern Ireland Gas

Company	Supply domestic	Supply Commercial	Transmission Greater Belfast and Larne	Transmission ten towns	Distribution Greater Belfast and Larne	Distribution ten towns	Pipeline	Ownership
Phoenix Supply Ltd			X		X			Killen Group, Tera Firma
firmus energy	X	X		X	X	X		Bord Gais Energy (RoI)
Phoenix Natural Gas			X		X			Killen Group, Tera Firma
Mutual Energy							X	Mutual
Airtricity		X						SSE
Energia		X						Viridian Arcapita
VAYU		X						Glencore

Notes

Notes

Notes

An Independent Report by
Lord Whitty