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electricity supply for Northern Ireland

gas for Northern Ireland
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REGULATION OF ELECTRICITY & GAS

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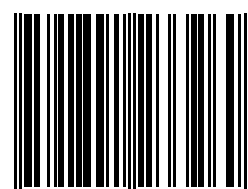
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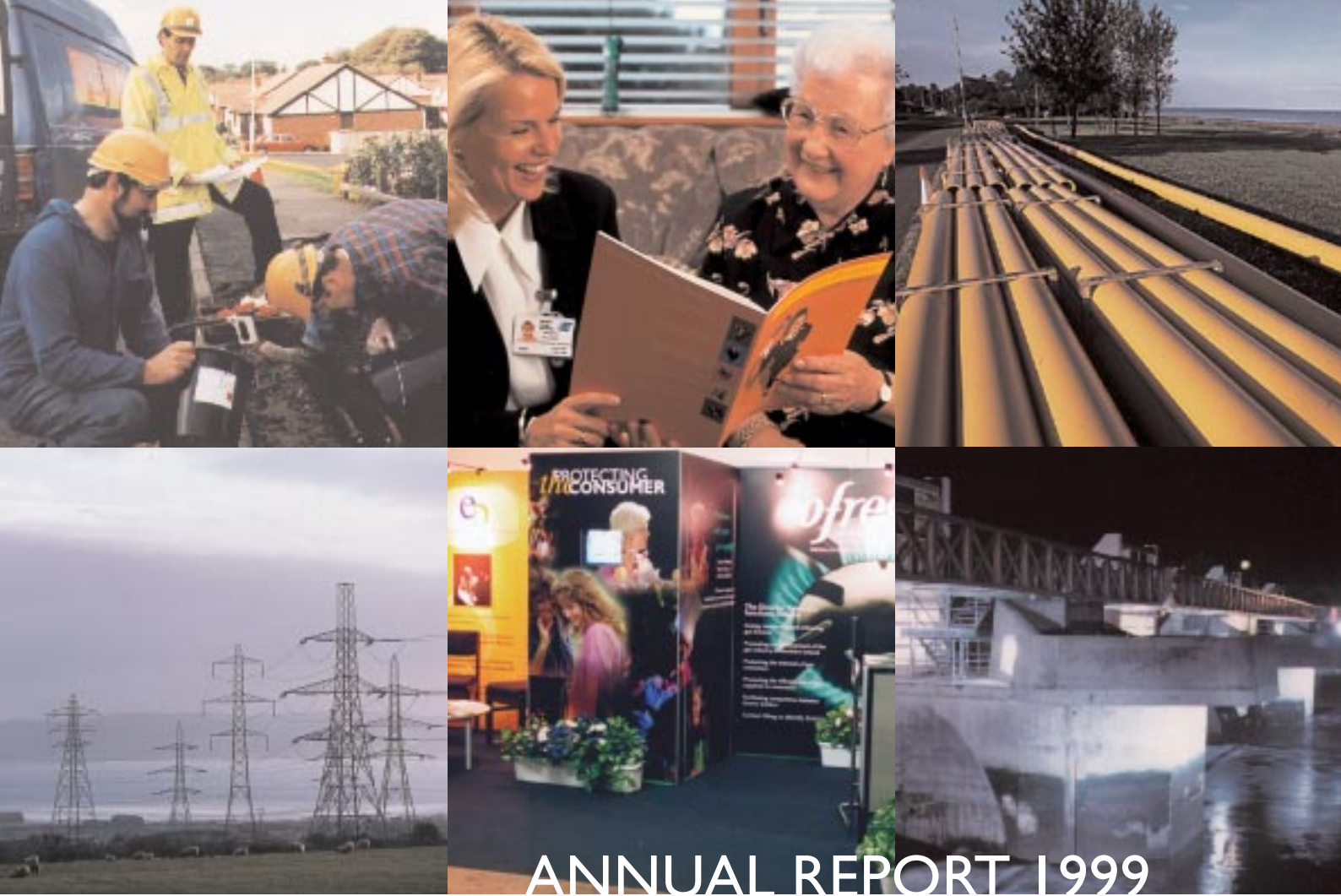
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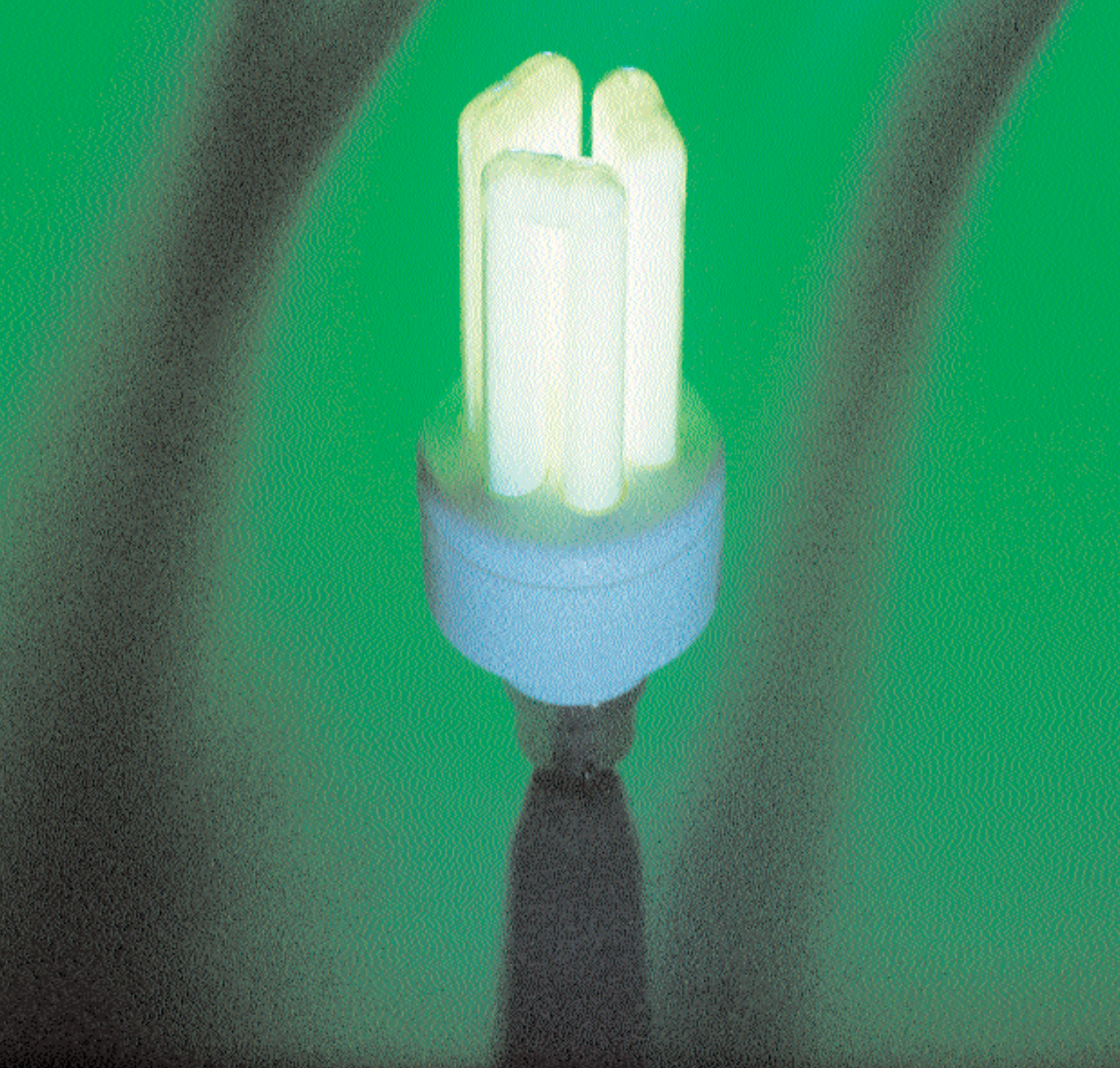
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ANNUAL REPORT 1999

Director General of Electricity Supply for Northern Ireland

Director General of Gas for Northern Ireland



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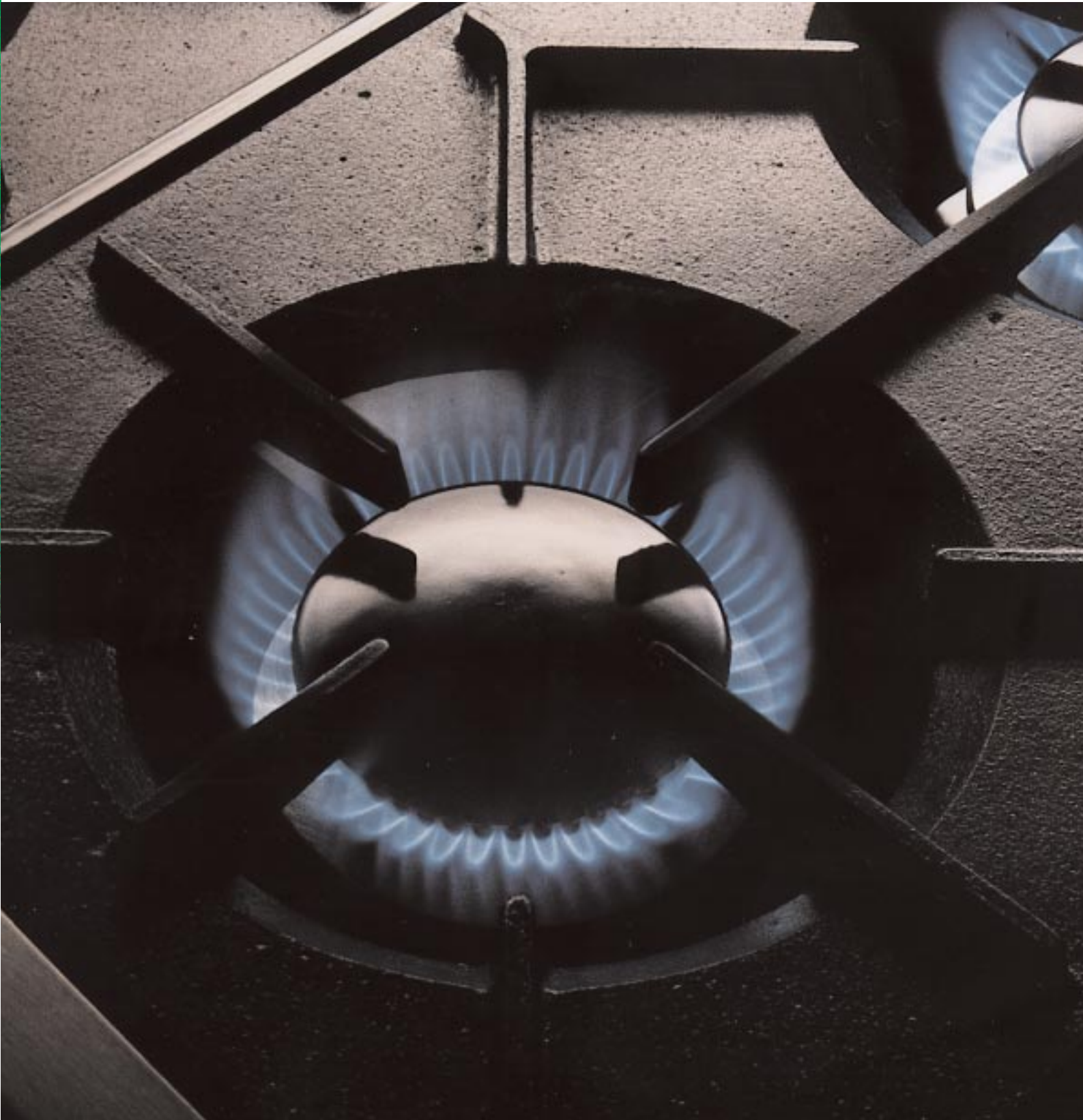
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To: The Department of Economic Development

I enclose my report for the year ended 31 December 1999 as required by Article 53 of the Electricity (Northern Ireland) Order 1992.

I confirm that during the period of this report,

- i) I made no references to the Monopolies and Mergers Commission;
- ii) I made no final or provisional orders; and
- iii) I received no general directions under Article 50(2) of the Order.

D B McIlldoon

Director General of Electricity Supply for Northern Ireland



The Electricity Industry in Northern Ireland

Statement from the Director General of Electricity Supply for Northern Ireland

Two events dominated the Northern Ireland electricity supply industry's year. The first was the 1998 Boxing Day storms which cast a long and black shadow over the first half of the year. The second was the opening of the electricity market.

The Boxing Day storms at one stage had 160,000 customers off supply and it was several days before the last customers were restored. NIE's poor communication handling caused a great deal of public annoyance and triggered an inquiry by the House of Commons Northern Ireland Affairs Committee.



The timing of the storm was particularly unfortunate since NIE had begun to develop information systems to handle large scale losses of supply. The severe weather caused widespread loss of power in parts of the Irish Republic as well as Great Britain and NIE's performance in restoring supply to customers did not appear to be worse than that of other utilities. NIE did moreover do its best to make amends to customers for the inconvenience caused by making compensation payments which were more generous than would have been required by a strict application of their guaranteed standards.

NIE were also able to divert £26m of Capital Expenditure (Capex) to proposals which in NIE's view would put them on a better footing for facing storms in the future and for keeping customers informed in that event. The ease with which NIE could re-allocate resources without any resultant increase in Customer Minutes Lost (CML) is an indication of the extent to which their Capex allowance in the 1997 price control had been in excess of what they needed to meet their foreseen needs. The Boxing Day storms did have a positive effect in accelerating NIE's evolution into becoming a much more customer focussed company. The Company's management made genuine efforts to learn from the event and to bring about improvements in the way in which the company relates to its customers.

The Internal Market for Electricity (IME) Directive required the EU electricity market to be 26% open on 19th February 1999 – though the Irish Republic had a one year derogation. It was several months before Government had all the legal provisions in place for Northern Ireland's market opening.

Market opening allowed the 240 largest customers, who between them accounted for 26% of Northern Ireland's electricity consumption, to buy their electricity from suppliers who would no longer be required to buy their electricity from NIE's Power Procurement Business (PPB). The difficulty lay in the fact that apart from one 60 Megawatt set at Coolkeeragh which was not economic there were no generating sets in Northern Ireland of any size which were not contracted to PPB. Potentially this situation could have lasted at least until the Scottish

Interconnector was constructed in 2002 and/or new independent generation was built somewhere on the island. If events had been left to take their course not only would there have been no initial benefit from market opening but new generation when it eventually arrived would have been able to charge a large mark up in a seller's market and PPB would be left holding expensive stranded contracts.

The first step was to begin to build a competitive market culture to enable industry participants – suppliers, customers and later generators – to learn how to operate and secure the best possible terms in a competitive environment. In order to do this I agreed with NIE that they should auction up to 200MWs of their capacity. The details are given in Chapter 2. As the capacity remained under contract to NIE we called this a VIPP (Virtual Independent Power Producer).

Four Second Tier Suppliers (STSs) bought capacity and for the first time some customers in Northern Ireland had the opportunity to shop around for their electricity supply. Coinciding with low gas prices the opening of the market was a success financially for customers and as a learning experience for all the participants in the market. Particular credit must go to the NIE Systems Transmission Operator who has to manage the transition from a monopoly market to a competitive market.

While eligible customers enjoyed reductions of from 5% to 15% on the previous year; franchise customers – the remaining 74% – had nominal flat prices or a fall in prices in real terms.

In other respects the year was slow moving. The proposals for changing generator contracts dragged on interminably in the absence of any effective incentive to either NIE or the generators to bring matters to a swift conclusion.

Ofreg continued to push at the frontiers of what might be done about energy efficiency, CO₂ reductions, renewables and fuel poverty with consultation papers published throughout the year. As a result of these activities the energy efficiency levy this year increased to an equivalent of £1.50 per customer. It will rise to £2 per customer in 2000 and remain at that level in real terms for the duration of the Supply price control. NIE's Supply Business responded to its



incentives on energy efficiency by out-performing the target energy saving. At the end of 1999 Ofreg published a consultation paper proposing a Supply price control which would increase further the incentives on NIE to promote energy efficiency.

It also became evident in 1999 that the Government's preferred form of energy taxation would add to the existing burden of electricity customers in Northern Ireland while being an inefficient mechanism for securing CO₂ reductions. Ofreg with others made representations to Government and to House of Commons Committee about the certainty of pain for electricity customers and the uncertainty of environmental gain. To no avail.

In common with other regulators Ofreg was charged with overseeing the gas and electricity industry's work in preparing for the year 2000 and avoiding the disasters which doom mongers were predicting because of the "Millennium Bug." All the electricity companies co-operated fully in this work and I would like to record my appreciation of the work which their staff and mine put into dealing with this somewhat surrealistic problem.

Electricity customers may not have gained much in 1999 though some progress was made. But at least they survived to harvest whatever opportunities the next millennium will bring to realise the real potential that exists in Northern Ireland for clean electricity at internationally competitive prices.





2

COMPETITION AND REGULATION

Wholesale Competition and Market Liberalisation

Background

Ofreg, in co-operation with DED and the electricity industry, began the process of implementing the European Directive on the Internal Market in Electricity (IME) in early 1998. The Directive came into force in July 1999, following a process of development and consultation which began the year before. During the early months of 1999 the electricity trading model which was developed to implement the requirements of the IME Directive was finalised and agreed by the industry participants. The IME Implementation Group, made up of DED, Ofreg, suppliers, generators, NIE and the CBI advised DED during the process.

The Directive

The IME Directive has had a number of important implications for Northern Ireland. It requires there to be a facility to allow direct trades between “eligible” customers and independent generators, it requires that the transmission system be placed under separate management from non-transmission activities, it sets regulations relating to the commissioning of new generation plant, it provides rules for the provision of separate accounting requirements and it requires there to be a transparent method of access to the system.

While the Northern Ireland electricity system post privatisation provided for some of these, eg., the system access in Northern Ireland would already have qualified as it is “regulated third party access” which is compliant with the Directive, there was a wider need to restructure the industry to meet the new market conditions.

This restructuring was primarily needed to allow for trade to take place between eligible customers and independent generators. The 1992 model of trade in Northern Ireland allowed de jure supplier competition, but on restrictive terms. NIE Power Procurement (PPB) was established as a single buyer of electricity, which it purchased under long term Power Purchase Agreements (PPAs) from separately privatised generators. The PPB then set a Bulk Supply Tariff (BST) at which all supply companies (including NIE Supply) must purchase. This model clearly prevented the type of direct generator/customer trades which the Directive requires.

The underlying logic in the implementation of the Directive is to promote competition both within and between member states, and through competition lead to a convergence of electricity prices across Europe via the creation of a single internal market in electricity. In the context of Northern Ireland being among the highest electricity price regions in Europe, the aim of the Directive is particularly important.

The basic premise of the Directive is to permit “eligible” customers (as defined by each Member State) to trade directly with independent power producers. In the Northern Ireland context this has been implemented such that the market was initially opened to 26.37% from July 1999, made up of the largest electricity consumers.

The criteria for eligibility were that each customer should have either a maximum demand of 1 MW or an annual load of 2.5 GWh, on a single site basis. The decision to limit the type and number of customers was taken for two reasons: to limit the set-up costs which could have outweighed the benefits to customers, and to minimise the degree of potential stranded cost which could have resulted from customers having the option to bypass the long term power purchase arrangements in place and thereby increase the burden on non-eligible customers. Further market opening will proceed in the understanding that extending opportunities to avail of lower costs to some customers should not raise costs to those who are ineligible.

The Interim Trading Model

The Northern Ireland trading model is designed around bilateral contracts between customers and suppliers/generators. These are commercial and unregulated agreements between business entities, outside the remit of the DGES. The market itself is however regulated and it will continue to be so.

The electricity system, as described above, which existed pre-July 1999 was based on a single buyer structure, with monopoly/monopsony position in the electricity supply industry. All customers would ultimately, whichever their supplier, pay the Bulk Supply Tariff for their wholesale electricity cost. The separate NIE Transmission and Distribution business recovers a regulated Use of System charge to meet the price controlled “wires” costs.

The new trading arrangements require that eligible customers have the option to trade directly with Independent Power Producers (IPPs), either as or through licensed suppliers for their energy supplies. Therefore the





single buyer structure as set up in 1992 is not compatible with the IME Directive under which generators may carry out bilateral trades with suppliers who then negotiate deals with individual customers. It is also possible for an eligible customer to obtain a supply licence and deal directly with generators but none have yet taken up the option.

Settlements

The nature of electricity systems is such that they must physically balance generation and demand in every half hour period. For this reason an electricity trading system requires a corresponding system for settling the financial effects of system imbalances which occur. The system depends upon customers' aggregate expected demand for the day ahead and the corresponding "nominated" dispatch of generator plant to meet that expected demand being declared to the system operator who then dispatches the generating sets accordingly. If perfect prediction were possible then the system would be in balance, but as there is likely to be over/under consumption and over/under dispatch there needs to be a formal "Settlements" system in operation.

This has been developed and implemented for the new market, and is currently being operated by the Transmission System Operator under agreements with industry participants. The "Interim Settlement Code" and "The Interim Settlement Agreement" define the financial flows of settlements. If, for example, there is a requirement for a supplier to buy extra electricity to supply its customers' unexpected demand (ie there is a need for "top-up") the Supplier would buy the excess from NIE at the BST. If, conversely, the customers' demand was less than expected, the excess would be purchased by NIE at an administered price (lower than BST to reflect the marginal value of energy to the system). Generators may also over or under dispatch their plant, and the top-up and spill implications of this are also included in the Settlement Code. To prevent suppliers and generators intentionally over or under nominating their trading there are tolerance error bands built into the rules, with more punitive penalties applying outside specified tolerance levels.

On the day before dispatch the system operator must receive final details for the next day's trading. Prior to this "gate closure" IPPs may trade with each other in order to establish their joint best effective generation merit order; ie if one generator had more capacity than contracts for the following day it could sell its extra capacity to another generator if it were economic for both parties. This establishes a crude form of merit order among IPPs and as the market becomes more sophisticated should lead to the maximum utilisation of the least cost plant and the lowest possible sustainable price to customers.

There is some symmetry between the franchise market contracted generators and the eligible customer market so that there may be occasions when IPP output could be cheaper than the marginal (fuel) cost of the PPA plant, and the IPPs are entitled to submit a bid price to the system operator for dispatch over and above their nominated amount for the eligible market. This has the potential benefit of reducing the marginal cost to the non-eligible market.

The trading system which has been developed in Northern Ireland is intended to be efficient by ensuring that there is merit order dispatch and that the efficiencies of lower cost plant are captured through the competitive nature of the market by final customers. In preparation for further market opening next year mechanisms need to be put in place to ensure that this happens; if there were evidence that this was not happening further regulatory intervention would be necessary.

The Transmission System Operator

The IME Directive also required that a new and managerially independent Transmission System Operator (TSO) be established which would take over the role previously carried out by the NIE Power Procurement Business and parts of the Transmission and Distribution business. The TSO is "responsible for operating, ensuring the maintenance of, and if necessary developing the transmission system in a given area and its interconnectors with other systems in order to guarantee security of supply." The TSO plays a vital role in the operation of the market and therefore to ensure impartiality and inspire confidence in the integrity of the new market structure, NIE introduced new management structures relating to the TSO, and these were approved by Ofreg as meeting the Directive's requirements of management separation.

Licence Modifications and the Interim Settlement System

Ofreg worked with industry members during the year to introduce licence modifications to meet the EU requirements for unbundling of accounts, management separation of the

newly designated TSO, the creation of a separately licenced Viridian subsidiary (trading as "Energia") to undertake sales to eligible market customers and the implementation of the trading system. The Interim Settlement Agreement and the Interim Settlement Code were developed, which contain the trading and financial settlement rules, and all market participants must be signatories before they can commence trading in the eligible market.

The Opening of the Market from 1 July 1999

The market was opened on 1 July, and while the mechanisms to allow trades between eligible customers and Independent Power Producers (via licenced Second Tier Suppliers – STSs) were in place, there were no IPPs in place, since all the generation in Northern Ireland was under long term contract (PPAs) to NIE PPB. Therefore, in order to stimulate the market, Ofreg arranged for a part of the PPA capacity which was surplus to the requirements of the non-eligible customer market to be auctioned to STSs.

The VIPP

This capacity was referred to as the Virtual Independent Power Producer (VIPP). Two auctions, each of 100 MW were held, with a published reserve price (£5 and £6 per kW respectively), set to allow suppliers sufficient scope to offer eligible customers a discount on the BST at resale. The auctions were held in July and August and were open to any licenced supplier. The capacity secured by the bidders (see table below) became available for use on 1 August and 1 September 1999. Having gained rights to the capacity, suppliers were charged for fuel used on the basis of a published reference formula.

The Table below summarises the results of the two VIPP actions.

	Bidders	Reserve Price	Highest Bid	Lowest Bid	Average Bid Price
1 st Auction	Energia, Premier Power, ESB, Powergen	£5,000 per MW	£7,000 per MW	£5,100 per MW	£5,828.5 per MW
2 nd Auction	Energia, ESB, Powergen	£6,000 per MW	£6,711 per MW	£6,005 per MW	£6,150 per MW

Ofreg subsequently sought feedback from the successful auction participants as to their progress in the market, with returns indicating that eligible customers had been offered savings in the region of 5–15% on the average BST.

Following successful initial market opening, Ofreg and DETI re-convened the IME Implementation Group in late 1999, in order to maintain the momentum and prepare for further market developments in the course of 2000.

Cross-Border Trading

The Republic of Ireland obtained a one-year derogation from the Directive, with the market not due to open until February 2000. The Directive requires that where two countries are interconnected, that eligible customers in each jurisdiction be able to trade with suppliers in the other, and vice versa. Therefore, in order to meet this requirement of the Directive, Ofreg and The Commission for Electricity Regulation (CER) in the Republic of Ireland began discussions with the industry regarding a suitable means to allow trade across the North-South electricity interconnector. In November 1999, following initial consultations, Ofreg published a consultation paper on Cross Border trades, which sought responses from interested parties before the end of the year, such that a suitable interim interconnector trading model could be in place for 19 February 2000. At same time CER published a similar paper seeking the views of parties in the Republic of Ireland.

Conclusion

The market opening under the IME Directive will continue, and during the course of next year it will expand to 30.29% in April 2000, 32% in October 2000 and to 35% in April 2001. Ofreg will continue to ensure that the benefits of liberalisation and cross border trades are extended to customers in the most cost efficient manner, without placing any cost burdens on non-eligible customers.

Regulation

Renegotiation of Generator Contracts

The average price of generation in Northern Ireland in 1998–1999 is about 3.81 p/kWh (units sent out). This compares with the current Demand Weighted Pool Selling Price in England and Wales of around 2.7 p/kWh.

The high price of generation in NI compared to GB is a direct result of the contractual arrangements put in place at the time of privatisation, and some of these contracts have an earliest cancellation date of 2010. The price of electricity purchased from generators is comprised of two main elements: energy payments for the fuel used in generation; and availability payments for each MW of available capacity at the power stations. Availability payments are designed to provide an incentive to each generator to maximise the time each unit is available to generate even though in practice it may be surplus to requirements. Availability payments also cover the power stations' operation and maintenance costs as well as providing a rate of return on their investment which in 1998/99 will cost around £142m. Energy payments are payments for the fuel used in generating electricity, and these fluctuate with the world market prices of the particular fuels.

Reduction in the generation component of prices could be achieved by cutting the level of the annual payments in the existing contracts or buying out the existing contracts at some discounted price.

The negotiations which have been taking place with the generators since 1997 have revolved around achieving some combination of the above price cutting methods at each power station. In August 1998 the DGES published his consultation paper The Ballylumford Proposal, which detailed the solutions put forward by Premier Power (the owners of Ballylumford) to the high cost of generation in NI. In December 1998 he published a paper with all the generators' proposals entitled Reducing the cost of generating electricity in Northern Ireland. At the end of 1999 negotiations are still in progress however it is hoped that the generation issue, which has proved to be a particularly complex problem, can be finally sorted out in 2000.

Price Control Review

Price controls are a central feature of utility regulation in the UK, and they are the means by which utilities' allowed revenues are established. Price controls are reviewed regularly, in NIE's case every five years. NIE's original price control was set on 1 April 1992 by DED, and had been in place for five years on 1 April 1997. In July 1996, the DGES published his proposals for revising NIE's price controls. The DGES asked NIE to agree the price controls for its three regulated businesses – Power Procurement, Supply and Transmission and Distribution. NIE agreed the control for its Power Procurement business but not for Supply or T&D.

The DGES then referred the controls of the two businesses whose proposals were rejected to the Monopoly and Mergers Commission (MMC). The MMC presented their findings to the DGES in March 1997. After taking account of the MMC's findings the DGES announced, in August 1997, that he was not going to implement the MMC report in full. In October 1997 the DGES published his licence modifications for NIE's price control which were based on a price control for NIE's Supply business which implemented the MMC's recommendations, and a price control for NIE's T&D business which followed the MMC's recommendations closely but involved an adjustment. The adjustment applied to NIE's allowed revenue, which the MMC had set at £575m, the DGES used a figure of £538.5m for NIE's allowed revenue figure.

NIE applied for a judicial review of the DGES's decision in relation to the T&D price control and a hearing took place in December 1997 in the High Court. The court's judgement was handed down on 24 June 1998, and this upheld the regulator's decision. NIE appealed against the decision of the High Court and the Court of Appeal hearing was held on 15 October 1998. On 30 October 1998 the Court of Appeal ruled in favour of NIE.

In December 98 the licence modifications in relation to the Power Procurement and Supply businesses of NIE were formally adopted. At the time of this report the modifications in respect of the T&D business had still not been formally adopted.

Interconnectors:

The possibility of an interconnector between Scotland and Northern Ireland has been considered for more than a quarter of a century. In 1991 DED and NIE decided to provide a 250MW interconnector between Scotland and Northern Ireland and a 'Heads of Agreement' was signed by Scottish Power and NIE in which the terms for the sale of electricity and the construction of the interconnector were fixed. The project passed a planning inquiry in Scotland in October 1997, and received outline planning approval in Northern Ireland in June 1998.

An economic purchasing appraisal had originally been completed in 1995 on the interconnector project, however the DGES decided to reinvestigate NIE's economic purchasing obligation as many factors had changed since that time. In February 1998, the DGES commissioned London Economics to undertake the economic purchasing appraisal. In November 1998 the DGES wrote to NIE to inform them that to buy electricity across the proposed interconnector is not in breach of their economic purchasing obligation. There were some important modifications made to the original supply agreement between NIE and Scottish Power: Firstly, the original supply agreement was for 15 years and required NIE to take 1250 Gigawatt hours – about 15% of NIE's total requirement at pool selling price – which last year averaged 2.7p per kWh. The new agreement requires NIE to buy 1000 Gigawatt hours for 5 years and 10 months only at a price of 2.1p per kWh. Secondly, the new agreement allowed for immediate 50 per cent access to the interconnector by third parties with full access after 5 years and 10 months. This will bring increased trading opportunities to industry in Northern Ireland. It is expected that the interconnector will be operational in 2002–2003.

In spring 1995 the Tandragee – Louth interconnector between NIE and the Electricity Supply Board (ESB) in the Republic of Ireland was recommissioned after 20 years of unavailability due to the security situation. This 300MW interconnector continues to bring benefits to Northern Ireland in terms of reduced spinning reserve and in the longer term a deferral in the requirement to build additional generating capacity.



Comparison With Electricity Prices in Great Britain

NIE's tariffs for 1998/99 were unchanged from 1997/98 for the typical standard domestic customer. Despite this NIE remained the highest cost supplier of domestic electricity in the UK. The bill for the typical domestic customer in Northern Ireland was £311 compared to the UK weighted average of £251, according to data published by the CRI (Centre for the study of the Regulated Industries). See the table below.

United Kingdom Domestic Tariffs 1998/99⁽¹⁾

Assuming an average consumption of 3300 kWh per annum for Standard Domestic Tariff customers excluding rebates and mid-year tariff reductions.

Method of Calculation

- 1 The figures exclude VAT at 5% for the UK.
- 2 Eastern Electricity's charge per unit applies to the first 702 units of each quarter. Each unit is charged at 6.13p after that.
- 3 London Electric's charge per unit applies to the first 1500 units of each quarter. Each unit is charged at 6.03p after that.
- 4 Northern Electric's charge per unit applies to the first 625 units of each quarter. Each unit is charged at 6.20p after that.
- 5 SEEBOARD's Standard Domestic Tariff comprises unit charges only: 9.90p for each of the first two units used each day, and 6.51p for all others.

		Cost per Unit (pence)	Standing Charge Per Qtr (£)	Typical Bill per annum (£)
EASTERN ELECTRICITY	(2)	6.53	6.37	239
EAST MIDLANDS ELECTRICITY		6.38	8.43	244
LONDON ELECTRICITY	(3)	6.12	11.04	246
MANWEB		6.68	11.55	267
MEB		6.40	7.42	241
NORTHERN	(4)	7.07	9.95	273
NORWEB		6.41	8.58	246
SEEBOARD	(5)	9.90	0.00	240
SOUTHERN ELECTRIC		6.22	9.39	243
SWALEC		7.26	11.00	284
SWEB		6.88	8.55	261
YORKSHIRE ELECTRICITY		6.14	7.50	233
ENG & WALES WEIGHTED AVERAGE		6.77	7.99	248
SCOTTISH POWER		6.75	10.11	263
HYDRO-ELECTRIC		6.54	11.36	261
NIE	(6)	9.16 ⁽⁴⁾	7.94	311
UK WEIGHTED AVERAGE		6.82	8.85	251
ESB	(7)	7.08	5.65	256

Source: Centre for the Study of Regulated Industries; Charges for Electricity Services 1998/99

6 NIE's rate is 9.16p for the first 250 units per quarter. Each unit is charged at 8.16p after that.

7 Figures quoted are in £IR. Figures quoted are for urban domestic premises. Standing charges for rural domestic premises range from £9.64 to £10.14. The figures exclude VAT at 12.5%. Source ESB.

The price of electricity supplied to a typical customer can be further broken down into its component parts i.e. Generation, Transmission and Distribution (T&D) and Supply. If we look at Generation, T&D and Supply we see that Generation in Northern Ireland is 24% more expensive than in GB. T&D is 29% more expensive, however Supply is 15% cheaper than in GB and indeed NIE's supply business is the most competitive in the UK.

Information on the price at which electricity is sold to industrial customers is more difficult to find as they are usually supplied under confidential contracts. However National Utility Services compiled an International comparison of industrial electricity prices in April 1998, and

by using figures provided by NIE we have been able to get a rough comparison. This shows that prices to Industrial users in NI are 45.4% higher than in the UK without load management. With load management included the differential is still 23%.

The high price of electricity in Northern Ireland stems from the high cost of generation and the fact that the transmission and distribution of electricity costs more in Northern Ireland than in the rest of the UK. These problems are exacerbated by the age and hence relatively poor efficiencies of the NI generating sets, as well as the small size of the system and the resultant lack of economies of scale.

Separate Accounts for Separate Businesses

Licence holders are required to submit regulated accounts which detail separately the different regulated businesses in which they are involved. The results for 1997/98 and 1998/99 are shown below:

Regulatory Accounts for NIE and the Generators

(Extracted from published Regulatory Accounts and accounted for on a CCA basis. Amounts in millions.)

	1997/98		1998/99	
NIE's separate businesses	Turnover	P.B.I.T.	Turnover	P.B.I.T.
Power Procurement	315.2	3.4	312.6	4.2
Transmission & Distribution	150.7	45.6	161.0	42.7
Supply	480.8	8.1	489.0	9.6
Interconnector	1.5	0.4	0.5	6.8
Generation	0.1	0.0	0.1	0.1
Landbank	0.1	0.0	0.1	0.0



Generators

(Extracted from published accounts, amounts in millions)

	1998		1999	
	Turnover	P.B.I.T.	Turnover	P.B.I.T.
Premier Power Limited	157.277	18.088	162.740	15.752
Belfast West Power Limited	20.881	4.998	17.628	3.140
Kilroot Power Limited	96.691	28.493	91.260	29.382
Coolkeeragh Power Limited	22.245	6.660	25.104	2.857
Total Generation	297.094	58.239	296.732	51.131

Statements of System Capacity and Future Capacity Requirements

NIE is obliged under licence to produce annual statements which outline its forecasts for electricity demand and generation capacity on the system for the following seven years. In the March 1999 statement NIE forecast growth in electricity sales of approximately 2.0% per annum over the period to 2004/5.

The statement compares projected levels of future demand against available generation capacity under assumptions of high and low generation plant availability. Assuming that the interconnector with Scottish Power is commissioned in

summer 2000, plant from NFFO II is included, and using earliest contract cancellation dates, NIE predict, that under low plant availability projections there will be a capacity shortfall from 1999 onwards. On the basis of high plant availability assumptions there will be a capacity shortfall from 2001– 2002 onwards.

These projections do not take account of any capacity attributable to the Louth – Tandragee interconnector with the ESB, and this capacity would only be included were the interconnector to be considered secure in the longer term.



Consumer affairs

Disruption to Electricity Supply

New Year

Electricity consumers will remember December 1998 for the widespread disruption to electricity supply attributed to what is commonly referred to as the “Boxing Day storm”, when severe gale force winds (Storm Force 10) buffeted Northern Ireland. Consumers entered 1999 recovering from the power-cuts caused by this weather phenomenon which created a public awareness of the inadequacies of NIE’s communication handling system as evidenced by the number of frustrated customers who contacted OFREG during the early part of January 1999.



As a result of the storm and its effect on the electricity supply network a comprehensive report, highlighting a series of necessary improvement measures, particularly in the communications field, was produced by NIE in 1999. A communications programme for Winter/Spring 1999–2000 was implemented subsequently and included a high profile TV, press and radio advertising campaign during October. Eleven new Customer Service Centre Managers were actively promoted in the local media as the new, local face of NIE and a new Incident Centre, responsible for tracking the use of resources during an emergency, was opened at Craigavon. In parallel, NIE issued a special customer information pack to each of its 683,000 customers which included details of the company's six Charter Pledges and information on the new overall and guaranteed standards which came into effect on 1 October 1999. All of these initiatives were welcomed by OFREG.

Standards of Performance

The promotion of good customer service is a major objective of the DGES. Standards of Performance, which first came into force on 1st January 1994 are an important element in the regulatory framework and aim to ensure that NIE maintains a high level of service for electricity consumers in key service areas.

There are two type of Standards:

- Guaranteed Standards (GS) set service levels which must be met in each individual case. If the Company fails to provide the level of service required, it must make a payment to the customer affected.
- Overall Standards (OS) cover areas of service where it is not appropriate to give individual guarantees, but where customers in general have a right to expect from the Company predetermined minimum levels of service.

OFREG produces an annual Report on NIE's Customer Services Standards which reflects how the company performed in the context of:

- (i) Guaranteed and Overall Standards;
- (ii) exemptions from making payments;
- (iii) complaints from consumers; and
- (iv) disconnections for non-payment.

The Report for the period ended 31 March 1999 showed that NIE made 26 Guaranteed Standard payments.

From 1 October 1999 the DGES introduced revised Standards of Performance for NIE. These have increased the levels of service and payments required under the Guaranteed Standards and have raised a number of the targets set in the Overall Standards.

Although many customers were off supply at the beginning of 1999 due to the Boxing Day storm, NIE was able to claim exemptions from making payments. However, to its credit, NIE made compensation payments which were more generous than the Company would have been required to pay by the strict application of the Guaranteed Standards.

Guaranteed Standards

The new Guaranteed Standards cover 11 service areas (previously 10) and have been set to guarantee a level of service which it is reasonable to expect the Company to deliver in all cases. A new Standard "Dealing with a problem with your pre-payment meter" has been added to protect the interests of Power Card meter customers. A customer who fails to receive the required level of service is entitled to a payment.

Details of the Standards are described in Table X below.

Table X – Revised Guaranteed Standards of Performance

Service	Performance level	Penalty payment
1 Replacement of NIE main fuse after failure	Within 4 hours (3 hours during a working day)	£25
2 Restoring supply after distribution faults	Within 24 hours of supplier becoming aware of fault	£50 Domestic customers £125 non-domestic customers plus £25 for each additional 12 hours
3 Providing supply and a meter	Within 2 working days (domestic customers) or within 4 working days (non-domestic customers)	£25 Plus, £50 (domestic) or £125 (non-domestic) for failure to keep appointment
4 Estimate of connection charges	Within 7 working days for connections to existing lines and 15 working days for others	£50
5 Notice of planned supply interruption	3 days	£25 domestic customers £50 non-domestic customers
6 Investigation of voltage complaints	Within 7 working days	£25 plus, £25 for failure to keep appointment
7 Investigation of meter accuracy disputes	Within 7 working days	£25 plus, £25 for failure to keep appointment
8 Responding to queries on charges or payments	Within 5 working days	£25
9 Appointments to be offered and kept	Between 8.30am-1.00pm or 12.00-5.00pm, Mon-Fri	£25
10 Making of payments owed under the standards	Within 10 working days	£25
11 Dealing with a problem with your pre-payment meter	3 hours during a working day 4 hours during any other day	£25



Overall Standards

The Overall Standards set minimum levels of performance which NIE is required to achieve over a 12 month period in specific service areas. A description of these new improved Overall Standards is given in Table Y.

The new improved Standards set more challenging targets for the Company and aim to further improve customer care.

Although there is no obligation to make a payment to the customer if NIE fails to meet an Overall Standard, the Company has a duty to conduct its business in such a way

as can reasonably be expected to lead to achieving the Standards. It should be noted that the Overall Standard "Recalibration of pre-payment meters" has now been discontinued but a new Guaranteed Standard "Dealing with a problem with your pre-payment meter" has been introduced.

In the interests of public accountability the DGES has directed the Company to provide information on its performance under the Overall Standards. This serves to provide further pressure on the Company to achieve the required level of performance.

Codes of Practice

NIE has an important obligation to its customers in terms of standards of service and these are set out in Codes of Practice which are approved by the DGES. The Codes specify in clear and simple language the services which customers can expect from the Company and provide reassurance that it will act responsibly.

Revised Codes of Practice were approved in 1998. The seven codes describe the services NIE provides and inform customers of their rights and safeguards. The codes, which are produced in braille, large print, audio tape and in several languages are:

- using electricity efficiently in your home
- using electricity efficiently in your business
- services for the elderly and people with disabilities
- paying for your electricity
- using your powercard meter
- making a complaint
- dealing with tariff customers in default (not provided to the general public but available to Advice Agencies)

Table Y – Overall Standards of Performance

Service	Performance level
1 Restoration of supply following system faults	87% in 3 hours 100% in 24 hours
2 Correction of voltage problems	100% in 6 months
3 Provision of new low voltage supplies	100% in 30 working days (domestic) 100% in 40 working days (non-domestic)
4 Reconnection of customers disconnected for non-payment	100% the working day after arrears are paid
5 Relocation of ordinary meters	100% in 15 working days
6 Change of meter due to change of tariff	100% within 10 working days
7 Meter Reading	99.5% at least once a year
8 Responding to customer letters	100% in 10 working days



Customer Complaints

OFREG deals with complaints from electricity customers dissatisfied with NIE's service. Customers must initially contact NIE but if the company is unable to resolve the matter to their satisfaction, the customer may then take the complaint to OFREG.

In the reporting period 1 January 1999 to 31 December 1999 OFREG dealt with 211 complaint cases. Complaints covered a range of issues but most prominent were those about quality of supply, communications, unplanned interruptions to supply and complaints about payment facilities. The number of complaints received by OFREG in the reporting period showed a welcome reduction from 251 in the previous year.

OFREG is committed to ensuring consumers are aware of its support role in dealing with problems which have not been resolved satisfactorily by NIE and as a consequence during the year embarked on an extensive PR campaign which included newspaper advertisements, attending shows such as the Royal Ulster Agriculture Show, regional agricultural shows and the Ideal Home Exhibition and talks to local councils, political parties, community groups etc.

Domestic Disconnections

OFREG has continued to monitor the number of domestic customers disconnected for non-payment of electricity charges. Disconnections have been eradicated during the reporting period, mainly due to the installation of pre-payment meters. This means that customers disconnect themselves only if they fail to purchase the necessary pre-payment meter cards, instead of being disconnected by NIE.

Combined Heat and Power

Combined Heat and Power (CHP) is the simultaneous generation of heat and power. Every time electricity is generated heat is produced. Conventional generation dissipates this heat. Combined Heat and Power systems

however use this heat, putting it to good use in industry, leisure centres, hotels and many other places – delivering real benefits to consumers, the economy and the environment.

In 1998 OFREG, in conjunction with ETSU, developed and implemented a database of CHP installations in Northern Ireland. The database is maintained and updated by the Industrial Research and Technology Unit (IRTU) as new installations come on stream. Information from the database is freely available to all those interested in CHP and supplies information on individual schemes, engine and fuel type and electrical and heat power produced, the contact is Dan Sinton, IRTU, phone 028 9262 3038.

Energy Efficiency Programme

The DGES approved an energy efficiency programme, which began in 1997, to provide the resource to initiate and complete a wide range of projects which would provide real savings in energy for electricity customers. The initiative initially permitted NIE to collect £1 per annum from every electricity customer. So successful has been the programme that the DGES approved NIE to increase the contribution in April 1999 from £1 to £1.50 for every electricity customer. A substantial proportion of the money collected in 1999, almost £1m, was spent on schemes to help the fuel poor (those households where more than 10% of the household income is spent on energy) through home insulation, the provision of low energy lightbulbs, high efficiency appliances and heating controls.

This energy efficiency scheme has to date saved £8m for 50,000 customers over the lifetime of the measures installed and has been responsible for energy savings of around 132m kilowatt hours and a reduction in emissions of over 34,000 tonnes of CO₂.

Renewable Energy

Renewable electricity is an important means of reducing the emission into the atmosphere of greenhouse gases. The increased use of renewables is supported by policy targets set by the European Union and the British



Government. These targets have not been disaggregated to the Northern Ireland level and the only existing official target for Northern Ireland is to secure 45MW of installed renewable capacity by 2005. At 31 December 1999 Northern Ireland has about 34 schemes delivering in excess of 16 MW. In 1999 the DGES, in conjunction with DED, and as a boost to the renewable energy industry, facilitated a change to the legislation to permit renewable generators to sell and export across NIE's wires, electricity generated by them.

Millennium Bug

OFREG staff worked very closely throughout 1999 with the electricity and gas industries to ensure y2k compliance at the millennium. Staff were also on duty on millennium eve to monitor electricity and gas supply and to react to any disruption.

Metering

Articles 34 and 64 of, and Schedule 7 to, the Electricity (Northern Ireland) Order 1992 contain provisions for appointing Meter Examiners and making Regulations and Directions to govern metering operations in Northern Ireland. Most of these provisions were not brought into operation at the time of privatisation, mainly because GB Metering Regulations were being amended and brought into line with European requirements. Our own draft

Regulations shadowed the progress of the GB Regulations and the necessary "Commencement" Order was eventually made by the Department of Economic Development on 14 December 1998, enabling two sets of Regulations to be made and come into operation on 1 February 1999. Meter Inspectors were appointed to act as the DGES's Meter Examiners from that same date.

The two sets of regulations made were the "Meters (Approval of Pattern or Construction and Manner of Installation) Regulations (Northern Ireland) 1998" and the "Meters (Certification) Regulations (Northern Ireland) 1998". The former deals with arrangements for approving the design etc. of meters and specifying the period of time during which approval endures. The latter covers arrangements for certifying individual meters. The certificate enables an individual meter to be traced to its point of manufacture or repair and should guarantee that it will perform within specified limits of accuracy (plus 2.5% to minus 3.5%) for a specified length of time. These regulations bring the metering regime in Northern Ireland into line with that in the rest of the UK. However, additionally, NIE has the requirement, under Schedule 13 of the 1992 Order, to ensure that all its meters are certified within 10 years of 1 February 1999.

The Senior Meter Examiner has furnished his first report to the DGES (for the period 1 February to 31 December 1999). This shows that 12625 meters were submitted for certification, of which 4031 were certified by the DGES's Examiner, 7021 by an Examiner from NIE who had been "authorised" by the DGES's Examiner and 1575 had been rejected. The Examiner reported that there were 442,000 meters on circuit which had already gone through a process (under his supervision) which allowed them to be considered certified and some 359,000 which should be replaced by certified meters before the year 2010. It is anticipated that 110,000 of these replacements will be pre-payment meters of a more advanced type than those currently in use. NIE's programme is to change some 50,000 meters per year.



To: The Department of Economic Development

I enclose my report for the year ended 31 December 1999 as required by Article 32 of the Gas (Northern Ireland) Order 1996.

I confirm that during the period of this report:

- i) I made no references to the Monopolies and Mergers Commission;
- ii) I made no final or provisional orders; and
- iii) I received no general directions under Article 27(2) of the Order.

D B McIlldoon
Director General
of Gas for Northern Ireland



The Natural Gas Industry in Northern Ireland

Statement from the Director General of Gas for Northern Ireland

My functions as Director General of Gas for Northern Ireland are laid out in the Gas (Northern Ireland) Order 1996, (the "Order"). These include monitoring, enforcing and where appropriate modifying all licences for the conveyance, storage and supply of gas. The Order requires me to exercise these functions in the manner best calculated to promote the development and maintenance of an economic, efficient and co-ordinated gas industry in Northern Ireland and to ensure that holders of gas licences are able to finance the carrying on of their licensed activities.





Given this statutory duty I am particularly pleased that Phoenix Natural Gas Ltd ("Phoenix") who are developing the natural gas industry in Greater Belfast made significant progress in furthering this objective in 1999. During 1999 Phoenix saw their customer numbers double and by the year end approximately 12,750 properties were taking natural gas. Of these properties the vast majority are domestic customers. It is particularly gratifying that almost 50% of Phoenix's domestic customers are NIHE tenants as this indicates that some of the most vulnerable and disadvantaged members of society are having the opportunity to enjoy the benefits of natural gas.

In another welcome development Phoenix announced during the year plans to accelerate the development programme for the installation of their network. Phoenix now envisages being able to connect up to 250,000 properties by the end of 2003, some five years ahead of the initial commitment given in the development plan included in their licence. Accordingly consumers in many parts of Belfast will have the opportunity to connect to gas at a much earlier time than was originally thought possible. By the end of 1999, there are 92,320 customers able to connect up to natural gas.

Phoenix's commitment to securing customers and indeed their ongoing commitment to their current customers was further demonstrated by their decision to keep their 1999 tariffs unchanged from those first announced in March 1997. This decision has enabled customers to enjoy not only stable prices but also a 7.7% drop in real gas prices. This stability in gas prices contrast starkly with the extreme volatility associated with oil prices in the recent past.

The price of gas charged by Phoenix is made up of several components, the main component of which is the charge for conveying the gas through Phoenix's infrastructure of transmission and distribution pipes. The act of conveying gas is a natural monopoly activity in that it would not make economic sense for the infrastructure used to be duplicated. As a result Phoenix's Conveyance Business which owns the network of pipes through which the gas is conveyed enjoys

a significant degree of monopoly power. To ensure that this monopoly power is not abused the revenue that this Business can earn from this activity is subject to a cap which I agreed with it during 1999. This agreement should reassure customers as it means that a significant element, and in the case of domestic customers the majority, of the final price of gas, is subject to regulatory control.

For some of Phoenix's largest industrial customers in Greater Belfast there is also comfort to be gained from the fact that 2000 will see the end of Phoenix's exclusive right to supply gas to them. Such supply competition should produce benefits for consumers by providing them with access to a wider range of gas suppliers and potentially better services. Given these benefits and in preparation for market opening I have issued a gas supply licence to Elf Power and Energy ("Elf"). Elf is a major international player in the gas industry and investment by it in Northern Ireland is a strong sign of the potential of the gas industry here. I am hopeful that more suppliers will enter the Greater Belfast market in the near future and I intend to do whatever I can to facilitate this. Indeed the Order places an explicit requirement on me to facilitate competition in gas conveyance and supply. In a further effort to facilitate the development of supply competition I have been in discussions with Phoenix throughout 1999 on the drafting of a Network Code which will set out rules governing access to the Phoenix network. When implemented this Code will put in place a regime that ensures that all suppliers are fairly and transparently treated when using Phoenix's conveyance network.

All of the above-mentioned developments are extremely important as they will help to secure a rapid expansion of the as yet fledgling gas industry in Phoenix's licensed area of Greater Belfast. Natural Gas has many benefits. This is of vital importance as such expansion should enable greater numbers of consumers to switch to gas thereby making a significant contribution to the eradication of fuel poverty, high fuel bills and dirty environments. Given these benefits I am also keen to see the extension of the gas network to those areas of Northern Ireland outside Phoenix's licensed area. I therefore warmly welcomed a request I received in

January 1999 from Adam Ingram, the then Economy Minister, to issue an invitation to interested private sector companies to apply for licences to extend the gas network to other areas of Northern Ireland. In response to my invitation applications were received from four consortia bringing together nine companies, all with proven records in gas and electricity markets. These applications represented three potential developments to the North West and three to the South/East, linking up with the Republic of Ireland's gas market. I was impressed by such a high level of interest and confidence in the Northern Ireland gas market. At the end of the year I was engaged in discussions with all four consortia on the details of their submissions. Following these talks I will, in 2000, submit a report on the applications to the Department of Enterprise, Trade and Investment which will outline the way forward.

Although the applications I am considering look promising I am acutely concerned that any expansion of the gas industry outside Greater Belfast is threatened by the Government's plans to impose a Climate Change Levy on energy use, including natural gas. Whilst I am supportive of the Government's stated objective in imposing this levy which is to encourage energy efficiency I believe that imposing a levy on natural gas consumption in Northern Ireland will impede the development of the industry and could make natural gas prices uncompetitive compared to oil prices which will escape the levy. This would have the perverse effect of encouraging consumption of more polluting fuel. Consequently I have been making representations to the Government to exempt the natural gas industry in Northern Ireland from this Levy. The Chancellor will announce his decision on this matter in his March 2000 budget.

Development and Regulation of Northern Ireland's Natural Gas Industry

1999 represents only the third full year in the life of Northern Ireland's natural gas industry. During this year there have been strong signs that the industry is becoming more established and that consumers are gaining confidence in the natural gas product. This chapter starts off with a short summary of the background, then describes the regulatory framework operating in Northern Ireland before discussing the main developments that occurred in 1999.

Background

The privatisation of Northern Ireland's electricity supply industry in the early nineties provided the catalyst for the development of a natural gas industry. At that time the Department of Enterprise, Trade and Investment (DETI) made the sale of Ballylumford Power Station, Northern Ireland's largest station, to British Gas conditional



upon its conversion from oil to gas firing. To fulfil this condition Premier Transco, at that time a wholly owned subsidiary of British Gas, built a pipeline linking Northern Ireland to Scotland. This development was facilitated by the construction in 1993 by Bord Gáis Éireann of a pipeline linking the Republic of Ireland's natural gas transmission grid to that of the United Kingdom. The Bord Gáis pipeline stretches from Moffat in Scotland to Brighthouse Bay near Dublin. Subsequently Premier Transco decided to link the Northern Ireland pipeline into the Bord Gáis pipeline at Twynholm in South West Scotland. The construction of Premier Transco's 135km transmission pipeline was completed in August 1996.

The construction of the Scotland to Northern Ireland pipeline (SNIP) also provided the opportunity to develop a downstream natural gas market. The Greater Belfast area was selected for the location of this market and in September 1996 Phoenix, another wholly owned subsidiary of British Gas, was awarded a licence for the conveyance and supply of natural gas in this area. Northern Ireland did have a town gas system that was established during the early 19th century. However this system proved to be highly dependent upon public subsidies and was subsequently closed. In Belfast the final customer was disconnected in 1988. Fortunately the town gas system provided a distribution infrastructure and a customer base with past experience of town gas which expedited the development of the downstream market.

The downstream market needed to be linked up to the SNIP and this was achieved by the construction of a high pressure transmission pipeline from the Pressure Reduction Station at Ballylumford Power Station to Tollymore, just south of Carrickfergus on the outskirts of Belfast where the old town gas distribution network starts. This 26km pipeline was completed towards the end of 1996. The development of the distribution network in the Greater Belfast area was facilitated by the sale to Phoenix by Belfast City Council of the old cast iron distribution pipes from the town gas era in Greater Belfast. Phoenix has undertaken a renewal programme that involves, where feasible, running lengths of 14-inch diameter polyethylene pipes through the old cast

iron pipes. However in many areas the pattern of present development bears little or no relation to the old network and the wholesale laying of pipes is required.

In 1998, KeySpan bought a stake in both Premier Transco and Phoenix. KeySpan is the second largest natural gas distribution utility in the USA and delivers gas to 2.4 million customers in the New York and Boston areas. It currently owns 24.5% in Phoenix and 50% in Premier Transco.

Regulation

The Gas (Northern Ireland) Order, enacted on 10 June 1996, contains the primary legislation governing the natural gas industry here. It provides for the appointment of the Director General for Gas in Northern Ireland (DGG) who is responsible for issuing licences (subject to the consent of DETI), and for monitoring, enforcing and where appropriate, modifying these licences. The DGG is required to exercise these functions in a manner best calculated to:

- Promote the development and maintenance of an efficient, economic and co-ordinated gas industry in Northern Ireland.
- Secure that licence holders are able to finance the carrying out of their licensed activities.

Subject to these primary duties, the DGG is required to:

- Protect the interests of consumers of gas supplied by licensees.
- Protect the interests of licence holders in respect of the prices at, and the other terms on, which any services are supplied by one licence holder to another.
- Promote the efficient use of gas supplied to consumers.
- Protect the public against the dangers arising from the conveyance, storage, supply or use of gas.
- Facilitate competition between persons whose activities consist of or include conveying, storage or supply of gas.
- Take into account in exercising these functions the effect on the environment.



The position of Director General of Gas for Northern Ireland is currently held by Mr Douglas McIlldoon, who is also the Director General of Electricity Supply for Northern Ireland. This reflects the synergy between electricity and gas in Northern Ireland, stemming from the use of natural gas in electricity generation. The use of natural gas at Ballylumford Power Station leaves the gas and electricity industries interdependent and raises important issues in both industries, particularly in relation to maintaining the security of supply throughout the respective systems and through to customers.

Prior to the appointment of the DGG, there were three licences granted by DETI to British Gas Trading, Premier Transco and Phoenix Natural Gas. These licences provided the foundation for the structure and development of Northern Ireland natural gas industry.

The British Gas Trading licence authorises them to supply gas up to and within the boundaries of Ballylumford Power Station. Since 1996, Premier Power (owners of Ballylumford Power Station), Amoco and NIE have received similar supply licences. Under its licence, Premier Transco is authorised to convey gas from the low water mark at Castle Robin Bay to the Pressure Reduction Station at Ballylumford.

At the initiation of Northern Ireland's natural gas industry Phoenix was granted a Combined Conveyance and Supply Licence. This licence permits Phoenix to convey gas within its licensed area (essentially the Greater Belfast and Larne areas) and from other areas of Northern Ireland to the licensed area. Phoenix is also licensed to supply gas to premises in its licensed area. Under the terms of these licences Phoenix was granted various time-limited exclusive rights. More specifically under its conveyance licence Phoenix has exclusive rights to convey gas in its licensed area for a period of twenty years. Under its supply licence Phoenix has exclusive rights to supply gas to customers consuming more than 75,000 therms per annum for three years on a district by district basis with supply exclusivity rights for all customers expiring on the 31st December 2004. Where gas consumers consuming more than 75,000 therms are supplied before the relevant district development start date, as set out in Phoenix's licence, it has been agreed with Phoenix that in such cases exclusive supply rights will last for three years on a customer by customer basis.

This regulatory framework reflects the requirements of an emerging market and the need to provide incentives for companies to develop the necessary infrastructure. The regulatory regime also ensures that the charges levied by Phoenix and Premier Transco for the conveyance of gas through their respective networks are fair, equitable and transparent.

1999 Developments concerning Premier Transco

(a) Exit Charges for the Conveyance of Gas

Condition 2.1 of Premier Transco's (Premier's) licence requires it to calculate exit charges to gas suppliers for conveying gas through the entire network from Moffat in Scotland to the pressure reduction station at Ballylumford. These charges must be calculated according to detailed formulae laid down in Condition 2.1 of Premier's licence. They are designed to ensure recovery of the initial capital expenditure for the pipeline and a rate of return on it and the ongoing operating expenditure associated with the pipeline. During 1999 there were two modifications to the formulae in order to improve the incentives faced by suppliers using the pipeline.

In the original methodology a supplier who only shipped gas across the Scotland to Northern Ireland pipeline (SNIP) for one year, would not pay his share of unpredictable operating costs associated with the pipeline during that year. This is because unpredictable operating costs are divided amongst suppliers based on their throughput in the previous year. Therefore in the year following shipment a supplier who had been in the market for one year only would have a proportion of unpredictable operating costs allocated to it but there would be no contractual relationship between PTL and the shipper for recovery of that amount. This anomaly was removed by modifying the formula so that shipper pays a fraction of the total monthly unpredictable operating costs in proportion to that month's throughput. An annual reconciliation mechanism was also introduced to counter any discrepancy between monthly throughput and annual throughput.

The formula in the licence was further modified to ensure that in future conveyance charges are based upon both volume flows and capacity bookings. In the original formula conveyance charges were based purely on volumes throughput. The DGG recognised that charging on such a pro rata volume basis provided no incentive for suppliers

to book capacity on the SNIP efficiently. Capacity rights in a monopoly infrastructure have value which the charging structure must reflect. This is particularly important in the case of SNIP as capacity limitations are likely to arise until dedicated compressions facilities are in operation on the system's entry point at Moffat in Scotland (due in Oct 2000). It was envisaged that the new charging methodology should be based on a 50/50 split between peak day capacity booked and volume transported. However an immediate shift to this half volume/half capacity system would lead to a large jump in charges paid by downstream gas suppliers (since they have to book capacity for the day of greatest demand) and it was decided, following consultation, that the move to a 50/50 split should be phased in over a 10 year period, starting with a 90% volume/ 10% capacity split for the first five years. This licence modification was in place for the formula year starting October 1999.

(b) Network Code

Under condition 2.3 of its licence, Premier Transco is obliged to submit a Network Code relating to the conveyance of gas from the low water mark at Castle Robin Bay to the pressure reduction station at Ballylumford Power Station. The purpose of such a Code is to set out the terms of the arrangements under which Premier will enter into



agreements with gas suppliers for the conveyance of gas through its Network. The underlying principle is that the terms of the Network Code should facilitate the efficient and economic operation of Premier Transco's Network and ensure that there is effective competition between gas suppliers using the Network. The implementation of such a Code should facilitate the efficient and economic operation of the Network by providing the right economic incentives to suppliers. This can be achieved by making suppliers financially responsible for balancing their own gas inputs and outputs on a daily basis. The Code should facilitate effective competition between suppliers by providing for equal access to the Network and by ensuring that all suppliers face the same financial and transportation rules.

During 1999 considerable progress was made between Premier Transco and Ofreg on agreeing the actual content of the Network Code. Premier Transco has also held consultations with the suppliers on the proposed content in the Code. The Code is on target to be agreed by Summer 2000 and therefore should be in place for the gas year starting October 2000.

(c) Upgrade of Compressor facilities at Moffat.

When the initial forecasts for gas consumption in Northern Ireland were made, it became apparent that extra compression would be required to increase the capacity of the pipeline. During 1996 and 1997, Bord Gáis Éireann and Premier Transco appointed consultants PLE and Ove Arup to study the problem. This confirmed Moffat as the appropriate location and work was initiated in 1998. It has been projected that the compressor will first become commercially available by the start of winter 2000.

During 1999, work on the compressor continued and the project remains on track to be completed by October 2000. Installation of the Moffat Compressor will significantly increase available capacity on the SNIP since it will provide higher pressure at Moffat and Ballylumford and hence increasing the potential flow through the pipeline. Although capacity on the SNIP is dependent on the size of flows to the Republic.

1999 Developments concerning Phoenix Natural Gas

(a) Announcement of an acceleration in Phoenix's Development Plan

The granting of monopoly rights to Phoenix in both conveyance and supply of natural gas in its licensed area was deemed necessary as it was felt that there was a need to cushion Phoenix from competition for an initial period in order for them to stimulate the development of gas markets and infrastructure. However given that Phoenix has been accorded these special protective rights as an incentive to establish a gas industry it is only reasonable that it should continually be required to demonstrate its commitment to establishing and expanding the pipeline network in a manner that does not frustrate the later development of a fully competitive gas industry. Thus Phoenix is required under its licence to develop its distribution network in accordance with an agreed timetable and development plan. This plan stipulates that Phoenix will introduce natural gas on a phased basis to 12 districts within its licensed area. It sets out both the years in which Phoenix will be required to develop each district and the cumulative targets for the number of properties enabled to be supplied with natural gas in each district.

In 1999, Phoenix announced plans to accelerate their development programme. They now envisage passing 250,000 properties by the end of 2003, some five years ahead of the initial commitment contained in the original development plan.

(b) Publication of 1998 Annual Development Plan Report

Phoenix is furthermore required under Condition 1.2.2 of its combined licence for the conveyance and supply of gas to submit to the DGG an annual Development Plan Report by the beginning of March each year. This report details Phoenix's progress in developing its network and in supplying gas in the licensed area for the immediately preceding year and sets out Phoenix's planned development of the network and its gas supply marketing plans for the next three years.

District	Original Dates	Revised Dates	No. of Properties
North and West Belfast	1997-2001	Unchanged	64472
Duncrue	1997	Unchanged	1306
South Belfast	1998-2001	Unchanged	23283
Newtonabbey	1998-2001	Unchanged	12991
Carrickfergus	1999-2003	1997-2003	9510
Harbour	2001	1998-2001	524
Lisburn	2002-2004	1998-2003	17261
East Belfast	2002-2005	1998-2002	35683
North Down	2003-2007	1999-2003	28665
Carryduff/Castlereagh	2005-2008	1998-2003	22903
Newtownards	2006-2008	2000-2003	12991
Larne	N/a	1998-2003	6106
Total			249264

During 1999, Phoenix published their Annual Development Plan for 1998. This report indicated that Phoenix had achieved its development plan targets for 1998. Although a full copy of this report can be obtained from Phoenix Natural Gas Ltd, 19 Clarendon Rd, Clarendon Dock, Belfast, BT1 3BG some extracts from it have been reproduced below.

Transmission

On 22 April 1997 Phoenix applied for the consent of the DGG, under Article 35 of the Order, to construct a 8km gas pipeline across Belfast Lough to reinforce supply to Central Belfast and to enable gas to be brought to East Belfast. 1998

saw the completion of this second phase of the transmission pipeline. The pipeline provides reinforcement to the centre of Belfast and makes available the necessary capacity to develop the network in the southern and eastern sections of Phoenix's licensed area.

In addition to this essential network extension a second submarine pipeline, with a diameter of 200mm, was also constructed across Larne Lough to provide natural gas to Larne. Gas became available through this pipeline from early 1999. With these two additional phases completed the total transmission system for the Phoenix's Licensed Area is now in place.

Number of Connections agreed during 1998:

Annual Load (therms pa)	<2,500	2,500–75,000	>75,000
Domestic	6546	—	—
Non Domestic	432	553	21

Distribution Pipe-line Installed in 1998

District	Operational	Non-Operational at 31/12/99
Carrickfergus	7,186m	0m
Newtownabbey	4,828m	0m
North & West Belfast	124,147m	9,870m
East Belfast	57,730m	9,405m
South Belfast	96,614m	414m
Lisburn	3,605m	0m
Larne	5,332m	2,656m
Carryduff and Castlereagh	11,960m	0m
TOTAL	311,402m	22,345m

Distribution

The contract for initial construction of the distribution infrastructure was awarded to McNicholas Construction Services Limited in December 1995. Phoenix planned to build an entirely plastic polyethylene gas distribution system and have entered into arrangements for the purchase of the existing Belfast, Bangor and Newtownards town gas systems to facilitate this objective. Sleeving these systems with plastic pipes means that “open-cut” work and hence disruption to pedestrians and traffic will be minimised.

During 1998 there was a total length of 333km of distribution pipeline installed. This means that by the end of 1998, the total number of premises passed by Phoenix’s network was 42,700 and the total number of connections was 5,882. This represents an approximately 100% increase in Phoenix’s customer base during 1998. The table above contains more details on the distribution pipeline installed during 1998.

(c) Conclusion of the Conveyance Price Control.

As outlined above Phoenix owns an expanding gas transmission and distribution network. As the natural gas supply industry in Northern Ireland will depend on this network for the conveyance of gas, Phoenix is potentially, in a position of considerable commercial power; not only over the conveyance of gas, but also over the terms of its

sale to end-users, including its price. It is therefore appropriate that in Phoenix’s conveyance licence the DGG was given responsibility for ensuring that the charges levied by Phoenix for the conveyance of gas through its network are fair, equitable and transparent.

In Phoenix’s licence it is stipulated that these charges will be set according to the methodology laid down in Condition 2.3 of the licence. This methodology which is a variant of the RPI-X system used throughout regulated industries in the UK. It involves Phoenix and the DGG agreeing at the outset capital expenditure, conveyance volume and operating cost forecasts for a twenty year period. Based on these forecast parameters, the DGG sets a maximum allowed average conveyance revenue per therm that will recover a real pre-tax cash flow rate of return on the investment of 8.5%.

During 1998 the DDG appointed consultants to undertake a study of the forecasts submitted to him by Phoenix of its capital and operating expenditure, and conveyance volumes, to be used in setting the first price control for Phoenix’s conveyance business. Pannell Kerr Foster were appointed to review the efficiency of Phoenix’s Operating Expenditure forecasts, while WS Atkins were appointed to review Phoenix’s Capital Expenditure Programme.

Conveyance Charges for Phoenix network for 2000:

Customer sector	Commodity Charge (per therm)	Capacity Charge	Customer Charge
Firm (75000+ therms)	17.69	0	0
Interruptible (75000+therms)	9.16	0	0

During 1999 the two consultants produced a report on Phoenix’s capital and operating expenditure projections. This led to agreement between Ofreg and Phoenix on the forecast parameters and the subsequently setting of a maximum allowed average conveyance per therm. The parameters are set to be revised on 1/1/2002 unless Phoenix and the DGG agree that there is no need for such a reforecast.

(d) Publication of the Conveyance Charge Statement

The agreement between Phoenix and the DGG on a maximum average conveyance revenue per therm enabled Phoenix to publish their conveyance charge statement. This document sets out Phoenix charges for the conveyance of gas through their network and refers to the other terms for use of their network. The publication is a requirement under Condition 2.3.2 of Phoenix’s combined Licences for the conveyance and supply of gas. The table on Conveyance Charges for Phoenix network for 2000 above sets out the charges that will apply from 1st January 2000 to 31st December 2000 above. A full copy of this statement can be obtained from Phoenix Natural Gas Ltd, 19 Clarendon Rd, Clarendon Dock, Belfast, BT1 3BG

(e) Phoenix Natural Gas Tariffs

During 1999 Phoenix did not alter its tariffs to its gas consumers from those first announced on 10 March 1997. On that date Phoenix, outlined its tariffs for commercial,

small industrial and domestic customers. The tariff to commercial and small industrial customers comprises a standing charge of £120.45 per annum and a commodity charge of 1.23p per kWh (36p per therm). Standard credit domestic customers face an annual standing charge of £80.30 and a commodity rate of 1.3p per kWh (38p per therm). Tariffs were not announced for large industrial and commercial consumers using over 732,000 kWh (25,000 therms) per annum as individual contracts will be negotiated with these customers.

(f) Energy Efficiency Schemes.

The completion of the Price Control led to a determination of a revenue stream for Phoenix’s conveyance business, under which Phoenix was given an operating expenditure allowance for energy efficiency schemes. This stems from the duty under the Gas Order on the DGG to promote the efficient use of gas supplied to consumers. During 1999,



Phoenix has taken an active role in cultivating schemes that encourage a more efficient use of energy. The Condensing Boiler Scheme and the Beechmount and Willowfield Scheme are two examples.

The Condensing boiler scheme aims to encourage the owner-occupier to change from a poorly controlled heating system to a fully pumped, fully controlled condensing boiler system. With grant support from the Energy Saving Trust, bulk purchase discount on the boilers, and discounted installer labour, the changeover cost is only £999. This scheme ran during the second half of 1999 and will finish in the first half of 2000. Phoenix estimates that this scheme will create an annual saving of 6 million kWh.

The Department of the Environment, through Bryson House, is encouraging a more efficient use of energy in the Beechmount and Willowfield areas of Belfast; areas which are typically inhabited by the fuel poor. Phoenix is involved in the scheme through the installation of natural gas condensing boiler central heating systems and predicts that this scheme will lead to an annual saving of 19.6 million kWh.

(g) Network Code

Under condition 2.5 of its Licence, Phoenix is required to submit a Network Code which outlines their proposed arrangements for the conveyance of gas through their network. The Network Code will facilitate the efficient and economic operation of Phoenix's network by providing the right economic incentives to suppliers. It will also secure effective competition between gas suppliers by ensuring that all suppliers are subject to the same financial and transportation rules.

While a Network Code was already in place to govern the conveyance of gas through Phoenix's transmission pipeline further provisions were submitted by Phoenix during 1998. These provisions dealt with Supply Point Metering, Emergencies, Maintenance and Operational Planning and the Code's Modification Rules. The full Network Code was finalised during 1999 and can be obtained from Phoenix Natural Gas Ltd, 19 Clarendon Rd, Clarendon Dock, Belfast, BT1 3BG.

Inviting Applications for Licences to extend the Gas Network outside Greater Belfast.

Ever since natural gas became available in the Greater Belfast area there has been considerable interest in extending the gas network to other towns in Northern Ireland. In December 1997, a consortium consisting of the Department of Enterprise, Trade and Investment, Phoenix Natural Gas, NIE, Powergen and Coolkeeragh Power commissioned Caminus Energy to undertake a feasibility study of a gas transmission pipeline from Belfast to the North West and the development of distribution networks in the main towns along the route of the pipeline. A summary of the conclusions of the Caminus Report is contained in Ofreg's 1998 Annual Report.

On 7 January 1999 the then Economy Minister, Adam Ingram, asked the DGG to issue an invitation to interested private sector companies to apply for licences to extend the gas network to other areas of Northern Ireland. Applications were received from four consortia which brought together nine companies, all with proven records in gas and electricity markets. This high level of interest reflects greater market confidence in the Northern Ireland gas markets.

During 1999, the DGG engaged in detailed discussions with all four consortia representing three potential developers of pipelines to the North/West and three to the South/East to link up with the Republic of Ireland gas market. Following these discussions the DGG plans to submit a detailed report on the applications to the Department of Enterprise, Trade and Investment in early 2000.



3

Future Developments

Future Development of the Natural Gas Industry in Greater Belfast and Larne

Supply Competition emerging in Greater Belfast.

Under its licence, Phoenix was granted time-limited exclusive rights to supply gas to all customers. For customers consuming more than 75,000 therms per annum these exclusive rights last for three years from when gas is first supplied into the district with supply exclusivity rights for all customers expiring in 8 years. Phoenix's three-year exclusivity period for some of Greater Belfast's largest gas consumers will come to an end in 2000. These customers will be able to take their gas from a supplier other than Phoenix.

In anticipation of this market opening, Elf Gas and Power Ltd applied for a supply licence for the Greater Belfast area during 1999 and after were granted a licence in December 1999. It is reckoned that more suppliers will enter the market during 2000. Supply competition should create benefits for consumers through downward pressure on prices, wider choice and bring about efficiency gains.

EU Gas Directive

On June 1998, the European Parliament and the Council adopted a Directive on common rules for the internal market in natural gas. The Directive entered into force on 10 August 1998 and Member States must implement it by 10 August 2000.

The Directive establishes common rules for the natural gas industry and enshrines the principles of non-discrimination and transparency in the operational rules and pricing methodologies. It initiates a process of market liberalisation by setting progressive levels of market opening for certain categories of customer:

Where implementation of this Directive would cause substantial problems in a geographically limited area of a member state, in particular concerning the development of the transmission infrastructure and with a view to encouraging investment, there are provisions within the Directive for member States to apply for a derogation from certain conditions of the Directive.

Such derogations have to be approved by the Commission and are time-limited (a maximum of ten years from when gas is first supplied into that area). Any extensions of the network will probably require exclusivity provisions, similar to those enjoyed by Phoenix Natural Gas in the Greater Belfast area. Therefore derogation from the market openings condition may be needed.

Climate Change Levy

The Climate Change Levy is an energy tax on businesses and aims to encourage energy efficiency and to help meet the UK's legally binding target for reducing greenhouse gas emissions set under the Kyoto Protocol. The plans to introduce this levy were first announced in the March 1999 Budget and will be implemented in April 2001. For gas the rate of the levy is expected to be 4.4 pence per therm.

The Northern Ireland's natural gas industry voiced serious concerns about the potential damaging effect this levy would have on its evolution. As the levy will not apply to oil products (which instead are taxed through excise duties), it could make natural gas uncompetitive against its main rival and have the perverse effect of tilting the prices in favour of the more polluting of the two fuels. Also the climate change levy could decrease market confidence in the industry and make it harder to attract the necessary investment needed to expand the network outside Greater Belfast.



The DGG along with DETI, have been lobbying HM Treasury for Northern Ireland to be granted an exemption from the levy. The Chancellor will make a decision on this in his March 2000 Budget.

Extension of the Natural Gas Network outside Greater Belfast

The picture concerning the gas network extensions, either to the North West or to the South, should become clearer during 2000. As mentioned in Chapter 2, the Director General will submit a report to the DETI on the applications received during 1999 in early 2000.

The Caimus Report concluded that the economic viability of any extension is dependent upon a significant base load of customer(s) to underwrite the cost of the pipeline. This was recognised in the applicants' proposals. In the absence of any energy intensive industries among the proposed routes, a power station is probably necessary. The low population density of the towns along the routes means that distribution alone cannot financially support any extensions.

There is growing confidence that the base loads needed for any North South extension will emerge. Given the Republic's rapidly growing energy needs and their tightening capacity there is a strong possibility that gas fired power stations will be built quite soon. Given this, there is considerable optimism as to the commercial viability of any north-south pipeline. In this case, a market driven decision is preferable and that the roles of the regulators and government should be kept to facilitating the companies' drive to credibly sell their proposals to anchor customers in the Republic.

The charging structure for the gas network is likely to be an issue should the gas infrastructure be extended beyond the Greater Belfast area. If applied the principle of postalisation would ensure that the cost of delivering gas throughout the transmission network to any town or power station will be the same. This principle applies in electricity (and in other services) and if it were not to apply to gas the result would be price divergence across Northern Ireland. This would give towns further away from Belfast higher energy prices making them less competitive.

appendix

The Office for the Regulation of Electricity and Gas

Support for the DGES and the DGG is provided by the Office for the Regulation of Electricity and Gas (OFREG). Mr McIlDoon, whose first term of office expired on 30 November 1998, has now been reappointment for a further 3 years and continues to hold the two distinct offices provided for by the Electricity Order and the Gas Order. Each of the orders has its own set of functions and these must be exercised independently by Mr McIlDoon acting as either DGES or DGG.

OFREG staff maintained on-going dialogue with representatives of the energy industries, consumer groupings, regulatory bodies and local and central government throughout the year. A considerable number of staff attended conferences and training courses involving topics as diverse as Data Protection, with resultant benefits at personal and organisational levels.

Administration

The number of staff in post at the end of 1999 was 25.

Mr Charles Coulthard who served as Deputy Director General of Electricity Supply for Northern Ireland since 1992, and additionally as Deputy Director General of Gas for Northern Ireland since June 1996 was appointed Deputy Director General of OFGEM, based in Glasgow, and left to take up his new appointment on 25 October 1999.

Mr Mike Archer heads OFREG's European Directive economics team supported by his Deputy Economists

Mr James Hutchinson, Miss Maggie McGibbon and Mr Tony Docherty. **Mr Bobby Clulow** heads the electricity economic regulation team which is responsible for price regulation and competition supported by his Deputy Economist **Mr Alan Smith** and his Assistant Economists **Mr Seamus O'Hare** and **Miss Anne Marie Scullion.**

Mrs Mary McWilliams, heads the gas regulation team and is supported by Economists **Mr Shane Murphy** and **Mr Eamon Corrigan.** Economist **Mrs Sarah Brady** was appointed on a short term basis to assist with the appraisal of licence applications. **Mr Leslie Adams** heads the Consumer and Business Affairs Branch and is responsible for the administration of OFREG. OFREG's status as a non-ministerial Government Department means that Civil Service guidelines and procedures are followed in the administration of matters such as finance and personnel. Mr Adams is assisted by **Mr Gerry Donnelly** who manages OFREG's complaint handling section and also has responsibility for a range of energy-related projects including the promotion of Combined Heat and Power and Energy Efficiency. On the office management front Mr Adams is assisted by **Mr Gerry McNeill** whose duties include finance, licensing, IT and premises. **Mrs Anne Mc Minnis** is secretary to the NICCE.

Finance

As a non-ministerial Government Department OFREG's funds are voted by Parliament and accounted for each year through the Appropriation Account. The cost of running OFREG in the financial year ended March 1999 amounted to £2,224,000.00. Expenditure details are outlined in the extract from the 1998-99 Appropriation Account reproduced at the end of this appendix.

Licence Fees

OFREG's costs are recouped primarily from the annual fees paid by electricity and gas licensees.

These fees were reclassified from 1 April 1998 as Appropriations in Aid. To give effect to this re-classification, DED gave the DGES a delegated authority to collect electricity licence fees on its behalf. As gas licence fees are already collected by the DGG no change was required.

Electricity licence fees are calculated on the basis of a determination made by the DGES in respect of his identifiable costs of electricity regulation which stipulates that one third of the total fees due should be charged to the generators, one third to transmission and distribution and one third to those engaged in supply.

The electricity licence fees (collected in advance) in respect of the financial year ended 31 March 2000 totalled, £1,687,000 and in addition included the recovery of, £193,445 for 1998-99 caused by increased spending on consultancy provision.

Gas licence fees amounting to £340,000 were collected in respect of the period 1 April 1999 to 31 March 2000.



In future Gas licence fees will be calculated on the basis of a determination made by the DGG in respect of his identifiable costs of gas regulation and will be apportioned on:

- (i) the basis of 0.0005p per total therm conveyed in the year prior to the year for which the DGG's costs are being recouped as measured by metering equipment installed at the Pressure Reduction Stations at Ballylumford and Torytown (subject to a maximum of £20,000 per conveyance licence holder); and
- (ii) an amount equal to the difference between 95% of the DGG's costs referred to above and the amount calculated at (i) above apportioned on the basis of an estimate of the amount of regulatory activity applicable to each respective licensee currently estimated at 83% for Phoenix Natural Gas and 17% for PremierTransco;

The DGG has also decided that holders of gas supply licences will be required to pay a minimum fee each year of £500.

The balance of the costs to be charged to gas supply licensees will be apportioned on the basis of supply measured in terms of total therms supplied or where this is not available on the basis of contracted supply.

Accountancy procedures are in place to ensure that electricity and gas licensees will be charged identifiable costs relating to electricity and gas regulation respectively.

NICCE

The Electricity Order places a duty on the DGES to establish a Consumer Committee for Electricity ("the NICCE"). The NICCE has a duty to consult with NIE about all matters that appear to the NICCE to affect the interests of customers or potential customers of NIE, to keep under review matters affecting the interests of consumers of electricity, to advise the DGES on any matter relating to the supply of electricity on which it considers it should offer advice or which has been referred to it by the DGES and to make reports to the DGES and to deal with certain

complaints. In 1998 the NICCE was fully involved in the DGES's quest to secure a reduction in generation costs and lobbied government to apply the £40 million remaining in the Trust Fund to buy out part of the long term contracts.

The NICCE meets regularly to discuss issues raised by, or on behalf of, customers. These meetings are open to the public and are advertised in advance. The dates of meetings, minutes and agendas are available from the NICCE secretary.

The Chairman is appointed by the DGES in consultation with DED and is paid on the basis of a two day week. The appointment is a statutory appointment for a period not exceeding 4 years. The committee has up to 9 members also appointed by the DGES following consultation with the Chairman. NICCE members are unpaid but receive expenses for attending meetings. The Chairman and the members are recruited in line with the new recruitment procedures laid down by the Commissioner for Public Appointments for Northern Ireland. Appointments are made after an open competition and are for a period of up to 3 years.

Resources for the NICCE are provided by OFREG and are recovered from the public electricity supplier's licence fee.

The NICCE report for 1999 follows at Appendix 2.

Publicity

Management of OFREG's press and publicity involvement was handled by GCAS to 31 March 1999 and by Carmah Communications from 1 April 1999.

Consultation papers and press releases were issued on various electricity issues and these are reproduced later in this report and are also available on OFREG's website – <http://ofreg.nics.gov.uk>

The DGES and the DGG featured in a series of media interviews and contributed to a number of articles on a range of relevant topics including prices and the development of competitive markets.

As part of its ongoing campaign to heighten consumer awareness OFREG participated in a series of provincial agricultural shows and in the Royal Ulster Agricultural Show and the Ideal Home Exhibition. A series of meetings to explain the role of OFREG was held with local council representatives, representatives from the political parties and community groups.

Public Register

Details of all Electricity and Gas licences and any modifications, revocations, directions, consents or determinations relating to them are contained in their respective public registers, which are held in OFREG's office at 64 Fountain Street. Each can be viewed by the public, for a fee of £1, from 10.00am to 4.00pm Monday to Friday. Copies of licences and related documents are available for sale and are itemised in Appendix 5.

Payment Policy

OFREG complies with prompt payment guidelines set out by Government which specifies payment within 30 working days. OFREG endeavours to pay all creditors within 10 working days from receipt of invoice.

During 1998/99, 100% of creditors were paid within 30 working days.

General

During the year OFREG issued second tier licence packs to a number of prospective electricity second tier licensees. Information packs were issued to a number of students and visits were arranged for several others.

Around 30 copy licences and other documents were sold during the year and this together with licence application fees resulted in an income of some £9750.00



SUMMARY OF OUTTURN

Estimated			Actual			
Section	Gross Expenditure £'000	Appropriations in Aid £'000	Net Expenditure £'000	Gross Expenditure £'000	Appropriations in Aid £'000	Net Expenditure £'000
CENTRAL GOVERNMENT'S OWN EXPENDITURE:						
A	2224	1334	890	2224	3199	(975)*
ACCOUNT						
Service	Grant	Expenditure	Expenditure compared with Grant			
			Less than Granted	More than Granted		
CENTRAL GOVERNMENT'S OWN EXPENDITURE:		£'000	£'000	£'000	£'000	
Section A						
ADMINISTRATION						
A1 Direct Expenditure: Running Costs		1127	974	153	—	
A2 Direct Expenditure: Other Current		1077	1227	—	150	
A3 Direct Expenditure: Capital		20	23	—	3	
Gross Total		£'000				
Original		1435				
Supplementary		789				
		2224	2224	153	153	
		Estimated	Applied			
Deduct						
Z Appropriations in Aid		£'000	£'000			
Original		634				
Supplementary		700				
		1334	1334			
		Estimated	Applied			
Net Total		£'000	£'000			
Original		801				
Supplementary		89			Surplus	
		890	890		—	
		Actual surplus to be surrendered			£3.69	

*This figure is £1,865,000 less than the net total of expenditure on the Appropriation Account, being the difference between the Appropriations in Aid realised (£3,199,000) and those authorised to be applied (£1,334,000).

EXPLANATORY NOTES ON EXPENDITURE AND RECEIPTS

I. Expenditure Items	Current	Capital
	£'000	£'000
Section A: Administration		
Section A1: Running Costs	974	
Expenditure on the administration of OFREG including the salary of the Director General of Electricity Supply for Northern Ireland, the Chairman of the Northern Ireland Consumer Committee for Electricity and the Director General of Gas for Northern Ireland all of which are statutory appointments.		
Section A2: Publicity and Consultancies	1227	
Advertising and promoting the role and duties of the Director General of Electricity Supply for Northern Ireland, the Northern Ireland Consumer Committee for Electricity and the Director General of Gas for Northern Ireland. Consultancy fees related to the various activities of OFREG in carrying out the duties detailed in the Electricity Order and the Gas Order.		
Section A3: Capital Expenditure		23
Purchase of new machinery and equipment including computer equipment		
	2201	23
2. Receipts Payable to the Consolidated Fund	Estimated	Realised
	£'000	£'000
(i) Receipts of classes authorised to be used as Appropriations in Aid	1334	3199
(ii) Receipts of other classes	–	35
Gross Total		
Appropriated in Aid		3234
Net Total		1334
Actual sum payable separately to the Consolidated Fund		1900
Details of Receipts	Current	£1,900,396.66
(i) Receipts of classes authorised to be used as Appropriations in Aid.	£'000	
Section A		Capital
Electricity and Gas licence fees	3199	£'000
TOTAL	3199	
(ii) Receipts of other classes		–
Refund of consultancy costs	30	–
Miscellaneous	5	–
TOTAL	35	–

NOTES:

From 1 April 1998 Electricity and Gas licence fees were reclassified as Appropriations in Aid, however this change happened too late to include the sum on account of £800,000 which had already been voted. To give effect to this reclassification of fees the Department of Economic Development gave the Director General of Electricity Supply for Northern Ireland a delegated authority to collect licence fees on its behalf.

D B McILDOON

Accounting Officer

Date: 27 July 1999



Public Service Agreement covering the Office for the Regulation of Electricity and Gas

I Introduction

This Public Service Agreement (PSA) has been drawn up in accordance with HM Treasury guidance. The PSA focuses on the three year Comprehensive Spending Review period 1999/2000 – 2001/02 which will begin after the formal transfer of powers from the Secretary of State for Northern Ireland to the new Northern Ireland Assembly.

The aims and objectives contained in this agreement have been set by the Directors General of Electricity Supply and Gas for Northern Ireland (the Directors General). The aims are consistent with the statutory duties and functions of economic regulation for both electricity and gas as defined in the relevant Order. These may be subject to change in the light of the outcome of the ongoing review of the framework for Utility Regulation being carried out by Government.

3. Resources Summary

TABLE 1

Millions	1999/00	2000/01	2001/02
Departmental Expenditure Limit (DEL)	1.726	1.726	1.735
Actually Managed Expenditure (AME)	–	–	–

TABLE 2

Millions	1999/00	2000/01	2001/02
Departmental Running Costs (included in DEL Current Expenditure)	1.146	1.176	1.205

Note:
Licence fees are treated as Appropriations in Aid, which means that OFREG only have a token vote of 1k. The Directors General of Electricity and Gas costs are recouped fully from electricity and gas licensees.

2 Aims and Objectives

Overarching Aim

To ensure the effective regulation of the Electricity and Gas Industries in Northern Ireland.

Key supporting Objectives:

- (i) To promote competition in the generation and supply of electricity and to protect the interests of electricity consumers with regard to price and quality of service.
- (ii) To promote the development and maintenance of an efficient economic and co-ordinated gas industry and to protect the interests of gas consumers with regard to price and quality of service.
- (iii) To promote energy efficiency and reduce harmful environmental emissions.

4 Performance Targets

Objective (i)

- to assist DED in developing a trading system to comply with E.U. Directive – 35% of market open to customers by 2001.
- to reduce the cost of electricity to consumers in Northern Ireland to £253 p.a. by 2002.
- to set and monitor standards of customer service by the Public Electricity Supplier.

Objective (ii)

- to promote the development of the natural gas industry in NI
- to ensure that the number of premises passed in relevant districts is in line with Phoenix Natural Gas development plan.
- to issue gas conveyance licences for areas outside Greater Belfast and Larne.
- to set and monitor standards of customer service to be provided by gas suppliers.

Objective (iii)

- to facilitate and support energy efficiency incentives
- to create total energy savings of 55GWh per annum

5. Efficiency

(i) Service Delivery Targets

- To put in place in early 1999 improved standards of performance for Northern Ireland Electricity plc.
- To put in place by April 2002 the second price control for Northern Ireland electricity plc.
- To increase the transparency of OFREG's decision making process as suggested in the Modernisation of Utility Regulation

(ii) Efficiency Targets

- To achieve efficiency savings of 1% year on year throughout the CSR period
- To reply to all customer complaint correspondence within three working days
- To pay all creditors within 10 working days of receipt of a valid invoice

6 Other Issues

Procurement

Ofreg is committed to securing value for money from the procurement of goods and services. In honouring this commitment OFREG has entered into a service level agreement with Government Purchasing Agency (GPA)

Sickness and Fraud

As OFREG staff are all seconded from Department of Economic Development (DED), we adopt and follow any guidance/policy issued by DED with regard to fraud and sickness. Responsibility for managing short term absences rests with OFREG, including conducting return to work interviews and delivering warnings where appropriate. More serious cases, which may result in disciplinary action up to and including dismissal, are dealt with by DED personnel branch. Long term sickness is managed by DED personnel branch as part of its departmental strategy for managing sickness absence.

The fraud policy statement issued by DED in March 1997 has been adopted by OFREG and circulated to all staff.

7 Asset Sales

OFREG has no disposable assets.

8 Investment Strategy

As a regulatory body we do not have an investment strategy.



Modernising Utility Regulation

Government is committed to implementation of the Utility Regulation Review in GB as soon as possible, however there were 2 recommendations in the Utility Regulation Review that were specific to Northern Ireland – namely that the NICCE should be merged with the General Consumer Council for Northern Ireland and a single energy committee established within the Council and the DGES should have further powers to introduce competition in generation in Northern Ireland. Government propose to leave it to the Northern Ireland Assembly to consider how best to implement the Utility Regulation Review in Northern Ireland.

Future Developments

The Directors General consulted widely on the second Forward Work Plan which was published in November 1999. A copy of the plan is reproduced in Appendix 4 and is also available on the website – <http://ofreg.nics.gov.uk>

Millennium Bug

OFREG commissioned an independent assessment of its in house computer systems and complied with its recommendations.

Competition Bill

The Competition Act 1998 is applied and enforced by the Director General of Fair Trading and in relation to the electricity and natural gas industries in Northern Ireland, will be applied concurrently by the DGES and the DGG when the major provisions come into force on 1 March 2000. OFREG staff are preparing through participation in the Office of Fair Trading's course in Competition Policy.



appendix

Report of the Northern Ireland Consumer Committee for Electricity

Committee:

It was with considerable regret that the Chairman and members said goodbye to Paul Hunt at his last meeting in March 1999. He was a member of the NICCE since its foundation and made an enormous contribution to its work.

Meetings:

Meetings of the full Committee were held in Belfast in January, March, May, July and November and in NIE's Craigavon Area office in September. The Finance sub-committee met in April and October and the Customer Care sub-committee in February, June and December.

Prices:

As always, the price of electricity was the Committee's absolute priority. Although the average customer's bill continued to fall during the year, the differential with the average GB bill continues to grow. With the final resolution of the dispute between NE and the Regulator over the terms of the first Price Control Review, attention shifted to the possibility of renegotiating the generators' long term contracts. In this



context, the Committee continued to urge Government to apply the £40m remaining in the Trust Fund (set up to administer the Nuclear Levy monies) to buy out part of the long term contracts.

An important step towards future competition and hence potential downward pressure on prices, was taken during the year with the coming into effect in July of the European Directive on the Internal Market in Electricity (the IME Directive). This gives large consumers the right to trade either directly, or through a second tier supplier, with a generator who has spare capacity. While the first stage in trading began with "virtual trade" of only 200 MW, the potential for real trading will develop, especially when the Scottish Interconnector becomes operational. In all these complex arrangements, the Committee is concerned that the domestic consumer is protected against bearing the cost of "stranded contracts" from the long term contracts and will share the benefits of any trading across NIE's system by means of the interconnectors.

Reliability of supply and customer communications

The severe damage caused by the Christmas storms in 1998 kept the attention of the Committee focussed on NIE's Capital Expenditure Programme and on the company's means of communicating with customers. The Committee has been pressing NIE to enhance expenditure on low voltage lines and on tree cutting and pole replacement, bearing in mind that all major expenditure must be justified. However, the scale of the failure of communications with customers after the storms made a substantial expenditure on reliable communications systems essential. The new systems appear to offer the required improvements but the 1999 storms have not tested them to their limits.

Customer services

An area of increasing concern during the year was the operation of NIE's Revenue Protection Unit, which was established to deal mainly with theft of electricity. The legal framework within which the unit operates appears to the Committee to give too much scope to NIE not only to allocate blame to consumers who might well be innocent

but also to assess and recover the value of the electricity allegedly stolen. A sub-committee has been formed specifically to look at the operation of the unit and to examine the legal framework under which it operates. There is a major human rights issue involved and the Committee is firmly determined to pursue this issue.

Billing and metering

The Committee continued to follow the progress of the pilot project on the "key pad" meters, which may give the opportunity for customers to control their consumption more precisely. In any event, it is to be hoped that they will not incur the surcharge at present borne by prepayment meter users.

Energy efficiency and fuel poverty

Towards the end of the year, the Director General published a paper on "Energy Efficiency, Fuel Poverty and the Supply Price Control" in which, among other things, he proposed a two-tier tariff, giving customers a lower rate on the first 2640 units. While welcoming the principle behind this, the Committee is clear that it will be necessary to ensure that the fuel poor do not suffer if, through circumstances beyond their control, they have to use large amounts of electricity. There is also a need for better information on the efficient use of appliances. The Committee acceded to the request of the Director General to increase the levy for the Energy Efficiency Fund to £2 per customer and will continue to monitor the efficacy of the scheme.

The Committee was impressed by the progress of the Beechfield/Willowfield project in Belfast, which treated the issue of fuel poverty and energy efficiency in a holistic manner.

Government review of utilities

The future of representation for energy consumers had still not been decided at year end. However, the Committee remains determined that the only option calculated to achieve maximum benefit for consumers is the establishment of an Energy Council for Northern Ireland.



Statement from the General Consumer Council for Northern Ireland (GCC)

Council work

As the official body with responsibility for representing gas consumers, we believe that as many consumers as possible should have a choice of fuels. Currently natural gas is restricted to the Greater Belfast and Larne areas. We want to see the network expand to other areas as soon as possible. In looking at the case for extension, Government should consider the wider social as well as the economic case.



Introduction

The annexe to this chapter sets out the legislative and regulatory context within which the Council represents gas consumers.

Payment options

We have repeatedly stressed the need to ensure that consumers have the widest range of methods of paying for gas. This would help to avoid the situation in which consumers get into debt.

Phoenix have now started to extend their payment methods. During the year the company introduced its Energy Saver scheme, using the PayPoint network of outlets. We welcomed this initiative as a valuable, though belated, response. Similarly, Phoenix installed a number of “Quantum” meters as a debt recovery measure.

However, the key outstanding issue is “pay-as-you-go” metering. This is an essential payment method for consumers, many of whom will have been used to paying for energy as they use it whether electricity or bags of coal. Phoenix is currently conducting trials for a pay as-you-go meter. In our view it needed to have been available from the start and certainly ought to be available throughout the network as soon as possible.

Standards of performance

The gas licence requires Phoenix to set up and monitor standards of performance. The main areas covered by the standards are: responses to customer enquiries and complaints; requests for connection; attending to gas escapes; having special arrangements for customers who are older, disabled or chronically sick; energy efficiency advice and meter reading. 1999 was the second full year of operation of the standards.

We initially had a difference of opinion on the definition of a complaint for the purposes of the Standards. We believe that the defining feature of a complaint is the expression of

the fact that some aspect of the service provided has fallen below the consumer's expectation. After a long period of negotiation, we were pleased to be able to persuade Phoenix to accept our definition. They also agreed to record and classify all complaints from the start of January 2000.

Gas installers

Installers play a key role in the customer service chain especially when a completely new industry is being established, as is the case for natural gas. All installers are required by law to be CORGI registered, this is a national standard to ensure safety and competence. Despite this requirement we have been aware through customer complaints of some unevenness in the standard of installation work. While this is first and foremost the responsibility of the individual installer, it has serious implications for Phoenix as they try to win more customers. At the invitation of Phoenix, we made a presentation at a seminar for installers setting out what the customer expects and how to avoid problems.

Gas conversion

A number of consumers had been given confusing information about converting LPG appliances to run on natural gas. While this was not the fault of Phoenix, we alerted them to the problem saying that consumers needed clear advice about conversion in order to avoid incurring unnecessary expense. Following our representations, Phoenix agreed to undertake additional work with sales consultants and installers in order to improve the quality of advice being offered to consumers.

Opinion survey

We began a major project to uncover the views, perceptions and concerns of gas users and non-users. Funded by OFREG, the survey results will be developed into a policy report containing recommendations for change where necessary.

Key gas customer service issues

The Council discussed a range of important issues with Phoenix, including metering, prices, safety, debt and disconnection policy, security of supply, the millennium bug, and the development of the gas network.

Energy Marketing Information

Consumers need accurate and reliable information when making comparisons between the running costs of different types of home heating systems. The Code of Marketing Practice for Energy Suppliers was developed jointly by the Council and the Northern Ireland Housing Executive in order to combat misleading or unreliable marketing information.

Five adjudications were made during the year; two against oil companies and two against Phoenix Natural Gas. One complaint was not upheld.

Fuel poverty

The Council is fully committed to the cause of reducing fuel poverty. We believe that the scourge of people living in cold, poorly insulated houses can and should be eradicated but it will take a partnership approach to address the wide range of issues involved such as health, building regulations, standards of workmanship, heating systems, fuel costs and payment methods. We met NEA to discuss a co-ordinated approach. We share their view that a Fuel Poverty Task Force should be created and are willing to help in its establishment.

Utility regulation

A new law for GB is before Parliament that will bring the regulation of electricity and gas together; place a primary duty on the regulator to protect the interests of consumers, and combine the formerly separate gas and electricity consumer bodies.

We support the proposal for a single Northern Ireland energy committee to be established within the Council. We were pleased to note that the official Policy Review of the Council undertaken by DED arrived at the same conclusion.

Fuel safety

The Council persuaded DHSS (Consumer Safety Sub-group) to distribute more than 25,000 of our fuel safety cards to Environmental Health offices and doctors' surgeries throughout Northern Ireland. We also distributed the card at the carbon monoxide roadshow. The Department of Trade and Industry's week-long roadshow was backed up by radio advertising on local stations.

Energy Watchdog publication

The Council launched its *Energy Watchdog* publication, setting out our views on the key energy issues and our proposals for action. Copies were distributed to, among others: Assembly Members, MPs, political parties, senior civil servants, Councillors, Town Clerks, and managers of CABx, advice centres, and NIHE District Offices.

Consultation Documents

During the year, the Council made responses to the following energy related consultation documents.

- Reducing the Cost of Generating Electricity in Northern Ireland. *OFREG*
- Strategy 2010. *Department of Economic Development*
- Climate Change Levy. *House of Commons Trade & Industry Select Committee*
- Energy Efficiency & Fuel Poverty. *OFREG*
- CO₂ Reductions & the Electricity Supply Industry. *OFREG*
- White Paper “Modern Markets: Confident Consumers”. *DTI*
- Vision 2010 – Energy Action Plan. *DED Energy Branch*



Representing Consumers

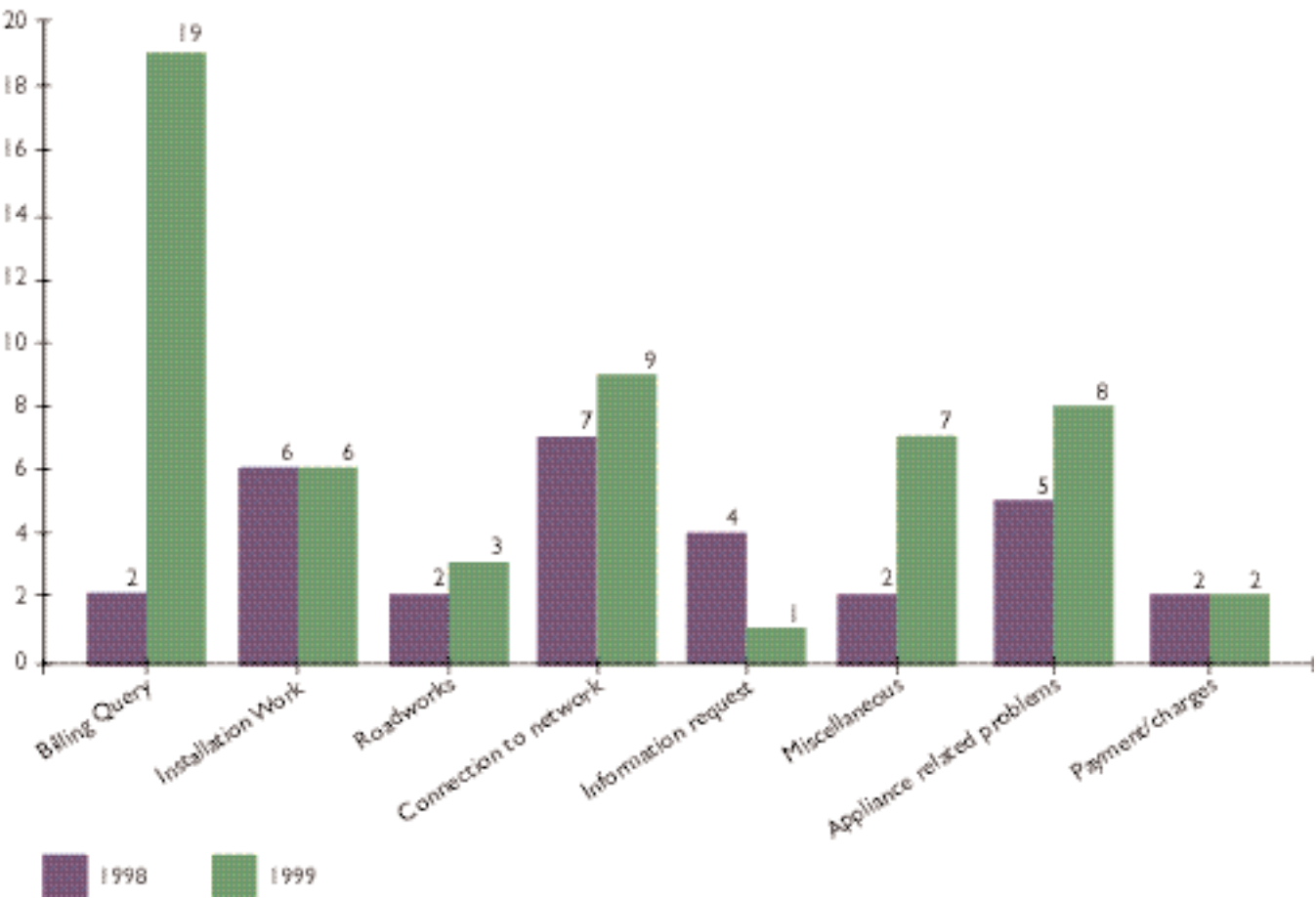
We represented the interests of energy consumers on the following organisations:

- National Home Energy Efficiency Partnership
- Home Energy Conservation Authority,Advisory Panel
- Foyle Regional Energy Agency, Management Committee
- Domestic Energy Efficiency Scheme,Advisory Group
- Energy 2000 Forum.

Meetings

The Council held three formal liaison meetings with Phoenix. Council staff also met Phoenix frequently in ad hoc business meetings. We agreed to introduce regular Complaint Review Meetings with Phoenix – a new forum designed to progress difficult complaints and to discuss wider associated issues. We met the DGG on three occasions to discuss issues of mutual interest in relation to the supply of natural gas to consumers. The Council's Energy Group met four times during 1999.

GCCNI Gas Representations – 1998 and 1999



Representations

The overall breakdown of gas representations for 1999, and a comparison with 1998, is shown in the table above.

The Council dealt with 55 natural gas representations during the year. A further 6 related to Liquefied Petroleum Gas (LPG). Of the natural gas representations, 12 were enquiries, 18 were first stage complaints and a further 25 were second stage complaints.

A significant number of billing queries arose. Some customers experienced difficulty having the Direct Debit set up while others discovered that the money was not always being deducted from their accounts. Billing complaints also included cases where consumers had experienced a delay in receiving their first bill after being connected. We emphasised to Phoenix the importance of issuing bills soon after connection to avoid confusion and build-up of debt.

Initially Phoenix signed up customers in advance of gas pipes arriving in the area and gave a date for connection. In some areas they failed to meet these dates leaving customers annoyed and frustrated. Phoenix have now changed their procedure and only sell to customers who can be connected immediately.

Although appliance related problems are not chiefly Phoenix's responsibility they have agreed to work closely with installers to minimise the number of problems that arise.

First Stage – These are complaints and enquiries where the consumer contacts GCCNI without first taking the matter up with the company concerned. In such circumstances, we pass the matter on to the company for investigation and ask to be kept informed of progress in dealing with it. We then follow up with the individual who has raised the matter to ask if they are satisfied. If not, the complaint then becomes second stage.

Second Stage – These are complaints where the consumer has been unable to obtain a satisfactory response from the company concerned. In these cases, we formally investigate the complaint on the consumer's behalf.



Annexe

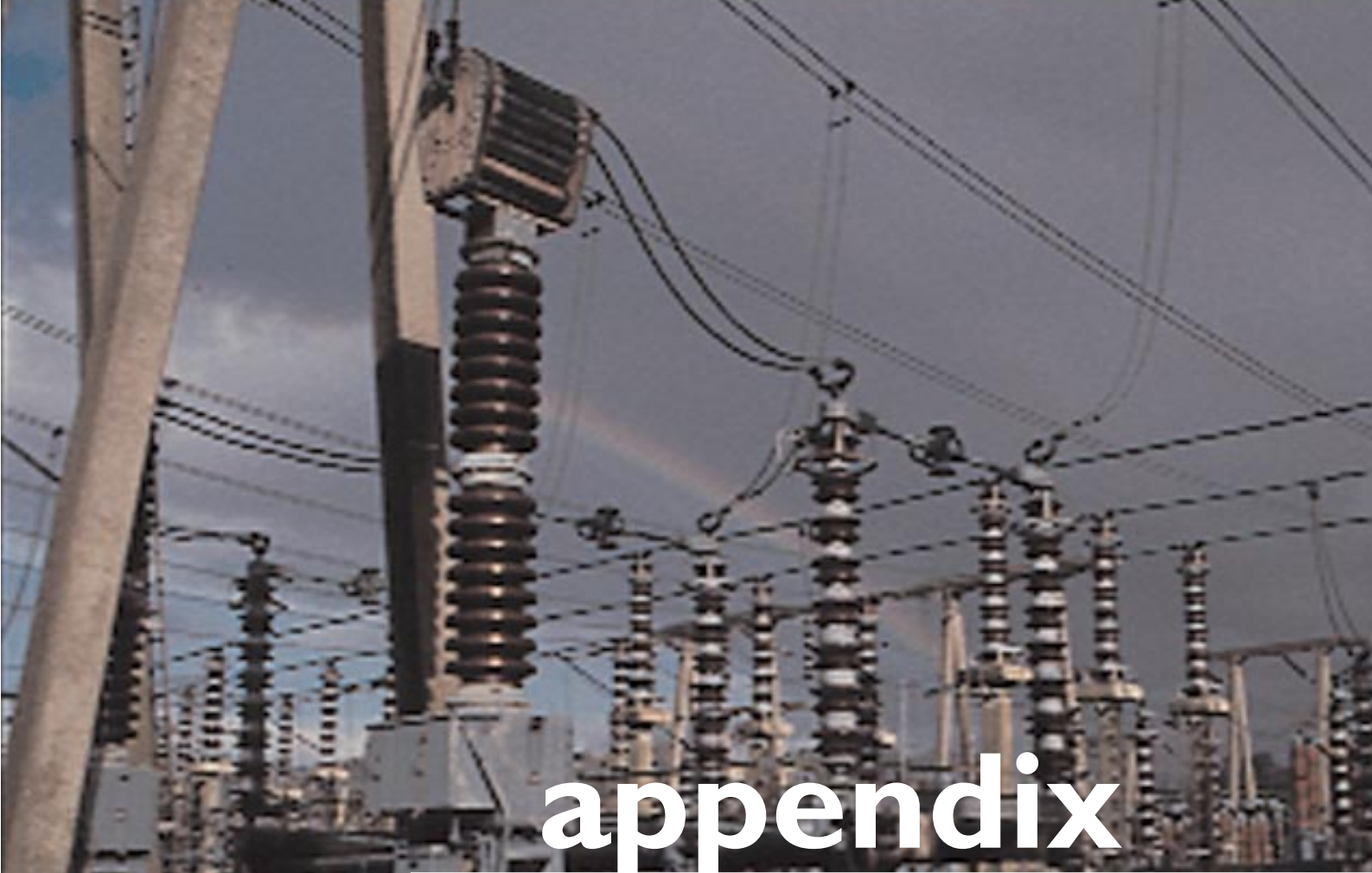
Legislative and Regulatory Context

The Gas (Northern Ireland) Order 1996 sets out the duties and responsibilities of the General Consumer Council for Northern Ireland in dealing with gas matters. Specifically, the Council:

- i deals with gas customer complaints, investigating any matter which appears to it to be a relevant matter;
- ii makes representations to, and consults, licence holders about matters affecting the interests of gas consumers;
- iii keeps under review matters affecting the interests of gas consumers;
- iv advises the DGG on matters affecting the interests of gas consumers on which the Council considers it should offer advice or which are referred to it by the DGG;
- v refers to the DGG any matter that appears to the Council to be an enforcement matter.

In addition to the legislation, separate licences have been issued to the companies involved in the conveyance and supply of gas in Northern Ireland. These licences contain a requirement to consult the General Consumer Council in the formulation of policies for the conduct of business activities insofar as they may affect consumers. The key licence relating to domestic consumers is the Combined Licence for the Conveyance and Supply of Gas, issued to Phoenix Natural Gas.

The Council took up its gas responsibilities with the issue of the licences on 5 September 1996. No formal references had been made to the DGG by 31 December 1999.



appendix

4

Electricity Consultation Papers

- Climate Change Levy – Submission from Ofreg May 1999
- Energy Efficiency and Fuel Poverty – Consultation Paper – June 1999
- CO₂ Reductions and the Electricity Supply Industry – A Consultation Paper issued by Ofreg – August 1999
- The Northern Ireland Electricity Supply Market and The Development of Competition – Progress Report for 1999 – 2000 and Prospects for 2000 – 2001 – November 1999
- Cross Border Trading in Electricity – A Consultation Paper issued by the DGES – November 1999
- Forward Workplan and Topics for Consultation – 2000 – 2001 Issued by the DGES and the DGG – November 1999
- Energy Efficiency, Fuel Poverty and the Supply Price Control – December 1999



Climate Change Levy Submission from Ofreg

28 May 1999

Introduction

According to the data published by the EU, the UK per capita CO₂ emission output in 1996 was 9.4 tonnes. No separate official Northern Ireland figure is published but work by the University of Ulster indicates that the NI total is virtually the same as the UK average and was 9.5 tonnes in 1997.

This would suggest that on the grounds of equity alone, Northern Ireland should be expected to make a similar contribution per capita to the rest of the United Kingdom. Ofreg is not aware of any argument for Northern Ireland being exempted from making a proportionate contribution to the UK total.

Conversely, Ofreg is not aware of any argument for Northern Ireland making a disproportionately large contribution.

While emission levels in Northern Ireland and Great Britain are virtually identical, they are derived from radically different patterns of energy production and consumption. The natural gas industry in Northern Ireland is embryonic, the primary fuel mix in electricity generation differs markedly from the GB mix. Northern Ireland has a different industrial pattern and the absence of intensive energy users may, in part, reflect the already high cost of energy in Northern Ireland. The transport patterns which flow from the size of the area, its topography and distribution settlement are also different.

For these reasons fiscal instruments which are designed to achieve a specific policy outcome in Great Britain may have radically different outcomes in Northern Ireland.

The need for sensitivity in applying policy instruments designed for GB to Northern Ireland is compounded by the second fundamental different between NI and GB. NI shares a land mass with another EU Member state.

The island of Ireland is a single market within the EU with two fiscal regimes. This situation must be recognised in applying UK fiscal policy if Northern Ireland is not to be unwittingly exposed to unfair competition.

The Argument

It is not the purpose of this paper to argue that the Climate Change Levy is inappropriate for Great Britain. However, it does seem improbable that a tax on a commodity with a low price elasticity, many units of which either do not produce the offending commodity (CO₂), (nuclear, renewable) or do so in relatively small amounts (CHP and CCGT), will be efficient in achieving its objective at reasonable cost.

However, the argument central to this submission is that the unmodified application of the Climate Change Levy will not decrease emissions in Northern Ireland. On the contrary, emission levels will be increased and the energy tax will have an effect that would be the opposite of that intended.

Elasticity of Demand for Energy

The Climate Change Levy proposes taxing coal and Gas at 0.21p per kw/h and electricity at 0.6p per kw/h. If the tax is to be successful the outcome must be a lower consumption of coal, gas and electricity for any given level of output.

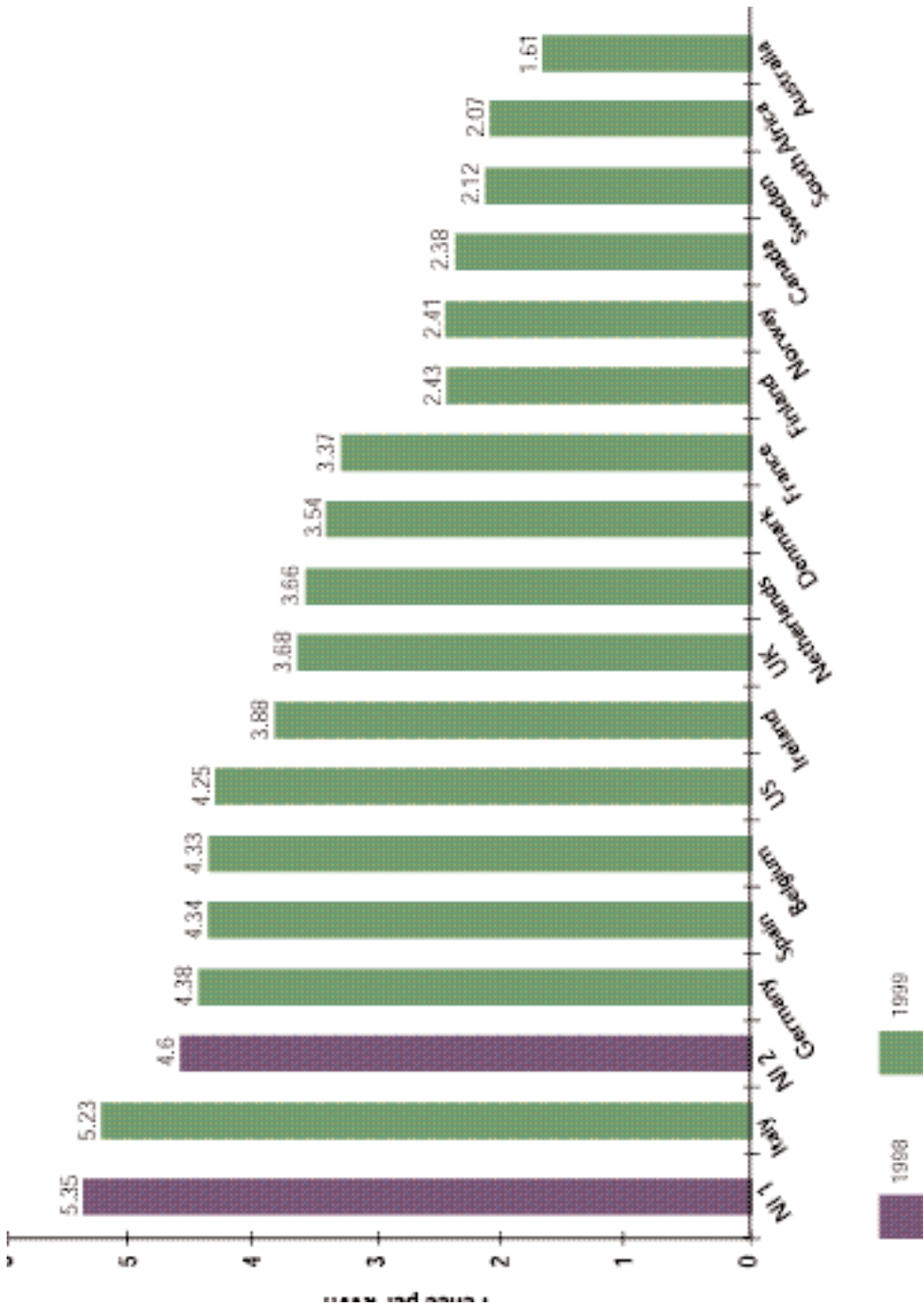
There is, therefore, an implicit assumption that the demand for electricity and gas is price sensitive and that at a higher price less will be consumed. Since it is presumably not intended to damage the level of output in the economy, the intention must be to use the price signal to induce consumers to use energy more efficiently than they do at present.

Electricity Prices in Northern Ireland

The attached bar chart (fig 1 shown on the opposite page) shows the price of electricity for industrial and commercial customers in Northern Ireland. It is the highest in Western

Figure 1: Industrial and Commercial Electricity Prices April 1998

Note: Northern Ireland 1 figure excludes load management. The NI 2 figure is reduced by 14% due to load management.
Source: National Utility Services and NIE



Europe and is 1.67p per kwh above the level for the UK as a whole. It therefore follows that industry in Northern Ireland has already been exposed to price signals about three times as punitive as the proposed levy on electricity prices and to prices which, without the Climate Change Levy, are substantially above prices in GB after the levy.

If high electricity prices are a signal to use energy efficiently this signal has already been conveyed to Northern Ireland industry. Specific measures are in place for promoting energy efficiency in Northern Ireland.

Energy Efficiency in Northern Ireland

The average payback period for energy efficiency investment in industry in Northern Ireland is about 25% shorter than in GB because energy efficiency investments are likely to cost no more than in GB whereas the saving from the avoided cost of energy is higher. There are specific measures in place to promote energy efficiency:

- Revolving Fund loans for small businesses administered by the Energy Savings Trust.
- NIE's Shared Savings scheme under which NIE funds the energy efficiency investment and is repaid on the electricity bill.
- IRTU/DED energy efficiency advice services to industry.
- DED's Energy Demonstration Scheme, using EU structural funds, provides support for new – to Northern Ireland – techniques or technologies that will lead to lower energy costs.
- Three local energy agencies provide support and advice to all categories of energy consumers.
- CHP technology has grown from 4 applications in 1996 to 22 now, with 10 more in the planning stage.

- Electricity Supply companies have an incentive (collected through the T&D charge) to market energy efficiency ie., to sell less electricity for any given level of energy services their customers are seeking to enjoy.

Two conclusions flow from the above portrait of the electricity industry in Northern Ireland:

- industrial customers are already heavily incentivised to minimise their consumption; and
- given the widely recognised market failure in energy efficiency goods and services, steps have already been taken to construct the capability for delivering energy efficiency to industry (and all other classes of consumers) and construct an energy efficiency culture.

The Gas Industry in Northern Ireland

Northern Ireland does not yet have a substantial natural gas industry. The existing licence covers only Greater Belfast and Larne. The first gas customer was connected in December 1996. Only by the end of 2003 will every potential customer in the licence area have access to gas.

Gas has to be competitive with incumbent fuels, particularly oil, to obtain market share. At present, because oil products are covered by a different fiscal regime, it is not at all clear that the existence of two separate fiscal regimes (Climate Change Levy for gas and excise duties for oil) will not lead to market distortions.

Separating oil and gas means that there is a built-in uncertainty as to whether unco-ordinated fiscal measures will change their relative prices. This will be fatal to proposals for the expansion of gas to other parts of Northern Ireland outside the licensed area.

If the natural gas industry is to realise its full potential to remove carbon dioxide emissions from the environment then two conditions must be met:

- it must not be made uncompetitive with oil products by unco-ordinated fiscal measures which tilt the price in favour of the more polluting of the two fuels; and
- there must be confidence in the long term that this will not happen as it will, otherwise, be impossible to attract the necessary private sector investment to develop the industry outside the existing licensed area.

Finally, in respect of gas, it should be noted that the need for customers to pay for a new network, including an underwater pipe between Scotland and Northern Ireland already imposes higher costs on Northern Ireland customers. The price signal proposed to incentivise industry to use gas more efficiently is already being borne by gas customers in Northern Ireland.

Conclusion with regard to Gas

Northern Ireland, unlike GB, does not have a mature gas industry and customers already pay more for gas than they do in GB. A fiscal measure which disadvantages gas in relation to oil in future, or which gives rise to the perception that gas could be disadvantaged in relation to oil, will make it extremely difficult and probably impossible to persuade the private sector to invest in gas infrastructure to bring gas to other parts of Northern Ireland. With that will disappear, not only the additional economic benefits which gas would bring to those areas, but the substantial savings in CO₂ emission which would result from the expansion of the natural gas industry and the CHP applications which would follow from gas expansion.

One Market/Two Fiscal Areas

There is already considerable experience with vehicles, of the consequence of having widely diverging fiscal regimes on either side of the Irish border. Vehicles at least can remain

based in Northern Ireland and the paradoxical result of wide price differential may be, for many users, lower costs as it provides an incentive to source their fuel in the Irish Republic. This of course leads to a loss of revenue for the Treasury.

With fixed point energy consumption this is not possible. Sourcing electricity or gas from the Irish Republic would not avoid the Climate Change Levy since imports will also attract the levy at their point of consumption.

The consequence therefore of a levy that widens the gap between NI and the Irish Republic is to significantly increase the Republic's competitive advantage over Northern Ireland in attracting inward investment.

Northern Ireland and CO₂ Emissions

It is not the purpose of this paper to prescribe the way in which Northern Ireland could best make a contribution to a reduction in CO₂ emissions. An NI CO₂ reduction strategy should flow from a holistic approach involving all sectors of the economy and all Government Departments.

However, it should be noted that on the basis of work which Ofreg has carried out in connection with a restructuring of the electricity industry and an expansion of the natural gas industry, it can be demonstrated that:

- the electricity generation industry, with no assumed increase in energy efficiency above the present trend line, could cope with a 20% increase in consumption between now and 2010 while keeping CO₂ emissions below 80% of the 1990 level;
- additional CO₂ savings could come from the increasing ability of the Electricity industry at marketing energy efficiency, CHP and green power;
- the expansion of natural gas, used efficiently as the industry is being incentivised to do, could produce further CO₂ savings across Northern Ireland if it attracts the maximum possible number of customers.



Total CO₂ savings in buildings and processes greatly in excess of 20% are achievable. These savings require investment which will be more difficult to achieve if resources are already devoted to financing higher prices.

Summary and Conclusion

The proposed Climate Change Levy, if applied to Northern Ireland, will have the perverse effect of increasing CO₂ emissions beyond what they would have been.

Secondly, the levy will be damaging to regional competitiveness. A 10% increase in energy costs for some companies facing international competition could be the final straw. More obviously, it will make it harder to attract inward investment.

Thirdly, Northern Ireland is rich in pain free potential for making significant CO₂ savings. Government policy should seek to harness this potential.

Energy Efficiency and Fuel Poverty

A Consultation Paper issued by

The Director General of Electricity Supply and Gas for Northern Ireland

June 1999

Purpose

The purpose of this consultation paper is to:

- set out the case for an energy levy in order to reduce overall energy bills, combat fuel poverty and reduce emissions;
- seek views on whether the levy on electricity customers should be increased to £1.50 this year and £2 thereafter; and
- seek views on whether a similar levy should be collected from gas customers.

Introduction

Society faces three essential problems which converge in the way in which we manage energy in general and electricity in particular:

- (i) Cost: we require energy to be as cheap as possible not least to ensure that our economy remains internationally competitive.
- (ii) Accessibility: we regard energy as so fundamentally important to the quality of life that we believe that everyone should have access to a reasonable amount at affordable prices.

- (iii) Pollution: we are increasingly concerned about the damage fossil fuel energy production does to the environment. Consequently, there is a growing awareness of the need to produce and consume energy efficiently and as far as practicable to reduce the carbon energy co-efficient – ie., the amount of carbon dioxide (CO₂) which is released into the environment with every kilowatt hour of electricity which is consumed.

The best energy policy will therefore be one which:

- drives down production costs and prices;
- uses less carbon in its primary fuel;
- improves the efficiency with which energy is used; and
- delivers an adequate energy supply to all who require it irrespective of income.

Generally speaking, individual energy policy instruments are unlikely to be effective at meeting the four characteristics of the best energy policy described above. Indeed any single policy instrument may work against at least one of the other features of the best energy policy in proportion to its success in another direction. For example, lower prices may increase consumption and hence emissions whereas renewable energy is usually dearer than fossil fuel energy so while it reduces emissions, it increases costs and exacerbates fuel poverty. In order to achieve the best possible overall performance it is necessary to employ a number of policy instruments which can complement each other to provide a holistic approach which optimises the delivery of all four aspects of a good energy policy.

Energy Efficiency and Market Failure

Energy efficiency is one policy instrument which scores well on all four aspects of energy policy. By improving the efficiency with which energy is consumed it:

- (i) reduces the user's total energy bill; and
- (ii) reduces emissions from energy production.

Energy efficiency does however involve initial capital expenditure and it is this which results in the failure of the potential of energy efficiency to be realised. In the case of the fuel poor there may be no way for them to access the savings.

Market failure reduces the potential of energy efficiency in two ways. Firstly, the savings obtainable from the existing energy efficient appliances, at their current prices, are not realised. Secondly the market potential to drive down the cost of energy efficient appliances by larger production runs is not realised. Condensing boilers and low energy light bulbs are two products for which there is clear evidence that stimulated additional demand can lead to significantly lower prices. Moreover, it seems likely that customers who demand energy efficient products will create a market environment in which manufacturers will be obliged to put even more effort into upgrading their products.

Market failure in energy efficiency requires intervention and the Energy Saving Trust in particular has demonstrated the merits of intervention in a number of product areas.

Northern Ireland's Comparative Advantage in Energy Efficiency

Northern Ireland has a marked comparative advantage in energy efficiency. High electricity costs increase the value to the customer of each unit saved. NIE's tariff changes, by which standing charges for all domestic customers taking less than 5000 units a year have been abolished, have substantially improved Northern Ireland's comparative advantage. The marginal cost of a unit of domestic electricity is 33% greater in Northern Ireland than in England and Wales. Consequently the return or savings which arise from



an energy efficient investment is substantially greater here. A 20 watt low energy lightbulb (equivalent to a 100 watt ordinary light bulb) which costs £9.99 would pay for itself in 1390 hours in Northern Ireland as against around 1850 hours in England and Wales. The total saving in Northern Ireland over the lifetime of the bulb would be £50 compared to £38 in England and Wales.

The newness of the natural gas industry adds a further dimension to Northern Ireland's comparative advantage in energy efficiency, since it means that the industry has the opportunity to develop the maximum uptake of gas boilers with a high efficiency and in particular, gas condensing boilers. Even at current low oil prices a gas customer in Northern Ireland can enjoy lower household energy costs than someone on oil here, or a gas customer in England not using energy efficiently.

Recent Northern Ireland Experience in Energy Efficiency

Given market failure in energy efficiency, delivering energy efficiency to the scale of its potential requires organisation and the creation of a delivery capability. Northern Ireland has been rapidly moving up the energy efficiency learning curve in recent years. There are now three district council backed energy agencies: Western Regional Energy Agency and Network (WREAN), Foyle and Belfast; the Housing Executive has become the Home Energy Conservation Agency (HECA); Energy Action Grants Agency (EAGA) has supervised the delivery of loft insulation to 10,000 households, draught proofing to 63,000 households and also low energy light bulbs and energy advice. NIE has developed a range of energy efficiency schemes for its clients and the roll out of Phoenix's natural gas industry reduces costs and improves the environment. Under National Energy Action (NEA), a lobby on fuel poverty is growing in credibility and effectiveness. Nevertheless, it has to be acknowledged that Northern Ireland has come to some of these things rather late in the day. For example, the £1 per electricity customer has only been levied in Northern Ireland since 1997; in England it has been collected since 1994.

Fuel Poverty

Fuel poverty is the term used to cover the section of the population who must spend more than 10% of their income on energy and who, even at that, are probably not able to enjoy minimum levels of comfort. Lack of financial resources makes it particularly difficult for this section of the population to obtain access to the benefits of energy efficiency.

The Energy Industry and Green House Gas Emissions

The introduction of natural gas at Ballylumford for power generation and the beginning of renewable generation reversed the trend in the electricity industry's relationship with CO₂ – as well as other gases harmful to the environment. Over the next ten years at current demand growth rates, it should be possible to accommodate growth while reducing the electricity industry's emissions to 80% of their 1990 level. This is no mean achievement as it implies taking about 2 million tonnes of CO₂ out of the environment compared to the “no change” scenario.

However, beyond 2010 further growth in demand for energy services would necessitate other measures such as more energy efficiency or greater reliance on renewables.

Energy Efficiency – No Quick fix

If energy efficiency is to contribute to reducing emissions it can only be on the basis of a steady build up over a longish time. There can be no major significant injection of capacity analogous to the commissioning of a new power station or interconnector. If the £1 per customer which NIE raised last year meets its target – which appears to be the case – of saving 55 Gigawatt hours of demand over its lifetime, that probably means reducing aggregate demand by about 5 Gigawatt hours next year and each year thereafter. It would require £1 per customer each year for 10 years before the annual saving in any year reached 55 Gigawatt hours a year. To put this in perspective, this year's increase in electricity demand is projected to be 178 Gigawatt hours so that on the present basis, in the tenth year of collecting the levy it will only take out just one third of one year's increase in demand.

Energy efficiency delivers substantial benefits to the individual customer. But at a societal level, benefits can only be secured if many customers improve their energy efficiency. Energy efficiency's benefits require literally hundreds of thousands of small decisions rather than one big decision and the implementing of hundreds of thousands of individual investments.

A capability for delivering hundreds of thousands of small changes in practices and appliances cannot be created overnight. It must be gradually built up over many years. It requires the development of an energy efficiency culture among all energy users.

If energy efficiency is to be capable of making a worthwhile contribution by 2010 its build-up should begin now.

Financing Energy Efficiency

As energy efficiency investment provides in most cases a five year or better payback, it should be self-financing and paid for by the beneficiary. The market, however, needs encouragement and NIE's price control allows a small incentive to its Supply Business of 0.4p for every kWh of energy that it succeeds in saving which would not otherwise have been saved. The responsibility for monitoring and evaluating these savings has been entrusted to the Energy Saving Trust. (This scheme is also available to any second tier electricity supplier but so far NIE is the only supplier to have made use of it). The idea is to provide NIE with the incentive to leverage additional funding from the beneficiary and other sources. This scheme – which is a unique experiment in the British Isles – will have a modest beginning but even in the first year, NIE's incentive has resulted in an increase in energy efficiency savings and a small amount of profit for the company.

Financing Energy Efficiency – The Fuel Poverty Trap

While energy efficiency investments should be financed by the beneficiary this is usually not a practicable possibility with fuel poverty. The potential beneficiary does not normally have the money to finance the investment. The most effective way, with the least administrative cost, of tackling the problem of fuel poverty is to deliver the energy efficiency investment without requiring a contribution from the beneficiary. Accordingly, the majority of the £650,000 raised annually under the £1 per customer levy is targeted at the fuel poor. It makes a useful contribution but given the scale of the problem – an estimated 170,000 households are in receipt of social security benefits, and most of these may be suffering from some degree of fuel poverty – it does not help many households each year. To tackle the problem over a short timescale, a much larger levy would be required. By way of illustration only, a levy of £10 per customer would raise over £6.5m per annum.

Levies and Energy Bills

The imposition of any levy on an unavoidable cost – and the £1 per customer is levied through the NIE's T&D monopoly business – will raise prices for electricity consumers. A £10 levy would initially raise each electricity customer's bill by that amount. But it would also reduce energy bills overall by a greater amount. The £6.5m per year that would be raised would, in due course, reduce overall energy bills by £38m per annum as the measures took effect, making society as a whole, better off. Even those who did not benefit directly from the levy would receive indirect benefits in the form of less pollution, more spending power circulating in the economy and a bigger market for energy efficient appliances, leading to price reductions. In the long run, the need for investment in the electricity network would be reduced and this would also result in lower electricity bills for everyone.



Extending the Levy to Natural Gas

As Northern Ireland is developing a new natural gas industry, it is likely to be more efficient than the well established gas industry in other parts of the British Isles. However, it is imperative that gas is used as efficiently as practicable and that all households have access to the benefits of natural gas. The question therefore arises as to whether an energy efficiency levy should be specifically raised from gas customers.

In the case of gas customers there need be no measurable impact on prices as the levy could be a redeployment of Phoenix's market development money .

Levies and Taxes

The £1 per customer levy was introduced in England and Wales in 1994. In the period that followed there was considerable public debate about whether Regulators should levy significant amounts, or if such action was tantamount to taxation. The now accepted view is that Government should accept the responsibility for using a levy as an instrument for raising the sort of sums on the scale required to constitute a major policy initiative to combat fuel poverty. In Northern Ireland a decision to develop the full potential of an energy levy so that it becomes the centrepiece in a strategy to tackle fuel poverty, reduce energy bills generally and reduce emissions, cannot be taken by me. It is a matter for Ministers answerable to Parliament or the Northern Ireland Assembly.

Energy Efficiency and Renewable Electricity

NIE launched its "eco energy tariff" last year which gives customers the choice of buying 10%, 50% or 100% of their electricity from renewable resources. There is a premium of 1.25p per kilowatt hour. To date interest has been encouraging. Persuading the domestic customer to shoulder the financial burden of renewables might be a very effective way by which Northern Ireland could contribute to emission reductions without impairing the competitiveness

of the industrial sector. Moreover, domestic customers who opt at the same time for both energy efficiency and some renewable energy should not see an increase in their bills. There is a strong case for a small part of a levy being used to assist the steady build up of the renewable market.

Increasing the Levy now

I have been asked by National Energy Action (NEA) to consider increasing the £1 per customer levy to £2 and to apply the levy to gas customers.

It is clear that energy levies could play a key part in combatting greenhouse gas and other emissions, reducing overall energy bills in general and fuel poverty in particular. They would also add local value to the energy chain by creating additional employment in Northern Ireland. With a levy of £2 per customer the combination of directly created jobs and lower energy bills should create additional employment in Northern Ireland. For example, the total amount raised by £1 of levy over the lifetime of the measures it finances should create over 200 man years of employment.

It is also clear that I cannot introduce a levy on the scale required to eliminate the scourge of fuel poverty without being asked to do so by the Minister. It would, in any case, be my view that a levy should increase only in pace with the capacity to utilise it effectively and as electricity bills fall in real terms so that no household would be worse off. Although the price gap with GB remains a major concern, it should be noted that in real terms the average domestic electricity customer on direct debit will pay 26% less this year than in 1996/97. The reduction is due to a combination of the reduction in the VAT rate, the NI Supply price control, the NIE Transmission and Distribution price control and falling generation costs. An increase of £1 in the levy should be set, therefore, in the context of the average domestic customer paying £108 less in 1999 – 2000 than they would have paid if prices had remained in real terms at their 1996 – 1997 level.

If nothing is done, the energy efficiency capability that has been built up in Northern Ireland will be wound back. The £1 per customer depreciates each year in value and the £1 which, under the present arrangements, customers in Northern Ireland will be paying in 2001 will only be the equivalent of 82p levied from English customers in 1994. Secondly, it might be argued that account should be taken of the greater financial savings obtained for customers in Northern Ireland from energy efficiency. Domestic electricity customers pay £55 per head more than they would in GB – that is £36m per annum. An additional £1 per customer here would add £650,000 per annum to bills. This would add £3m to bills over a five-year period but could save £23m compared to £17m in England and Wales if all the savings came off the domestic electricity bill.

If the levy were to be increased to £2, then I believe that it would only be prudent to increase it by that full amount in 2000 and to increase it this year by 50p. A £2 levy in 2001 would in real terms, be only 64p greater than the £1 levy raised in England in 1994. I do not think that a levy greater than £2 (indexed to inflation) would be acceptable solely at the initiative of the Regulator.

Once this consultation has been completed I will publish the results and announce my conclusion. In reaching a conclusion I will, in particular, wish to take into account the views of the members of the Northern Ireland Assembly.

In publishing my conclusions I reserve the right to quote from any representations made to me unless the authors ask for their views to be treated as confidential.

Comments should be made in writing to Alan Smith, Ofreg, Brookmount Buildings, 42 Fountain Street, Belfast BT1 5EE by 31 August, 1999.

CO₂ Reductions and the Electricity Supply Industry

A Consultation Paper issued by Ofreg

August 1999

CO₂ REDUCTIONS AND THE ELECTRICITY SUPPLY INDUSTRY

Purpose

Apart from transport, the energy industry is the primary source of the major green house gas (CO₂). It will therefore, as identified in the Marshall Report and in recent government proposals to introduce a climate change levy, be a focal point for action to reduce the emissions of CO₂ .

The industry must learn to be "CO₂ smart." "CO₂ smartness" should feed into its normal thinking process when it considers new investments, new markets, new products and how these can be enhanced by exploiting a CO₂ reduction opportunity. In other words, the electricity supply industry must change from being part of the problem to being part of the solution.

The necessary CO₂ reductions can be brought about by a variety of ways and there is no inherent reason why the reduction of CO₂ emissions at least as long as CO₂ reductions can be made cheaply through fuel switching or efficiency investments with short pay back periods – should be financially painful.

To ensure that the least cost methods of reducing CO₂ are implemented, those in the industry should be given the opportunity themselves of bringing forward the most cost effective methods of reducing CO₂ . The purpose of this paper is to examine ways in which the industry's regulatory structure could ensure that CO₂ reductions are delivered and to seek the views of interested parties.



Introduction

Action to reduce the emission of green house gases, which are accepted by government and inter-governmental agencies as a key factor in climate change, is now a major item on the policy agenda. Pressure to reduce emissions arises from our national and international commitments, such as those agreed in the UN Framework Convention on Climate Change (UNFCCC) and the Kyoto protocol. Current Government policy is described in the UK sustainable development strategy "A Better Quality of Life" and the Government has recently canvassed widely on the issue as part of its Review of Energy Sources for Power Generation and in its consultation on a UK Climate Change Programme.

Energy in a variety of forms but particularly electricity is the vital underlying element of our civilisation. Its production and consumption are absolutely essential, so much so that its consumption is relatively price inelastic – that is the amount consumed tends to be largely indifferent to price changes. While this appears to be true of all domestic energy sources it is particularly so in the case of electricity. On the other hand electricity consumption is much more sensitive to income levels. As we become richer, we use more energy. Households in the lowest 10 per cent of income in the UK spend on average £5.06 per week on electricity, whereas households with the highest 10 per cent of income spend £8.99 on electricity per week. Average income households spend £6.73p (1996-97). Energy consumption therefore, irrespective of price, seems to be driven up by rising incomes. On the other hand the price of energy is a key cost in industrial production and our competitiveness and therefore our prosperity and standard of living depends on having energy prices which are not out of line with other industrialised countries.

As its lower household incomes and high electricity prices would suggest, Northern Ireland already consumes less electricity than the UK average. Northern Ireland's households are on average about 20% larger than households in GB but they consume on average only 2% more electricity¹.

This is despite the non availability of gas for cooking until very recently and even now it is not yet widely used for domestic cooking. In 1997 annual domestic per capita consumption of electricity in Northern Ireland was 1650 kilowatt hours per year compared to a UK average of 1950 kilowatt hours. For the Northern Ireland economy as a whole per capita consumption in 1997 was about 1044 kWh per annum less than the UK average.

The amount of electricity used to produce £1m of GDP is also lower in Northern Ireland than in GB with each unit of Northern Ireland GDP consuming – on average – about 93% of the electricity consumed per unit of GDP in the UK as a whole. This is hardly surprising and it reflects the absence of energy intensive industries in Northern Ireland.

Northern Ireland's Electricity Supply industry can make its contribution to sustainable development and CO₂ reduction in a number of ways – generation efficiencies, fuel switching, combined heat and power, reducing transmission and distribution loss, renewables, mitigation by establishing carbon sink programmes and promoting efficient consumption internationally. At present there is no mechanism which links costs and prices with CO₂ reductions. There is the price problem and there is the CO₂ problem. Yet it is possible to link these two issues. Indeed, my view is that it is essential to link these two issues if all the potential CO₂ savings are to be made at least cost. In December 1998 Ofreg issued a consultation paper entitled Options for a Greener Energy Policy which dealt with some of the ways in which energy policy could be "greened."

¹Annual household consumption is based on total domestic electricity consumption (upgraded for transmission losses) and includes domestic customers on economy 7 tariffs. In 1997 in NI average electricity consumption for ordinary domestic tariff customers was 3,696 kWh. In the UK a typical domestic customer is assumed to consume 3,300 kWh p.a.

CO₂ Target

It is not the purpose of this paper to be prescriptive about possible targets. In 1990 – the internationally accepted CO₂ base year taken from the UNFCCC – the electricity supply industry in Northern Ireland produced 6m tonnes of CO₂. A 20% reduction implies a CO₂ emissions figure of 4.8m. This should be achievable. It implies that the CO₂ associated with the generation of a kilowatt hour of electricity should decline from 920 grammes in 1990 to 520 grammes in 2010 on the basis of NIE's current demand growth forecasts. This is a reduction of 400 grammes or 43%. By comparison the reduced emissions in Northern Ireland in 2001 which would flow from reduced electricity consumption because of the Climate Change Levy would be 14 grammes the equivalent of a 2% reduction. Moreover this 2% reduction is not even certain. It is entirely dependent on customers being able and willing to respond in the way in which policy makers hope they will but which they certainly cannot guarantee.

Faster demand growth would require either further improvements in the CO₂ coefficient or measures to reduce demand growth such as emphasis on CHP or energy efficiency measures.

NIE's Price Control

The price control on NIE's three price-controlled businesses – Power Procurement, Supply and Transmission and Distribution (T&D) – will be replaced by new price controls in April 2002. Work on the new price control will begin later this year.

NIE and OFREG have already started to explore the scope in the present price control for measures which incentivise the company to reduce CO₂ emissions. The means include an incentive to reduce transmission losses. The smaller the amount of electricity that "leaks" from the wires between power station and customer, the less electricity will need to be generated; losses have been reduced steadily.

Moreover, three-quarters of NIE's revenue for its T&D business is a fixed charge and this in practice removes any incentive for NIE to try to sell more electricity.

More recently NIE's Supply Business has been given an incentive to sell renewable electricity. This is 0.105p for each unit of electricity it sells under its "eco-energy" tariff. This tariff was only launched in the autumn of 1998, and while today it is the most successful "green" tariff in the UK, its impact on NIE's total business to date has been minor though with successful marketing it should grow.

NIE is also incentivised to sell energy efficiency. There is a loss of revenue to NIE Supply if less electricity is sold. However, when NIE causes the lost sale through persuading a customer to consume energy more efficiently, NIE receives 0.4p for each kilowatt hour of energy avoided above a certain target level. This arrangement is monitored and audited by the Energy Savings Trust. It is a pilot project and as the scheme has only been running for one year it has not yet had a chance to make a significant impact.

As NIE and OFREG approach the quinquennial price control review it is desirable that both parties and other interested bodies, such as consumer representatives and environmental organisations, have the opportunity of bringing forward ideas which would move the balance of incentive regulation some way towards providing a cost-effective service which rewards an improving CO₂ performance.

CO₂ and the Competitive Market

The electricity market opened on 1 July in Northern Ireland. By 2003 at least 35% of all the electricity traded in Northern Ireland will be bought by customers choosing their own supplier. At present, in addition to NIE as the Public Electricity Supplier (PES), there are eight Second Tier Suppliers (STSs) in Northern Ireland and there may be more in future.

None of these has an interest in increasing CO₂ production but each has an interest in increasing electricity sales. Competition for a market that is fixed in size would not increase electricity sales in total but it is possible that the competitive market could lead to increased sales of electricity if it succeeds, as is intended, in driving down electricity prices and attracting new industries to Northern Ireland. A coherent policy approach to the electricity supply



industry requires us to take steps to ensure that the competitive market does not and cannot lead to an increase in CO₂ emissions.

It is the case at present that the incentive to promote energy efficiency which is available to NIE's Supply Business is also available to all STSs though to date none have availed of it. To avoid competitive disadvantage, the incentive payment is collected through the T&D price control and does not therefore impact on the costs of the supply business which has gained the incentive reward.

Becoming the Solution

A key aspect of the liberalised market which we are trying to create is that it operates on the basis of anybody who has an interest being free to identify and develop an idea in the market place. This is a major cultural shift from the monopolistic, centrally planned, top down hierarchical approach to decision making which has previously been characteristic of electricity supply companies. By its very nature, it is going to be a more creative and fertile environment and should quickly produce a problem solving culture. It is this liberalised culture which also needs to be applied to CO₂ reductions. The proposals below are therefore about a framework in which the industry could contribute to the solving of the CO₂ problem. They are deliberately not intended to be specific proposals for CO₂ reductions.

CO₂ and ESCOs

Electricity suppliers can contribute to CO₂ reductions in two ways. The first is by reducing the amount of CO₂ released into the environment with every kilowatt hour of electricity produced. This reduction in the CO₂ electricity coefficient is quite compatible with an increasing consumption of electricity. As long as the coefficient improves at a faster rate than growth, total CO₂ emissions will fall.

The second way of reducing CO₂ emission is by ensuring that energy is used more efficiently. This may involve energy suppliers not merely delivering power to the meter but going beyond the meter and becoming involved in the way energy is used in the building and doing so by promoting energy efficient appliances and practices. This in effect means moving from being suppliers of an undifferentiated commodity called electricity to becoming "Energy Service Companies" (ESCOs) and having as strong a financial interest in the units of electricity whose consumption is avoided as in those units which are consumed. Over time this role is likely to become of increasing importance. A key question therefore for the regulatory system is – Can ways be found of using the regulatory framework to stimulate electricity suppliers to become ESCOs?

A CO₂ Strategy

One way in which, in the spirit of liberalisation, the most cost effective solutions might be encouraged would be if a licence obligation were imposed on NIE to produce a CO₂ reduction strategy for all aspects of energy generation and supply in Northern Ireland. This could be rolled forward annually with a report on the progress which had been made. It could include an obligation to hold an annual forum of all licence holders to discuss the report and its output could include recommendations to OFREG and DED about regulatory or statutory changes which should be introduced. A CO₂ reduction strategy could be a means of widening the industry's potential market, for example, through promoting the possible market for emission abatement advice or equipment, or even cars powered by renewable electricity – thereby "invading," in a CO₂ friendly way, the transport market. A CO₂ strategy of this sort developed by the industry would not be mandatory. Rather, its function would be culture changing and its principal contribution would be to ensure that the industry became an informed interlocutor and partner for Government in policy making.

Licence Obligations:

- (1) All supply companies could be given a licence obligation to supply electricity to a specified CO₂ coefficient which would be tightened over time. Under this proposal, the base year figure would be the average Northern Ireland figure and the improvements would be set in terms of five or ten year targets, with annual reporting on progress, though a basic licence breach would only have occurred if the periodic target figure had not been achieved. The periodic target would be set by OFREG and informed by published UK Policy targets. In this way STSs would have several years to ensure that the electricity they would be buying in, say, 2005 and 2010 would have a lower CO₂ coefficient than the electricity they bought in 1999 and could seek the most cost effective way of reaching their targets. CO₂ coefficient targets could be net, allowing for emission trading and offsets. While the CO₂ coefficient would be the same for all suppliers there would be nothing to prevent suppliers themselves trading both the electricity they had contracted to buy and CO₂ surpluses or deficits. This should therefore lead to CO₂ trading between suppliers within Northern Ireland. Schemes are currently being established in Great Britain to facilitate CO₂ emissions trading.

Potentially it provides renewable generators – and to a lesser extent CHP generators – with an enhanced value which could be captured by CO₂ trading and this could enable renewables to compete more effectively on price.

- (2) The above is in effect an "environmental purchasing obligation". It would therefore be appropriate to apply an environmental purchasing obligation on NIE's Power Procurement Business so that it would be obliged to purchase electricity in the most environmentally friendly way. To protect the company it would, however, be desirable that the Regulator should be satisfied that they would not thereby place themselves in breach of their economic purchasing obligation.

Conclusion and Comments

The electricity supply industry is in the firing line in the battle to reduce greenhouse gas emissions. It can, however, choose to fight a dogged rearguard action or it could take this situation as a new challenge to find the least costly ways of reducing CO₂ emission and perhaps expanding rather than contracting its business horizons.

If Northern Ireland's per capita consumption of electricity were to grow as a result of economic growth and rising personal incomes to average UK levels then our electricity consumption would be about 1750 gigawatt hours a year higher and, with our present electricity generation mix, CO₂ emissions would be 1.4m tonnes per annum higher. It could therefore be argued that through its relative impoverishment Northern Ireland was already contributing to the UK CO₂ reduction target.

Clearly CO₂ savings by impoverishment is not desirable. But it is not even necessary to contemplate it as a policy option since there are viable alternatives which can deliver reductions through the appropriate blend of regulatory and market mechanisms. Northern Ireland's Electricity Supply Industry's potential to make CO₂ savings is not in dispute – it is self-evident. The obligations and financial incentives to make those savings are currently curiously absent.

This paper seeks views on the general question: "How can the regulatory system be best harnessed to produce a least cost system for reducing CO₂ emissions?"



More specifically views are sought on the following questions:

- (a) Should NIE be given a licence obligation to produce an indicative CO₂ options strategy for the industry and convene an annual industry strategy options forum for the industry, government and consumers?
- (b) Should supply businesses have an average CO₂ coefficient objective prescribed well in advance?
- (c) Should it be the same for all supply licence holders i.e. an industry average, or should it vary from supplier to supplier?
- (d) Should it be net CO₂ or actual CO₂ ? i.e. should suppliers be allowed to compensate if they are not meeting the CO₂ target by reductions which they are instrumental in creating elsewhere by CO₂ sinks, offsets, emissions trading, flexibility mechanisms, reductions in consumption of other fuels etc?
- (e) In what ways can the balance of incentives on NIE's Transmission and Distribution business be changed to incentivise NIET&D business to reduce CO₂ emissions? Can this be done without having a damaging price impact?
- (f) Should NIE's Power Procurement Business economic purchasing obligation be complemented by an environmental purchasing condition provided this does not result in price increases?
- (g) Are there other changes to the regulatory system which would reduce CO₂ emissions? What would they cost?
- (h) Would the regulatory changes outlined in this paper be sufficient to simulate supply businesses to become ESCO?, If not what more should be done?
- (i) If there are costs associated with CO₂ reductions how should they be allocated between customers and the licence holders?

Comments on the views contained in this paper are sought from the industry and other interested parties and should be addressed to Alan Smith in OFREG by 30 September 1999.

Forward Work Plan and Topics for Consultation – 2000 – 2001

Issued by:

THE DIRECTOR GENERAL OF ELECTRICITY SUPPLY FOR NORTHERN IRELAND AND THE DIRECTOR GENERAL OF GAS FOR NORTHERN IRELAND

November 1999

Introduction

The Government's White Paper on Utility Regulation "A Fair Deal For Consumers" published in July 1998 indicated that regulators would be expected to consult on and publish their forward programmes. I published a forward programme in October 1998 containing my proposals for a 12 month period and as a result received comments from a range of individuals and organisations. All of these were useful and ensured that progression of the several strands of activity which had been outlined was prioritised and informed by the responses which I received. I now propose to roll the programme forward for a further period.

The proposals included in this programme arise from my statutory responsibilities under The Electricity and Gas Orders, the requirements in "A Fair Deal For Consumers" and other obligations such as those arising under the European Union's Internal Market in Electricity (IME) Directive and the Competition Act. In the period covered by the programme the possible emergence of a new Northern Ireland administration may require Ofreg to become involved in additional matters emanating from the regional administration.

I am supported in the discharge of my duties by the Office For the Regulation of Electricity and Gas (Ofreg) which is a non-ministerial Government Department staffed by Civil Servants.

Summary

The programme outlined in this paper comprises aspects of Ofreg's work commenced in previous years which is ongoing, and work which I propose Ofreg will commence during the period up to March 2001. Work programmes for the years following March 2001 will cover the 12 months period 1 April to 31 March synchronising forward planning in Ofreg with the requirements resulting from the changeover to resource accounting and budgeting.

Views on the relevance of this programme, the priorities which it reflects and whether there are other matters to which I should be devoting a higher priority are sought from the energy industry, customers and their representatives, district councils, elected representatives and public bodies.

Work Programme

In common with other organisations, Ofreg is engaged in a range of tasks which, while important, may be regarded as part of its day to day function year in and year out. The annual approval and monitoring of NIE's tariffs and revenues by the Economics section is one such task as is the protection afforded to customers through the Consumer Affairs Section in its dealing with customer complaints and queries.

Ofreg may also be required to react urgently to situations arising in the electricity or gas industries which fall into the "emergency" category. The chaos in the electricity supply system in recent winters as a result of storms created additional work in the short term as customers unable to contact NIE sought help, and in the longer term as Ofreg engaged with the company to consider how the impact of such events can be reduced and managed. This programme does not include these routine or emergency components of Ofreg's work but concentrates on work in areas of policy which are evolving, developing or emerging. The topics on which I would welcome comments as to their relevance and priority are:

Generation, Competition and Lower Prices

I received proposals during 1999 from the generators on the restructuring of their plants and contract amendments. I asked my consultants, London Economics, to examine the proposals to ensure they led to reductions in cost from the current contracts. The London Economics report was published in October. It indicated that the generators' proposals would pass an economic purchasing test. If the generators or NIE cannot come to an agreement I may either enforce an economic purchasing obligation or I may refer the parties to the Competition Commission or I may, next year, consider my new powers under the Competition Act to effect the necessary remedies.

It is a widespread misconception that the high cost of generation in Northern Ireland is attributable solely to the long term contracts. It is not the length of the contracts per se but the combination of the high cost of the contracts, the low efficiencies of the industry and the lack of a competitive trading system which is the cause of the high prices. Change must tackle all three issues. The generators' proposals tackle the first two directly and facilitate the third. Maximising the benefit of the proposals requires the support of the Government to legislate for structural changes to the industry.

I propose publishing a paper on the outcome of the contract negotiations and market opening before the end of the year.

Environmental Matters

Government has committed itself to reducing greenhouse gas emissions to 20% below their 1990 level by 2010. The electricity supply industry is increasingly expected to play its part in reducing such greenhouse gas emissions and promoting sustainable development policies. As the demand for energy increases, the application of new generation technology, the development of renewable energy sources and greater emphasis on energy efficiency must all become more fully integrated parts of a holistic energy policy. Ofreg has continued to be proactive in



formulating proposals for a continuing “greening” of the energy sector in Northern Ireland. During 1999 I published a consultation paper showing how the electricity sector could more fully meet the challenges of reducing emissions. Over the course of the next six months I intend to review licence obligations on all electricity suppliers with the objective of exploring the feasibility of inserting an environmental objective in order to pursue a comprehensive CO₂ reduction strategy. The work done by Ofreg has demonstrated that it is possible to both reduce energy costs and emissions.

T&D Price Controls

NIE's current price control runs until March 2002. Before the end of this year I intend to prepare for the next price control by taking steps to gather introductory information. I intend to write to NIE with a questionnaire outlining information requirements which will be needed to set the next control. Ofreg will undertake a detailed examination of information from the company, including an assessment of the regulatory asset base for the three regulated companies and the required cost of capital for the businesses. I will undertake a detailed appraisal of the capital and operating expenditure requirements of the company. From this assessment I intend to publish price control proposals in early 2001 in order to set the company a revenue stream which will allow it to finance its regulated activities and to share with customers the efficiency gains achieved since privatisation.

Supply Price Control

I propose publishing a discussion paper on options for Supply Price Control before the end of November. The paper will consider an alternative approach to Supply Price Control which would facilitate the development of a competitive market in Energy Services companies. This approach would complement and develop the work already done on “greening” Northern Ireland's electricity supply industry.

Market opening and customer choice

The IME Directive on Electricity requires Member States to progressively open up their markets to competition. The percentage of the market open to competition will rise from around 26% in 1999 to around 35% by 2003. On 1 July 1999 a trading system which allows “eligible customers” (larger users of electricity) direct access to generation commenced, enabling them to benefit from cheaper generation costs. Approximately 240 businesses in Northern Ireland are classed as “eligible customers” with initial market opening of 26%. To facilitate market opening, Ofreg and NIE initiated two auctions of 100 MW of surplus generation capacity previously contracted to NIE. This process has been carefully managed to ensure that the price reductions obtained to date in the competitive market have not created stranded costs which would put up prices for domestic customers.

The scope for greater competition will broaden as the market progressively opens to around 33% by 2003, and more customers of electricity are “eligible” to trade in the competitive market. The completion of the Scottish Interconnector will also allow eligible customers to trade with generators located outside Northern Ireland.

Ofreg will continue to monitor the operations of the competitive market to assess if the system is delivering on the anticipated benefits. During the year Ofreg will facilitate refinement of the current Interim Trading System and ensure compliance with the IME Directive's requirement for further market opening in February 2000 and beyond. Ofreg also intends to examine the options for market opening to a greater extent than required by the IME Directive.

Cross-border trading

The Republic of Ireland – which received a one year derogation on implementing the IME Directive – is scheduled for market opening in the year 2000. This provides the opportunity for cross-border trade through the North/South Interconnector. Currently there is no tariff

framework for cross-border transactions obliging customers to remain with local suppliers. Ofreg will explore the various methods for transmission charging and settlement to derive a suitable system which promotes trade.

Further Gas Licences

The gas section of the 1999 Forward Work Plan was dominated by the issue of extending the gas network beyond the Greater Belfast area. In last year's plan I committed to publishing a discussion paper on issuing further licences. In January 1999 the then Economy Minister, Adam Ingram, asked me to issue an invitation to interested parties to extend the current gas network. The proposed discussion paper was adapted and published, in February 1999, as an information paper to aid those interested in submitting licence applications. In response to the invitation five applications were received.

The applications are currently being considered against a background of uncertainty about strategy gas pipelines in the Irish Republic and the threat to gas expansion from the proposed Climate Change Levy. Where possible Ofreg will endeavour to contribute to the reduction of that uncertainty and I hope that the level of uncertainty diminishes sufficiently to enable licences to be issued.

Competition and Phoenix Price Controls

The current price controls on Phoenix's Conveyance revenue are up for revision at the end of 2001. The review process for the revision of Phoenix's allowed revenue will commence in the period covered by this Forward Work Plan. A Price Control on Phoenix's gas supply business can be established, after 2001, if I determine that competition from other fuels is insufficient to protect gas consumers. I may seek views from interested parties as to whether a Price Control on gas supply should be applied from 1st January 2001.

The year 2000 sees the phased start of gas to gas competition for the largest gas customers. In the period covered by this Forward Work Plan I intend to monitor the move towards competition and to deal promptly with obstacles which threaten to stall a successful transition.

Energy Efficiency and Fuel Poverty

One of my roles as Energy Regulator for Northern Ireland is to promote energy efficiency and in performing this duty to have regard to the disabled, those over pensionable age and those who may have difficulty in paying for electricity.

1998/9 saw the continuation of the £1 per customer programme which commenced in April 1997, funded through regulatory entitlement – effectively a levy collected from all electricity customers at the rate of £1 per customer per annum. To date this programme has saved £8m for 50,000 customers, many in the fuel poverty bracket, and has led to energy savings of around 132 million kilowatt hours over the lifetime of the measures introduced.

In June 1999 I issued a Consultation Paper – Energy Efficiency and Fuel Poverty, the purpose of which was to:

- set out the case for an energy levy in order to reduce overall energy bills, combat fuel poverty and reduce emissions;
- seek views on whether the levy at £1 on electricity customers should be increased to £2; and
- views on whether a similar levy should be collected from gas customers.

As a result of the consultation process I decided to raise the levy to £1.50 this year and to £2 from 2000 – 2001. I regard the levy as a valuable tool not just for investment in energy efficiency but with the additional payback of reducing the overall Northern Ireland energy bill and reducing greenhouse gas emissions. The paper referred to above on the Supply Price Control will examine the prospects for other measures to encourage energy efficiency in the domestic sector.



Social Action Plan

In recent months a series of consultation papers was published in Great Britain and Northern Ireland on matters connected with disadvantaged gas and electricity customers and the problem of fuel poverty. These included Ofgem's Social Action Plan Discussion and Framework documents, and in Northern Ireland, Ofreg's consultation paper on Energy Efficiency and Fuel Poverty. Several of the matters discussed were identified in Ofreg's Social Action Plans for Electricity and Gas Customers in Northern Ireland, published in 1998, and I plan to review progress on these Plans and publish a position paper in Autumn 2000.

New Legislation

In last year's Forward Work Plan I said that I would issue a discussion paper linking the need for new legislation with the outcome of negotiations regarding changes to generator contracts. This is still my intention but has been delayed until discussions on the generator contracts and related matters reach a conclusion. The need for legislation both for this and to deal with other regulatory matters will, at the appropriate time, become central to the work needed to develop a combined gas and electricity regulatory system with a clear focus on the public interest.

Code of Practice on Ofreg's Consultation Procedures

A draft Code of Practice describing Ofreg's consultation and decision making procedures was issued for consultation in November 1999. I am analysing responses received and expect to issue a definitive Code in the first half of 2000.

NIE Standards of Performance

New Guaranteed and Overall Standards of Performance agreed between Ofreg and NIE were introduced from 1 October 1999. Ofreg will monitor and report on these Standards and will commence a review of the Standards in April 2000, which will be part of the wider review of NIE's Price Control in conjunction with the company, the

Northern Ireland Consumer Committee for Electricity and consumers. It is expected that consumer opinion will be sought through a Market Research survey later in the year 2000.

Revenue Protection

The manner in which NIE discharges its Revenue Protection responsibilities has given me concern from time to time, and I have been asked by customers to make a number of determinations as a result. I welcome and support a pro-active policy to thwart electricity theft, but this must not be allowed to infringe customers' rights.

With this in mind I intend initiating a review of all Revenue Protection matters, including the adequacy of the existing clauses in the Electricity Order, with a view to producing a comprehensive policy statement in due course. It is also my intention to ask the NICCE to provide independent input into the latter.

Competition Act 1998

The new Competition Act, which replaces the Restrictive Trade Practices Act 1976 and the Resale Prices Act 1976 comes into operation from 1 March 2000. From this date as Energy Sector Regulator I will be responsible for enforcing the new Act concurrently with the Director General of Fair Trading in relation to electricity and gas matters in Northern Ireland. Ofreg staff have been trained and will be able to offer guidance and advice to undertakings. This legislation will give me additional powers to prevent any company in the energy sector from abusing a dominant position or acting anti-competitively. Ofreg will publish a paper on the implications of the Act for the energy sector in Northern Ireland in the spring of 2000.

Conclusions

The themes running through this Forward Work Plan for the year 2000, to the extent that they are developed, have the potential to make a significant impact on business and domestic users of electricity and natural gas in Northern Ireland.

Progress has been made but much more needs to be done to reduce electricity prices and give customers the benefits resulting from increased competition and choice. Consumer protection, energy efficiency, the environment and the expansion of the natural gas industry will remain priorities.

I welcome the opportunity provided by the publication of this Plan to invite comments from the energy industry, the business community, central and local government and consumer representatives on the priority, relevance and detail of the work I plan to undertake – or indeed whether they feel there are additional matters to which I should be directing my attention. Ofreg is committed to listening and taking into account the comments received and I look forward to receiving your contributions.

Your comments should be sent to:

Leslie Adams

OFREG

Brookmount Buildings

42 Fountain Street

Belfast BT1 5EE

to arrive no later than 21 January, 2000

Fax: 01232 – 311740

e-mail: ofreg@nics.gov.uk

Cross Border Trading in Electricity

A Consultation Paper issued by the Director General of Electricity Supply (Northern Ireland)

November 1999

Introduction

Europe's electricity sector is undergoing its biggest upheaval in the post-war period. On 19 February 1997 the EU Directive on electricity market liberalisation (the IME Directive) became law. The aim of the IME Directive is to make a major contribution to the completion of the single market by liberalising the market in electricity, and to encourage competition in the generation and supply of electricity. Member States are now required to progressively open their markets to competition, i.e. to give consumers of electricity the right to select from competing suppliers of electricity. The percentage of the Northern Ireland market that will be open to competition must rise from a minimum of 26% in 1999 to 33% by 2003.

The Northern Ireland electricity market already complies with the requirement of the Directive for 26% market opening. A trading system, which allows "eligible customers" (approximately 240 larger consumers of electricity) direct access to generation, has now been adopted. The Republic of Ireland received a one-year derogation from implementing the Directive. The market there is scheduled to open on 19 February 2000, when consumers of more than 4 gigawatt hours (Gwh) of electricity per year, representing about 28% of total demand in the Republic, will be eligible to choose a supplier other than the Electricity Supply Board.

When the electricity markets in both Northern Ireland and the Republic are open to competition, there will be increasing scope for the two parts of the island to benefit from cross-border trade, which would take place via the North/South electricity interconnector. An "eligible



customer” in Northern Ireland already has the legal right to buy from a supplier in the Republic and, from 19 February 2000, an “eligible customer” in the Republic will have the legal right to buy from a supplier in Northern Ireland.

Background and Progress to Date

The North/South interconnector was first commissioned in 1970 but was taken out of use after being damaged by terrorist activity in the 1970s. It was restored to service in 1995. Since then it has been used mainly for providing mutual support for the two electricity systems, but it has also been used for limited utility to utility trading. The interconnector currently has a theoretical available transfer capacity (ATC) of 300 MW, although not all of this is available for trading.

As the two markets are opened up in line with the IME Directive, suppliers other than Northern Ireland Electricity and the Electricity Supply Board would be expected to participate in cross border trades to an increasing extent. In the longer term, additional opportunities for trading between Scotland and the Republic would be expected on completion of the Moyle Interconnector. This would involve “wheeling” power from Scotland to the Republic across the Northern Ireland system and vice versa. Given these and other opportunities for increasing trade to take place, there may also be scope for strengthening the available transfer capacity of the present North/South interconnector and to develop further links.

In an effort to eliminate unjustified economic barriers to cross-border trade, the European Commission is encouraging European electricity sector regulators and transmission system operators (TSOs) to co-ordinate their actions and to develop an adequate system of cross-border tariffication. During the third meeting of the EU Regulators Forum in Florence in May 1999, it was agreed that the European TSOs would formulate concrete proposals for discussion at the fourth meeting of the Forum in November 1999. This process, however, is moving too slowly to facilitate

trading between Northern Ireland and the Republic next year. Discussion and debate must take place now, in Northern Ireland and the Republic of Ireland, so that agreement is reached before 19 February 2000 on the broad principles behind the promotion of trade and competition at least on an interim basis.

Interconnector trading is capable of facilitating the development of sophisticated market behaviour allowing trading transactions greatly in excess of physical limits on flows of electricity. I believe that for its first year it is sensible to keep the system as simple as possible so that the market participants can build up their experience and competencies.

I am publishing this consultation paper to set out the issues and to seek views on possible solutions. The Commission for Electricity Regulation in the Republic is publishing a similar paper. Once the consultation period is concluded and we have considered the responses, we will jointly put forward arrangements for cross border trading in 2000.

Issues for Discussion

While the right to trade across the North/South border already exists, there are two obstacles, which must be overcome if actual trading is to take place. The first is the absence of common rules for the use of the two transmission systems, which are necessary if suppliers are to compete on equal terms with each other for customers in each of the two parts of the island. The second is the absence of rules governing access to the interconnector so that trade can take place. If trade is to be facilitated next year, rules on access to the interconnector and for trading across it need to be developed and agreed now.

These two broad issues are discussed in turn below. It should be noted that as the deadline for cross border trade is February 2000, there is a need to address the most important issues first, so that regulations are in place for operation on 19 February. In this respect the initial procedures will be of an interim and simplified nature, but must be such that they are transparent and equitable. In this

context respondents should address the immediate issues first, and should refer to the Technical Annex of this paper for a wider discussion of the long term interconnector trade issues, and respond to those issues accordingly.

1. Harmonisation of transmission tariffs

Before trading across the interconnector (other than between NIE and the ESB) can take place, the issue of harmonisation of transmission tariffs on both sides of the interconnector must be considered.

This would mean that a customer in Northern Ireland should be indifferent between buying from a generator in Northern Ireland or from a generator in the Republic (and vice versa). Equally, a customer in the Republic should be indifferent between buying from a generator in the Republic or in Northern Ireland.

A number of options are available to prevent the “pancaking” or double charging of transmission costs, the simplest of which is an agreed rebate on transmission charges for interconnector trades in the interim period, to be honoured by the grid operators on both systems.

Views are sought on:

- an appropriate means of charging for transmission costs in cross border trades.

2. Access to interconnection

The capacity of the North/South interconnector is limited. Potential solutions for managing this finite capacity involve two related issues:

- a) The establishment of a method to determine the available transfer capacity on the interconnector;
- b) The establishment of a method for allocating the available transfer capacity on the interconnector.

a) Determining the Available Transfer Capacity

Views are sought on:

- how much of the total capacity of the interconnector should be reserved for the use by NIE and ESB for mutual assistance and support (i.e., spinning reserve);
- how information on the current and expected available transport capacity should be made accessible to market participants.

b) Options for allocating interconnector capacity

There are a number of possible ways in which the ATC on the interconnector might be allocated. In choosing between these possibilities, I am keen to ensure that the method meets certain criteria. In particular, I believe it should:

- be objective and non-discriminatory;
- be published and transparent for all market participants;
- promote competition in the generation and supply markets in Northern Ireland and the Republic and trade between them;
- enable sufficient competition, in the sense that one party should not be able to acquire a disproportionately large share of the available capacity for a long period;
- minimise the opportunities for gaming;
- be capable of being implemented in 2000.

Charging for use of the interconnector itself will depend on the way in which available capacity is allocated.

Consideration might therefore need to be given to deriving an appropriate charging basis for interconnection use.

The simplest basis would involve setting a gate charge for interconnection use. Settlement system rules would also have to be developed accordingly.



Views are sought on:

- the best method for allocating capacity on the interconnector.

Next Steps

With the advent of market opening across Europe there will be a sharp downward pressure on prices. In Northern Ireland and the Republic the potential is there to create a more competitive all-island market for electricity, with the resultant downward pressure on electricity prices, to ensure that a large price gap does not open up between electricity prices in Ireland and the continent. Such a price gap would be damaging for the economies of both Northern Ireland and the Republic of Ireland. The next step of the consultation process is to seek comments and views on the issues raised in this consultation paper:

More specifically views are invited on:

Short-Term Measures

- What interim arrangements are necessary to accommodate cross-border trade taking place from February 2000?
- How can the immediate problem of distorting trade across the interconnector be avoided?
- How should interconnector capacity be allocated?

Long Term Measures

There are also less pressing but ultimately more important longer term issues which are discussed in the Technical Annex. These give rise to the following questions:

- With the completion of the Moyle Interconnector, how can the increase in network costs in the Northern Ireland system be recouped as a result of “wheeling” power between Scotland and the Republic?
- In line with progressive market opening and the completion of the Moyle Interconnector, what settlement arrangements would need to be developed to accommodate new entrants into the North and South electricity markets?
- In the longer term, how should future interconnection projects (i.e., strengthening existing interconnection and developing new links) be financed?

Responses to questions (a), (b) and (c) must be received by 24 December 1999. Responses to questions (d), (e) and (f) and the points raised in the Technical Annex do not need to be received before 28 February 2000.

Comments on the views contained in this paper are sought from the industry and other interested parties and should be addressed to:

**Maggie McGibbon,
Ofreg, Brookmount Buildings,
42 Fountain St, Belfast BT1 5EE.**

Technical Annex

Areas for consideration in the period 2001 and beyond

This section develops the areas discussed in the document so far, and provides background analysis of issues which need not be addressed in order to implement an interim cross border trading system, but which respondents are invited to consider in the context of a fully developed interconnector trading system.

Transmission Pricing

There are three inter-related but distinct costs incurred in shifting electricity from a generator to a consumer across a transmission system. One is the energy lost as a result of resistance in the transmission lines. A second is the cost incurred in resolving network constraints to maintain voltage and frequency. These costs are marginal in the sense that they vary directly with the amount of energy being transported. The third type of cost is the cost of providing, maintaining and developing the network itself. This cost is generally invariant to the amount of energy being transmitted.

These costs are generally recovered in the form of three or four charges:

- connection charges, which recover the costs of particular assets required to connect generators and consumers to the high voltage network;
- so-called entry and exit charges, which recover the fixed costs associated with the transport of energy; and possibly
- a per kWh charge levied on the amount of energy transported, to recover the cost of losses and congestion¹.

¹In some systems, these costs are recovered through the spot market in electricity.

In a typical configuration Generators might pay an entry charge for access to the network and consumers pay an exit charge. Both entry and exit charges are typically non-marginal, in the sense that they are based on a measure of capacity or peak demand. Most cost-reflective network tariffs include a high proportion of capacity (kW) and fixed monthly and annual charges, rather than energy (kWh) charges.

Increased trading across the North/South interconnector is unlikely to increase the overall level of costs of transmission in the two jurisdictions. Indeed, it may even reduce it. So it is important that the structure of transmission tariffs in the Republic and Northern Ireland do not inhibit trading. This would be the case if either a generator (or a consumer) paid more in entry (exit) charges in exporting to (importing from) the other jurisdiction than it would if it supplied a customer in its own jurisdiction. In other words, to avoid distortions to trade, a generator in the Republic wishing to supply a customer in Northern Ireland must be treated in Northern Ireland as if he were a generator in Northern Ireland wishing to supply a customer there; and vice versa. Similarly, a consumer in the Republic wishing to buy from a generator in Northern Ireland must be treated the same as a customer in the Republic wishing to buy from a generator in the Republic.

An example might help. With harmonised tariffs, a customer in Northern Ireland buying from a generator in the Republic would then pay:

- a generation charge to the generator;
- one use of system charge for transmission across the wires in both Northern Ireland and the Republic;
- any charge for interconnection; and
- one exit charge.

To achieve this would require harmonising the relative components of these “entry” and “exit” charges in the two jurisdictions. At the moment, all the costs of the network in Northern Ireland are recovered through exit charges levied on the customer/distributor. Decisions have yet to be taken in the Republic on an appropriate split between entry and



exit charges. One possible harmonised weighting would be 25% entry and 75% exit, which is used in the England and Wales system.

The determination of available transfer capacity

The interconnector has, at present, a technically available transport capacity of 300 MW. However, not all the technically available capacity can be used for the physical movement of electricity across it in any one period. The available capacity will depend on a number of factors, including the particular configuration of load flows in the two transmission systems and the reserve requirements of the two TSOs for security of supply reasons.

The European TSOs have put forward a proposal for determining available transfer capacity on interconnectors². They propose that available transfer capacity (ATC) is determined as the total transfer capability less the transmission reliability margin less existing transmission commitments, where:

- the total transfer capability is the maximum capacity that can flow from one regulatory zone to another, taking account of the operational limits of the network (thermal, voltage and stability limits) and the uniform breakdown criterion^{3,4};
- the transmission reliability margin is a safety reserve to enable the consequence of changes in the network load or unit breakdowns to be partially absorbed by flows across the interconnector;
- existing transmission commitments are the demands placed on available capacity by existing contracts.

² International Exchanges of Electricity: Rules proposed by the European TSOs, 23 March 1999.

³ A regulatory zone is defined as a region within which a single TSO is responsible for electricity exchanges with other regulatory zones.

⁴ Under the uniform breakdown criterion, no breakdown in either transmission system, or in the interconnector, is allowed to lead to transmission problems at any time.

The TSOs note that the ATC can vary, depending on the time, direction of flow and the forecasting horizon. They argue that this limits the ability to offer guaranteed rights of access to and use of an interconnector.

It is important that whatever method is chosen, it should allow contractual flows in opposite directions across an interconnector to offset each other, such that there is a net increase in the capacity on the interconnector⁵.

Views of respondents are sought on:

- whether the European TSOs' methodology, as outlined above, is an appropriate one to adopt for the North/South interconnector;
- who should be responsible for determining the ATC;
- how far in advance it should be determined and how often it should be updated (e.g., a day ahead);
- how superimposition should be allowed for;
- whether existing contracts should be taken into account in determining the ATC;

⁵ This is often referred to as superimposition of counter-directed flows.

Capacity Allocation Methods

A distinction can be made between **transaction** and **non-transaction** based methods for allocating capacity.

The distinguishing features of **transaction based** methods is that the ATC is allocated on the basis of transactions contracted by market participants. Responsibility for managing the limited capacity of the interconnector is borne by market participants. Various transaction based methods are possible. They include allocating capacity:

- on a first-come, first-served basis;
- long before short, i.e., applications for transport capacity for long term contracts are honoured first. If any capacity is still left, it is allocated to spot applications;
- on a pro rata basis, in which applications are adjusted pro rata downwards if the sum of applications exceeds available capacity;
- by category, i.e., some for annual contracts, some for spot contracts;
- by merit order, i.e., the lowest priced contracts are allocated first. This method requires confidential information to be disclosed and may be more appropriate when selling into a mandatory electricity market, such as exists in England and Wales;
- by auction, under which market participants would pay the real market value of the available transport capacity. Conditions could be imposed on the auction. For example, some capacity could be auctioned once a year for annual contracts, with the remaining capacity auctioned a day ahead of trading for spot transactions. Or all available capacity could be auctioned on a day ahead basis.

Booking capacity for the interconnector can also be based on a number of alternatives, including:

- a firm basis, where customers are guaranteed capacity, except under certain circumstances, such as force majeure;
- a non-firm basis, where capacity is bid for on the understanding that it may not be available, and in such circumstances there is entitlement to compensation;

An advantage of transaction based methods of allocation is that market participants adjust their trading to the available capacity. A particular advantage of auctioning capacity is that it is allocated to the parties that value it most, i.e., those who would benefit most from using it. Disadvantages include the possibly high transactions costs of organising and reporting on auctions and the other transaction based methods. This may also slow down the contracting process.

Market parties may not actually use all the transport capacity that is allocated to them. One possibility is to implement a 'use it or lose it' principle, under which unused capacity is made available to the market again for short term or spot transactions.

In **non transaction based** methods of allocation, responsibility for resolving transport restrictions across the interconnector is borne by the TSOs or some other body such as an electricity exchange, and not by market participants. All transactions, in either direction, are executed, such that there is no need to allocate capacity. Three methods that TSOs can use to solve transport restrictions are re-despatch, counter-trading and market splitting.

Under **re-despatch**, the TSO instructs generators in the exporting jurisdiction to reduce output or users in the importing jurisdiction to reduce load. Generation in the importing jurisdiction would most likely also be instructed to increase output. This would require co-ordination between the TSOs in the Republic and Northern Ireland. It would also result in additional costs, which would have to be borne by someone.



A second way to resolve congestion on an interconnector is **counter-trading**. In this case, a TSO buys electricity and re-sells it in a way that ensures that the relevant flow runs counter to those which led in the first instance to the congestion on the interconnector. For example, if the unconstrained flow south into the Republic exceeds the available capacity on the interconnector, the TSO would need to buy additional power in the Republic and sell it in Northern Ireland. The price received will, by definition, be less than the price of electricity in the Republic. The losses on these transactions are the costs incurred by the TSO in resolving the constraint.

Non transaction based methods for resolving transport constraints on an interconnector do not require the measurement of available capacity or the allocation of that capacity. The TSO has responsibility for honouring all contracts. All parties are treated equally and all import and export contracts are honoured. But they do not provide an incentive for market participants to avoid congestion.

Views are sought on:

- whether non-transaction based methods are preferable to transaction based methods for resolving transport constraints;
- how the costs of re-despatch or counter-trading are recovered from market participants in the import-constrained area;
- how the TSOs might be incentivised to minimise the costs of re-despatch or counter-trading;
- how incentives to expand the capacity of the interconnector might be incorporated in the system;
- the compatibility of non transaction based measures with the existing (or proposed) trading and settlement systems in both Northern Ireland and the Republic.

Responsibility for Interconnector Capacity Allocation

Who should be responsible for allocating capacity on the interconnector? Should this fall to the two TSOs, who under

the terms of the IME Directive are charged with despatching functions? If so, how should they co-operate? Is there merit in appointing a separate entity to manage the interconnector? Who would regulate this entity?

Interconnector Capacity

It is technically possible to increase the interconnector's capacity to 600 MW within two or three years. Respondents may feel that a doubling in the size of the interconnector will effectively remove capacity constraints on its use. They may wish to qualify their answers where appropriate by whether they apply to the present 300 MW interconnector and if a different answer would apply to a 600 MW interconnector.

Views are sought on:

- how the TSOs (or a single operator) might be given incentives to increase the available capacity of the interconnector in the event of capacity shortages;
- whether a "use-it-or-lose" rule should be applied and, if so, how it might be implemented such that market participants have an incentive to release unused capacity with sufficient advance warning. For example, would the unused capacity be auctioned off? Would the proceeds go to the original holder of the rights?
- in the event that capacity is auctioned or otherwise sold off, what should happen to the receipts from the auction? Should they go to reduce transmission tariffs in the two jurisdictions? Or into a ring-fenced fund to pay for future expansions of interconnector capacity, as favoured by the European Commission?
- whether capacity should be allocated on a firm basis and, if so, what rules should apply in the event that available capacity falls short of allocated capacity on the day, e.g., because of unexpected maintenance work on the transmission networks either side of the interconnector or on the interconnector itself?

The Northern Ireland Electricity Supply Market and the Development of Competition

Progress Report for 1999/2000 and Prospects for 2000 – 2001

The European Directive

On 1st July 1999 the EU Directive: Internal Market in Electricity (IME) was implemented in Northern Ireland. This Directive has required a degree of restructuring of the electricity supply industry which was set up at vesting in 1992. Competitive markets are widely regarded as the best means of minimising prices to customers and it is for that reason the EU and Governments favour competition. Lower prices are however not an inevitable outcome of competitive markets. Obtaining this outcome requires the careful construction of the market and if necessary its careful supervision. Ofreg has sought to ensure that the IME Directive in Northern Ireland delivers real benefits to "eligible" customers in the form of lower prices without raising prices for franchise customers. Ofreg will continue to apply this double test to any further development.

The IME Directive has a number of important implications for Northern Ireland. It requires there to be a facility to allow direct trades between certain "eligible" customers and independent generators, it requires that the transmission system be placed under separate management from non-transmission activities, it sets regulations relating to the commissioning of new generation plant, it provides rules for the provision of separate accounting requirements and it requires there to be a transparent method of access to the system.

While the Northern Ireland system post privatisation provided for some of these, eg., the system access in Northern Ireland would already have qualified as it is "regulated third party access" which is compliant with the Directive, there was a wider need to restructure the industry to meet the new market conditions.

This restructuring was primarily needed to allow for trade to take place between eligible customers and independent generators. The 1992 model of trade in Northern Ireland allowed de jure supplier competition, but on such restrictive terms as to be meaningless. NIE Power Procurement (PPB) was established as a single buyer of electricity which it purchased under long term Power Purchase Agreements (PPAs) from generators. The PPB then set a Bulk Supply Tariff (BST) at which all supply companies (including NIE Supply) must purchase. This model clearly prevented the type of direct generator/customer trades which the Directive requires.

A Brave New World

The Directive has forced a change in thinking in electricity systems throughout Europe. While the competitive nature of some systems, most notably the England & Wales trading arrangements, meant that the Directive would impose little change, there are numerous other European systems which require substantial restructuring. The underlying logic in the implementation of the Directive is to promote competition both within and between member states, and through competition lead to a convergence of electricity prices across Europe. In the context of Northern Ireland being among the highest electricity price regions in Europe, the aim of the Directive is particularly important.

The aim however must be able to meet the reality of the existing situation and be implemented in a manner which delivers benefits to customers. In this respect the Directive is a means to an end rather than a solution in itself. The IME requires a staged market opening based on gross market consumption of 26%, 28% and 33% in 1999, 2000 and 2003 respectively. In 2003 a review process is due to begin, to culminate in 2006. These stages of market opening are minima and may be exceeded.



The Eligible Market

The European Commission has set a lower limit to which the market must open. It was thereafter up to the member states to apply this limit to their own systems in a manner of their own choosing within the framework of the Directive. In the Northern Ireland model the “Eligible Market” was defined as those customers, on a single-site basis, which made up the first 26% slice of the total supply market. This translates into the 250 largest customers in Northern Ireland. There were a number of practical considerations which led to this particular approach to market opening, and among them were the time and cost implications of implementing a trading system which would be necessary to allow the eligible market to operate.

The criteria which have been set to determine eligibility in the first phase of opening are that a single site customer must have a maximum demand of 1 MW and/or have a total annual consumption of 2500 MWh.

The Trading System

The Northern Ireland trading model is designed around bilateral contracts between customers and suppliers/ generators. These are commercial and unregulated agreements between business entities, outside the remit of the Director. The market itself is however regulated and it will continue to be so.

The electricity system which existed pre-July 1999 was based on a single buyer structure, with monopoly/ monopsony position in the electricity supply industry. All customers would ultimately, whoever their supplier, pay the Bulk Supply Tariff for their wholesale electricity cost. The separate NIE Transmission and Distribution business recovers a regulated Use of System charge to meet the price controlled “wires” costs.

The new trading arrangements require that eligible customers have the option to trade directly with Independent Power Producers (IPPs), either as or through licensed suppliers for their energy supplies. Therefore the single buyer structure as set up in 1992 is not compatible with the IME Directive under which generators may carry

out bilateral trades with suppliers who then negotiate deals with individual customers. It is also possible for an eligible customer to take out a supply licence and deal directly with generators but none have yet taken up the option.

Settlements

The nature of electricity systems is such that they must physically balance generation and demand in every half hour period. For this reason an electricity trading system requires a corresponding system for settling the financial effects of system imbalances which occur. The system depends upon customers’ aggregate expected demand for the day ahead and the corresponding “nominated” dispatch of generator plant to meet that expected demand being declared to the system operator who then dispatches the generating sets accordingly. If perfect prediction were possible then the system would be in balance, but as there is likely to be over/under consumption and over/under dispatch there needs to be a formal “Settlements” system in operation. This has been developed and implemented for the new market, and is currently being operated by the Transmission System Operator (TSO) under agreements with industry participants. The “Interim Settlement Code” and “The Interim Settlement Agreement” define the financial flows of settlements. If, for example, there is a requirement for a supplier to buy extra electricity to supply its customers’ unexpected demand (ie there is a need for “top-up”) the Supplier would buy the excess from NIE at the BST. If, conversely, the customers’ demand was less than expected, the excess would be purchased by NIE at an administered price (lower than BST to reflect the marginal value of energy to the system). Generators may also over or under dispatch their plant, and the top-up and spill implications of this are also included in the Settlement Code. To prevent suppliers and generators intentionally over or under nominating their trading there are tolerance error bands built into the rules, with more punitive penalties applying outside specified tolerance levels.

On the day before dispatch the system operator must receive final details for the next day’s trading. Prior to this “gate closure” IPPs may trade with each other in order to establish their joint best effective generation merit order; ie if one generator had more capacity than contracts for the following day it could sell its extra capacity to another generator if it were economic for both parties. This establishes a crude form of merit order among IPPs and as the market becomes more sophisticated should lead to the maximum utilisation of the least cost plant and the lowest possible sustainable price to customers.

This is symmetrical between the franchise market contracted generators and the eligible customer market so that there may be occasions when IPP output could be cheaper than the marginal (fuel) cost of the PPA plant, and the IPPs are entitled to submit a bid price to the system operator for dispatch over and above their nominated amount for the eligible market. This has the potential benefit of reducing the marginal cost to the non-eligible market.

The trading system which has been developed in Northern Ireland is intended to be efficient by ensuring that there is merit order dispatch and that the efficiencies of lower cost plant are captured through the competitive nature of the market by final customers. In preparation for further market opening next year mechanisms need to be put in place to ensure that this happens; if there were evidence that this was not happening further regulatory intervention would be necessary.

Market Development 1992 – 2000

The revised market structures were put in place by legislation which came into force on 1st July 1999. However, the major component missing was non-contracted generation capacity to serve the eligible market. Under existing conditions the bulk of the installed capacity on the Northern Ireland system is under long term PPA contract to NIE PPB who no longer needs all the capacity contracted to it. Therefore, in order to provide a stimulus to market development, part of the capacity under contract was made

available under auction to suppliers to sell on to the eligible market. This “Virtual IPP” capacity was released in two 100 MW tranches, coming into effect in August and September 1999. The capacity is intended to act in a manner similar to an IPP entering the market.

The auction process was via sealed bids for 1 MW blocks of capacity, made to Ofreg, and subject to a reserve price. The aim of setting a reserve price was to recover as much as possible of the cost of the capacity, which will still have to be paid for at full PPA rates. The auction reserves were set however to allow suppliers to bid with the aim of securing capacity at a rate which would allow resale to eligible customers at a level below the BST. Any shortfall in recovered revenues this year which PPB may incur will be passed on in next year’s BST. It is however intended to manage this process so as to avoid prices for franchise customers rising as a direct result of market opening.



Ofreg have sought feedback from the industry following the auction. Energia, the Viridian second tier supply arm, has obtained the largest share of the market and has indicated that it is offering its customers discounts as compared to the BST of between 5–15%. ESB, Premier Power and Powergen have also secured customers, although their market penetration has been of a much smaller degree. Their customers have also experienced reductions in the range of 5–15% against what they had previously been paying. There have also been cases outside this range.

It should be noted in passing that meeting the needs of eligible customers by the VIPP auction has avoided for suppliers a number of the complications normally associated with IPPs. In particular, STSs did not have to concern themselves with inter-generator trading to minimise generation costs. It was therefore only a partial trial of the trading system.

February 2000 – Further Market Opening

The IME Directive introduces competition in measured stages. The next phase of liberalisation comes into effect in February 2000, when the market is due to open to 28%. As in all stages of market opening this figure represents the minimum level at which the eligibility limit must be set, and the member states may widen the market further if they wish.

The Table below summarises the results of the two VIPP auctions.

	Bidders	Reserve Price	Highest Bid	Lowest Bid	Average Bid Price
1st Auction	Energia, Premier Power, ESB, Powergen	£5,000 per MW	£7,000 per MW	£5,100 per MW	£5,828.5 per MW
2nd Auction	Energia, ESB, Powergen	£6,000 per MW	£6,711 per MW	£6,005 per MW	£6,150 per MW

In principle, an opening beyond the minimum prescribed by the Directive is desirable so that all firms for whom energy is a major element in their costs can benefit from the competitive market. The speed and extent of opening will depend on the capacity of the settlement system to grow, the risk of stranded costs and the cost effectiveness of the next tranche of market opening. The decision on whether to limit market opening to the minimum level required by the Directive is therefore a matter of the practicality of moving further, or faster. The table above shows how many additional customers would become eligible for each additional opening.

It is my view that the market should be opened to 33% in 2000 thereby fully complying with the Directive three years early. I will be exploring with the industry the practicability of doing so.

Capacity for 2000/2001

The need for the VIPP in the market was due to the lack of generating capacity free to contract in the new market. It is a peculiarity of the Northern Ireland situation that there can simultaneously be a shortfall of uncontracted plant to service a new market (with the potential for earning unregulated profits), while there is a surplus of plant under the PPAs for which NIE PPB must pay a capacity charge regardless of the sent out energy. This inconsistency must be addressed fully if there is to be a viable wholesale electricity market developed without stranding costs.

In terms of physical planting options, there is currently one 60 MW oil-fired set out of contract at Coolkeeragh, although this has not yet been used in the market. Capacity for 2000 – 2001 could include 60MWs at Power Station West with Nigen taking one set out of contract early and extending the other set for a year. There should also be either one set (117MW) or two (234MW) available at Ballylumford. The North/South interconnector will be open for trading and any other generators in Northern Ireland such as Combined Heat and Power (CHP) plants and renewables are entitled to sell to eligible customers. The total amount of CHP and renewables – excluding NFFO – available by next year should be about 25MWs. A second auction of NIE capacity could make up any residual requirement in the eligible customer market. The extent of market opening will clearly have a bearing on this.

Capacity in 2001 – 2002

The capacity problem should by 2002 be capable of being met without recourse to VIPPs. Some existing – albeit old – plant will come out of contract and be free for a short time to compete. The CHP capacity will increase, though probably slowly, and by early 2002 the interconnector with Scotland is

% Market Opening (by consumption)	GWh	Number of customers
26%	1923	256
30%	2187	403
33%	2405	595
35%	2552	785
40%	2917	1621
45%	3281	3777

due to come into operation. This has 500MW capacity, of which 125 MW will be largely under contract to NIE PPB for 6 years with the remainder available for trade. Its terms of access and pricing will be addressed in the context of facilitating competitive electricity trades.

For the market to deliver lower prices to customers there must not just be capacity available, it must be also suitably priced. The underlying cost of generation is a crucial factor. The low efficiencies of present generation are at least as much the cause of the high cost of generation as the long term nature of the contracts. The generation contract re-negotiations and the opening of the market will impact on the marginal cost of electricity. These will impact through the trading mechanism on eligible customers' prices and drive down costs throughout the industry.

Neighbours

In 2000 the IME Directive will come into effect in the Irish Republic and the electricity market in Scotland is to be reformed to make it more competitive and transparent. Since Northern Ireland will be interconnected with both, the way in which both markets develop is of interest to customers in Northern Ireland. As it will be relatively cheap to fully interconnect Northern Ireland with the Irish Republic, developments in the Irish Republic are of particular interest. The Republic's trading system as currently proposed is very similar to the arrangements put in place in Northern Ireland and the compatibility of the two systems should facilitate cross-border trading.



A full review of the way in which electricity is traded in both parts of Ireland and also with Scotland will need to begin well before 2003 with a view to further improvements in the working of the competitive market. This review will coincide with the review of the workings of the IME Directive.

Next Steps

The following steps need to be taken immediately to facilitate orderly market development:

- (a) Transmission pricing for cross border trading and rules for interconnector access must be agreed. I propose publishing a consultation paper shortly on this.
- (a) Deciding on the extent of market opening. This will turn on an estimate of the risk of creating a short term “stranded cost” between now and 2003.
- (a) Resolving some of the questions which were highlighted by the first phase of market opening including the “single site” criteria.

Conclusion

The first stage in market opening has been modest but has been successfully accomplished. That required for 2000 – 2001 is more ambitious and will require the co-operation of all the industry and the agreement of the European Commission. Apart from ensuring that capacity is available it will be necessary to set the amount of system costs which must be secured and for which customers must pay under Public Service Obligations (PSOs) and System Security Obligations (SSOs). The establishment of an independent TSO will need to be progressed including setting out its full range of duties.

Both industry participants and customers will need to develop further their skills at operating in a competitive market and this might be assisted by seminars and industry working groups.

Ofreg, backed by the new powers available from next year under the Competition Act and the support of the European Commission, will continue to develop electricity markets which bring benefits to all electricity customers as well as new opportunities to enterprising companies.

Energy Efficiency, Fuel Poverty and the Supply Price Control

A CONSULTATION PAPER ISSUED BY THE OFFICE FOR THE REGULATION OF ELECTRICITY AND GAS

December 1999

Executive Summary

This paper is concerned with three interlocking themes – energy efficiency, electricity prices and fuel poverty. Its starting point is an assertion that the minimum amount of electricity which is central to a modern quality of life should be subject to different treatment to the electricity which is not required to provide an energy service and is therefore, in effect, consumed unnecessarily.

Accordingly, basic electricity requirements should be met as cheaply as possible. Energy efficiency should be encouraged by charging a higher price for marginal units of electricity. The fuel poor should be aided by special measures.

The Government has appointed the Northern Ireland Housing Executive (NIHE) as Northern Ireland's Home Energy Conservation Agency (HECA) and charged it with reducing the consumption of energy in the existing housing stock by 34%. The need for the policies of public agencies to be aligned so that they complement each other in meeting public policy targets is obvious. The proposals in this paper reflect an intention of achieving this sort of “joined up” approach to public policy by changing domestic tariffs in a way which will help the NIHE to achieve the Government's policy target while protecting low income customers.

NIE's Supply Business should be encouraged to sell energy services rather than increased volumes of electricity and incentivised to become an energy services company. This approach to electricity pricing, energy efficiency, fuel poverty and NIE's Supply Business price control leads logically to a commitment: to strive to ensure that customers in Northern Ireland who consume electricity efficiently have electricity bills which are at least as low as they would have in Great Britain for the same quality of energy service.

Energy Efficiency, Fuel Poverty and the Supply Price Control

Purpose of this paper

Measures already taken have ensured that Northern Ireland has the electricity price regime in the United Kingdom which most effectively encourages energy efficiency among all classes of domestic customers and facilitates Northern Ireland Electricity (NIE), and the voluntary and statutory bodies with which it works, in the delivery of energy efficiency measures. The purpose of this paper is to set out options for building on the experience to date and to accelerate the drive to deliver low cost energy services to all domestic customers in Northern Ireland and in particular to the fuel poor.

Introduction

High energy prices and household incomes which are below the UK average both increase the acuteness of fuel poverty and the effectiveness of energy efficiency measures in tackling it. Energy efficiency measures, as well as reducing energy bills, have the additional benefit of also reducing CO₂ and other emissions and thereby contribute to improving the environment.

By appointing NIHE as Northern Ireland's Home Energy Conservation Agency (HECA) the Government has made clear its commitment to reducing the amount of energy consumed by each house in Northern Ireland. The objective



of reducing consumption by 34% can only be achieved by an increase in the efficiency with which energy is used. As the Public Electricity Supplier NIE has a duty to assist in the achievement of this objective and indeed has already begun to develop a good partnership with NIHE.

The coincidence of a problem and an opportunity has been highlighted in successive Ofreg consultation papers. As a result of actions taken following public consultation the approach to energy efficiency has become increasingly sophisticated and a capability of delivering energy efficiency measures to all energy users but particularly the fuel poor has been progressively developed. In October I announced that the levy would be raised in stages to an average of £2 per customer and pegged at that level for the duration of the present price control. In addition there is a further energy efficiency incentive on NIE Supply Business to promote energy efficiency by all classes of customers. As a result of these incentives NIE achieved a 79 GWh saving last year. The number of GWhs of energy saved by NI electricity customers through energy efficiency levies is given in the table below.

	Target GWhs	Achieved GWhs
1997 – 1998	55	55
1998 – 1999	55	79
1999 – 2000	80	125*
2000 – 2001	110	160*

*estimated

This year NIE completed the second phase of tariff restructuring which enabled it to abolish the standing charge for 70% of domestic customers. The foregone revenue is recovered through the unit charge which links it directly to consumption. This has the effect of incentivising customers to reduce their consumption by taking cost effective energy

efficiency measures. Despite having the highest generation and T&D costs in the British Isles the 37,000 NIE domestic customers who consume low quantities of electricity (up to 1000 kw/hs per annum) pay less than they would anywhere in GB.

Economy Seven

This paper discusses changes which would affect the 561,000 domestic customers on the Standard Domestic Tariff. It does not affect the customers who are on Economy 7. Clearly similar principles could be developed for these customers, though on a less ambitious scale, except where Economy 7 households have opportunities to save electricity through insulation measures and in particular cavity wall insulation.

Philosophy

This paper is based on the assumption that there is a basic requirement common to all households to have access to a minimum amount of electricity in order to enjoy a reasonable quality of life. This minimum amount should therefore be provided at the lowest possible price. Secondly, there is an obligation on all electricity users not to damage the environment by wasting electricity. From this it follows that the consumption of electricity beyond that required by efficient appliances should be discouraged by price signals. Thirdly, it is recognised that while this approach will deliver lower fuel bills to the majority of low income households who are also low energy users and will deliver strong energy efficiency incentives to above average consumers of electricity, there is a minority of above average consumers who are both low income and unable to afford energy efficiency investments. This last category of consumers require special measures in both their own and society's interest in order to install energy efficiency appliances.

STRUCTURE OF THIS PAPER:

Part I – The Market Context

This paper is divided into three sections. The first section sets out the background against which this new approach to energy efficiency and fuel poverty is being considered. The second section deals with the tariff structure which would recognise customers' needs for electricity at as low a price as possible as a basic requirement for a decent quality of life while at the same time providing price signals to customers to use electricity efficiently. The third part deals with ensuring that NIE's Supply Business is incentivised to sell energy services rather than electricity and to persuade its customers to consume electricity more efficiently than – on average – they do at present. If electricity customers in Northern Ireland are to enjoy the lower electricity bills which are attainable through using energy efficient appliances then special forms of assistance will be required for those households who cannot afford to finance energy efficiency investments themselves. NIE must be allowed the resources to enable it to do this. Part III of this paper is therefore an alternative approach to a Price Control for the Supply Business.

Market Opening and Fuel Poverty

In Great Britain there is now full domestic competition which means that every domestic customer can both choose his or her electricity supplier and change supplier with 28 days' notice. By contrast in Northern Ireland, market opening is at present limited to 26% of the market. As required by the European Union's Internal Market in Electricity (IME) Directive this will grow to 35% of the market by 2003. Whether the market should be opened beyond 35% still has to be decided. Normal domestic customers, excluding Economy 7, represent about 85% of customers by number but only about 30% of total electricity consumption. Domestic customers therefore represent the last 30% by consumption. Opening the market by level of demand to

reach domestic customers would mean that market opening would have to move from 35% to 100%. In other words the requirement of the Directive would have to be greatly exceeded before standard domestic tariff consumers would be affected.

Domestic Competition

The case for full market opening in Northern Ireland will have to be considered. In theory, at present there is full competition insofar as any householder could choose to change supplier i.e. to buy electricity from a supplier other than NIE. This situation has pertained since privatisation. In practice, this has never had any effect for two reasons. The first is that the alternative supplier would have to buy electricity from NIE's Power Procurement Business and of course pay the same Use of System charges as NIE. Consequently about 96% of the cost of supply would be common to NIE Supply and any other supplier. Secondly, to measure the cost of the electricity consumed the customer would need half hourly metering as electricity is more expensive at some times of the day than at others. Half hourly metering is at present too expensive to be worth installing in a private house though metering costs should fall. An assumed profile of consumption for domestic customers has been the way this problem has been handled in GB. However, even if profiles were adopted there would still be a requirement for a system of settlements between generators and suppliers. For competition to deliver benefits the price reductions must exceed the additional cost of settlements. It is not clear at present whether this would be the case in Northern Ireland. With an undifferentiated product such as electricity it is questionable if customers would welcome higher prices as a worthwhile price to pay for the right to change suppliers. The case for full domestic competition must therefore rest on a thorough cost benefit analysis and such an analysis will in due course be carried out.

In Northern Ireland there is the additional complication of the Power Procurement Business's (PPB) long term contracts. If full domestic competition appeared as a result of the cost benefit analysis to be desirable any move to full domestic competition would have to take into account the risk and cost of stranding NIE's existing contracts. In other words if the capacity behind these contracts could not be sold on to suppliers at a price which covered the cost of the contracts this would create a stranded cost which would be recovered from either companies or customers. The consequent levy which customers might face would further negate any putative benefits of competition. One way of minimising any such risk would be to drive the cost of long term contracts down to as low a level as possible to ensure that in the event of full market opening the contracts would be competitive. However, the more successful the contracted capacity is in the market place the smaller would be the benefits from full competition as the existing contracts would be effectively delivering the lowest possible prices. **In other words, market opening with high cost contracts could create a stranded cost problem; with low cost contracts market opening would not deliver price reductions and might even lead to higher prices because of the additional cost of the settlement system.**

At this stage the most important point which must be registered is that while the costs and benefits of full domestic competition must be explored this is of much lower priority than opening the market to larger electricity customers where the benefits of competition are already evident and are not in dispute. The priority in market opening is to decide if market opening should be at a faster level than that prescribed by the IME Directive which envisages 35% market opening by 2003 with no further mandatory opening beyond 35% before 2006. The pace and extent of market opening will be explored over the coming months – taking into account events in both Scotland and the Irish Republic.

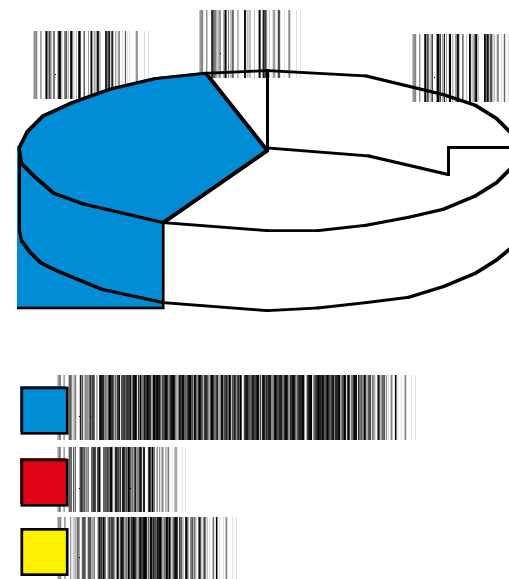
What is clear is that full domestic competition before 2005 is unlikely to be a practical proposition in Northern Ireland. Delivering immediate benefits to domestic customers must rely on other methods. It is some of these which are the subject of this paper:

Reducing Domestic Electricity Prices

There are four factors which affect the customer's electricity bill. These are:

- the cost of generation;
- the cost of transmission and distribution (T&D);
- the cost of supply;
- the efficiency with which electricity is used.

At present in Northern Ireland the share of each of these elements of the household bill is:



The amount which the householder must pay depends on the cost of these three elements and the total amount of electricity used. The cost of generation and of T&D will continue to come down in the years ahead. They are however outside the scope of this paper:

While Supply only accounts for 4% of the average electricity bill it has an importance out of all proportion to this because it is through the way in which Supply is delivered that there exists the greatest scope for ensuring that electricity is consumed efficiently. Both generation and T&D have no direct bearing on the efficiency with which electricity is used. **But one unit of electricity supplied to a customer can provide the same amount of light for 10 hours or 50 hours for exactly the same price depending on the type of light bulb used.** It is the customer who makes the key decision about the type of light bulb and it is the Supply Business that has an interest in helping the customer make that decision. The lightbulb example can be extended to most household appliances.

Effectively tackling fuel poverty, high electricity bills and reducing emissions all turn to a considerable extent on incentivising the Supply Business to sell, not electricity but efficient cost effective energy services.

Electricity – an essential service or a luxury?

There is a degree of ambivalence in much of the discussion about energy and climate change. Electricity is recognised universally as being essential for even a modest quality of life. But each unit of electricity consumed – if it is from a fossil fuel – adds to pollution. Consequently, there is a lack of clarity about the pricing policy of society for electricity. On the one hand, because it is essential, it should be priced as low as possible – and this has been the thrust of UK policy with regard to domestic customers. On the other hand, because it is polluting, it should be priced so as to discourage its usage and this is the view underlying the energy taxes applied to the non-domestic sector.

Both views are right. However, even if households improved the efficiency with which they used electricity by 30%, the average household consuming 3300Kw/hs per year, which is used for comparisons and benchmarking, would still require 2310Kw/hs per annum.

Part II – A Tariff Structured for Energy Efficiency

A tariff structure which charged a lower price for the essential units and a higher price for the units which are discretionary – that is which could be avoided by the adoption of energy efficiency measures – would incentivise customers to reduce their consumption. This is because it would shorten the payback on energy efficiency measures and give effect to the principle that the polluters i.e. the inefficient users of energy, pay for the environmental damage they do.

The Annex gives worked examples of how customers could benefit under these proposals. The figures used are illustrative, not prescriptive. It is the principle that is important rather than the specific figures which can be adjusted.

Objections to a two-tier tariff

There is no legal or administrative barrier to a two-tier tariff. NIE had a two-tier tariff last year for all domestic customers and for some domestic customers this year as it phased in the abolition of standing charges. These two-tier tariffs were however regressive in that it was the marginal units which were lower priced.

The objections which might be raised are that it would penalise poor customers who could not afford energy efficiency measures and, secondly that it is not in NIE's interest to discourage the consumption of electricity.

A third objection might be that it could be a barrier to full domestic competition. I do not regard this last point as a serious objection. Should it be decided to introduce full domestic competition then all suppliers would have to compete on identical terms. Those terms could include a requirement that there must be a specified percentage differential between the price at which the household basic requirement was sold i.e., a standard specified amount of say 2000kWhs, and the price at which subsequent units could be sold. Furthermore, full domestic competition is at best several years away.



The Fuel Poverty Objection

The problem of fuel poverty is more closely linked to the high cost of space and water heating than the electricity bill though clearly high electricity bills and inefficient electrical appliances are a factor.

A two-tier tariff structure would by itself be a major help to low income households with a low or average electricity consumption. Low income households are over-represented among customers with low levels of electricity usage. However, there may be low income households who would not be able to respond to the price signals to use electricity more efficiently. It is essential that such households should not be worse off as a result of a two-tier tariff structure. It is estimated that 170,000 customers in Northern Ireland might be regarded as fuel poor. According to figures collected by the Housing Executive from its tenants about their electricity bill, about 83% of tenants – other than those on Economy 7 who would not be affected by the proposals in this paper – should be better off under these proposals even before applying energy efficiency measures. As the illustrative figures in the Annex show, two thirds of all customers would be better off with a two tariff structure even without additional investment in energy efficiency and 94% of customers would be better off with only a 10% improvement in their energy efficiency. And with comprehensive energy efficiency measures all customers would be better off.

Part III – An Alternative Approach to a Supply Price Control

Incentivising the Supply Business

If energy bills are to fall through energy efficiency it requires a regulatory framework which incentivises NIE to deliver this kind of outcome. In the first instance this requires tackling the apparent contradiction between the desirability of consuming less electricity and the company's commercial interest in selling electricity.

At present the Supply Business has some incentive to save electricity in that it can claim 0.4p per KWh over and above the target funded from the energy efficiency levy. But its principal source of profits for its regulated business comes from its allowed 0.5% profit on turnover and the efficiencies with which it succeeds in reducing its costs below its allowed revenues. It also still has a residual interest in sales growth as a proportion of its revenue is sales related.

NIE's Supply Price Control was set in 1997 and it is due for review shortly with a new price control coming into effect in 2002. Market opening has the effect of taking some of the customers outside the scope of the price control and income in the eligible customer market is unregulated – on the assumption that it is secured by competing effectively in the market place. Income from other products such as renewable electricity and energy efficiency services including CHP are also not subject to price control on the same basis – i.e. that other companies are free to compete in those markets.

However, for the foreseeable future there will be a Supply Price Control for domestic customers. In the normal course of events it might be expected that the efficiency gains which the Supply company has made during the existing price control period would be passed back to customers in the form of lower prices and the profit allowance reset at 0.5% on turnover. Would this conventional approach be the most effective way of delivering benefit to customers and incentivising the company to do even better in the future?

The Supply Business performance

The Supply Business of NIE has delivered a good deal to its customers during the present price control period. The cost of Supply to the average NI customer has been significantly below the cost in England. In addition, the Supply Business has administered the energy efficiency scheme with flair and offered new products such as the "eco tariff". Shareholders have benefited too as efficiency gains have substantially exceeded expectations.

A conventional price control is one approach to the future. It would result in a one off price reduction for the average domestic customer of perhaps £2 per annum. The Supply Business's profits, if linked to turnover, would decline as both T&D costs and generation costs fall. The same percentage efficiency gains would not yield as significant profits as in the past and it must be doubtful if there is still scope for substantial efficiency gains. It is difficult to see this conventional approach leading to the innovation required to enable the company to tackle the interlinked topics of total fuel bills, fuel poverty and environmental emissions. It would severely limit the business's horizons and be a recipe for becoming a declining and demoralised business. This sort of future is bleak for both customers and shareholders.

An alternative approach to price control

An alternative approach would be to set out the objectives which the Supply Business should be expected to deliver and seek then to create the type of regulatory framework which enables it to meet its objectives for the mutual benefit of both customers and shareholders.

The Objectives

The objective of the Supply Business, in addition to those which it currently has, should be cross referenced to the objectives which Government has set the Northern Ireland Housing Executive as Northern Ireland's HECA. **The Supply Business should be incentivised – taking generation and T&D costs as given – to act in such a way as to ensure that**

the domestic sector's electricity bill falls, that household CO₂ emissions fall, and that household electricity consumption falls without any reduction in the standards of service customers have come to expect.

At present despite the improving efficiency of electrical appliances and smaller household sizes, the amount of electricity consumed per household in Northern Ireland continues to rise. The figures are given below in Table 2.

Table 2

Year	kWhs
1993	3640
1994	3639
1995	3746
1996	3804
1997	3696
1998	3769

The conclusion from Table 2 is that while there may be year on year fluctuations – which are mainly influenced by weather – there is a positive trend of year on year increases in household consumption. The 129 kWh per household increase over 6 years is equal to around 80 GWhs or 3% of domestic consumption – an average of about 0.5% per annum per household. While improving generation efficiency will reduce the CO₂ emissions per household it is only improved efficiency at the customers' side of the meter which can reduce total consumption.

But electricity demand in the domestic sector appears to be income elastic – that is it increases as incomes rise. Given rising incomes and the growing number of electrical appliances per household, the trend of increased consumption per household is likely to continue inexorably. Reducing electricity consumption in a society which is becoming richer, especially when electricity prices are falling



in real terms, requires a radical change in consumer culture. Such a change will not happen of its own accord; it could be brought about by ensuring that there was a strong champion for change. NIE Supply – properly incentivised – could become that champion for change.

Incentivising NIE's Supply Business to develop in this direction might include the following incentives:

- A price control with no revenue linkage to unit growth. If there are costs associated with unit growth this increases the incentive to avoid growth.
- A linkage with customer growth since this increases costs but is outside the company's control.
- An incentive to reduce average household consumption of power.
- An incentive to invest in energy efficiency and other measures which reduced customer costs.
- An incentive to reduce the CO₂ content of the average Kilowatt hour of electricity it sells.
- An incentive to remove the higher costs currently borne by customers on pre-payment meters.

In addition, the company would no doubt expect a minimum level of profit similar to the 0.5% on turnover linked to the price controlled market allowed in the present price control.

However, if NIE is to be incentivised to promote energy efficiency it is clear that there is a balance to be struck between the level of incentive and the ease with which the target can be achieved. If NIE's task is made easy or achievable at low risk and cost then the incentive should be calibrated accordingly. But the existence of an incentive is not a matter in respect of which customers should be indifferent. If it is desirable that NIE should be successful in reducing energy consumption then it is in the public interest to structure the price control in such a way as to improve the chances that NIE will be successful.

Financing Energy Efficiency for the Fuel Poor

The biggest obstacle which NIE faces in delivering energy efficiency measures – particularly to the fuel poor – is the financing cost. The benefits of these measures have to be sufficient to both repay the capital cost and cover the financing cost as well as providing NIE with the incentive to stimulate the activity. There may be 40,000 high consumers of electricity who could be regarded as fuel poor requiring an average saving of 400 units to be better off under a two tier tariff than at present. This implies a need for an investment in energy efficiency appliances of about £4–5 million. This should be affordable if NIE is allowed an appropriate incentive structure.

In order to facilitate NIE Supply becoming an effective energy efficiency company it might be possible to place the money which might otherwise be returned to customers in the form of a price reduction in 2002 into a fund which would be available to finance the energy efficiency measures carried out by NIE. The fund would be administered by some independent body such as the Energy Saving Trust and be accessible to other supply companies. However, unlike the money raised under the Energy Efficiency Levy the energy savings which this fund would facilitate would count towards NIE's incentive payments. In this way the efficiency gains which the company has made under the present price control would, in the period after 1 April 2002, provide benefits to both customers and shareholders. As the company would face a much reduced cost in delivering energy efficiency a lower or tapered incentive payment might be appropriate.

A Win-Win-Win Supply Price Control

If incentive regulation is to work to best effect then price controls have to operate in such a way as to provide a stable environment in which companies can make efficiency gains and consider it worthwhile to make the investments needed to secure efficiency gains. The longer the period in which companies can plan, the more likely they are to be able to realise efficiency gains.

If the Supply Price control is to become much more orientated towards incentivising the company to sell energy services and reduce costs for customers then the company should also have an incentive to reduce more conventional costs faced by customers.

As has already been noted, the Supply costs borne by domestic customers are small. There is however one exception and that is the cost borne by pre-payment meter customers. These customers, despite enjoying a small degree of cross-subsidy, pay £18 per annum more for electricity than customers with conventional meters. Pre-payment meter customers are not necessarily lower income households but a high percentage of those who have prepayment meters are low income households and may have difficulties in meeting their energy bills. It is socially undesirable to require the poorest households to pay more for their electricity. A "new look" Supply price control should incentivise NIE to deal with this issue.

The sort of changes in culture, with incentives to deliver low cost, environmentally clean energy services instead of low cost electricity, must be brought about by incremental change. These culture changes are taking place within NIE now but it would be a mistake to expect that further changes could or should take place suddenly on the coming into effect of a new price control in 2002.

If the key objective is to drive down electricity bills by consuming electricity efficiently, identifying the right incentives becomes more important than minimising the costs of the Supply business. It would therefore be possible for the existing price control to be continued beyond 2002 for a period of say three years until 2005 with no price drop in 2002 but with a price control which by increasing the X figure slightly would ensure that the Supply business's prices should not rise.

Such a price control could be a win for customers, a win for shareholders and a win for the environment.

How it would look to customers

The test of this sort of approach is how it would impact on individual customers.

A two tier tariff would mean that even with our present high – in comparison with GB – generation and T&D costs – customers who consumed less than 2000 units per year should be no worse off than customers in GB. Customers consuming more would have a return on energy efficiency appliances about 50% greater than in GB with resultant shorter pay back periods. It should be possible to set tariffs so that two-thirds of customers would be automatically better off than at present even before applying energy efficiency measures. Prepayment customers would enjoy even greater benefit from coming into line with non-prepayment customers.

However, to get a true comparison it is important to look behind the crude figure for electricity consumption at the quality of energy service – lighting, refrigeration, washing clothes and dishes etc – which the electricity supply facilitates. On the assumption that an average domestic customer's consumption of 3300 should be about 2640 if the household had efficient appliances, then the comparison is between the 3300 per annum standard GB customer and the 2640 energy efficient customer in Northern Ireland. A customer in Northern Ireland who used 2640 units efficiently would enjoy the same quality of light and power and refrigeration etc as a customer who used 3300 units with standard appliances. He or she would save over £40 per year compared to the current tariff structure. This would give an annual bill of £245.52¹ compared to £297 at present. Moreover, as the examples in the Annex show, with a tariff structure stimulating energy efficiency the opportunities exist to bring the average domestic electricity bill below GB even with generation and T&D costs significantly above GB levels.

¹ Assumes 2640 units at 8.55p instead of the present price of 9p and 660 units of electricity avoided at a cost of £19.80.



Customers who use large amounts of electricity but who refuse to invest in energy efficiency would not enjoy reduced electricity bills but that would be their choice. Facilities do exist to allow NIE to collect the cost of approved energy efficient appliances on the electricity bill including the bills of customers on pre-payment schemes. Moreover, customers who could not afford energy efficiency measures should be assisted by the increasing funds being made available for energy efficiency.

The Annex contains worked examples which show that only those who, in effect, volunteer to pay higher prices need be worse off. All customers will also benefit from falling generation costs and the new T&D price control in 2002.

The Risks

It might be objected that a dramatic fall in electricity demand of 20% would “strand” some costs in the system which would increase unit costs for all customers. A sense of proportion needs to be retained about this. A 20% reduction in domestic demand in one year is a degree of success which is unlikely to be achieved. But even if it were it would only represent about 6% of total demand and – given growth in customer numbers and economic growth – a net fall in demand of about 4%. It would also imply an investment in energy efficiency in one year by or on behalf of domestic customers of about £80m – as the entire cost of the energy efficiency investment which will deliver many years of benefit would have to be incurred at the beginning of the life of the investment. While success on this scale would be certainly welcome it is more likely to be achieved over a longer period. Ofreg has modelled change-over scenarios and does not consider that there is any risk of energy efficiency increasing electricity prices.

The opposite risk is that the approach outlined in this paper will not lead to a fall in demand, because neither customers nor NIE respond to the incentives to invest in energy efficiency. As NIE already shows, it does respond readily to incentives so the risk of no energy efficiency investment

taking place is, I believe, very small. But if this turned out to be an experiment that failed there is no long term contractual or financial commitment such as would be associated with a power station or a take or pay contract. This approach can be modified and improved if it works or we could easily revert to the present or another approach if it does not. It is a “no regrets” option.

Bringing it all together

The purpose of this paper has been to explore the scope for changes in both tariff structure and the way the Supply business is price controlled to see if fuel poverty – at least with regard to electricity – could be eliminated and the upward trend in electricity consumption per household be reversed thereby reducing both electricity bills and CO₂ emissions.

The elements in this strategy would include:

- the energy efficiency levy which is already in place;
- a two price tariff which could be introduced in 2000 incentivising all domestic customers to reduce their consumption of marginal units of electricity;
- increasing NIE Supply's incentives to sell energy efficiency and removing the incentive to sell more electricity. These incentives are partly in place but could be significantly enhanced in 2002 or earlier if the company agreed;
- placing, from 2002 onwards, an amount of money which would otherwise be passed on to customers by way of price reductions, into an energy efficiency fund;
- incentivising the company through an agreed rate of return to reduce costs for pre-payment customers; and
- allowing the present price control to continue with the above modifications until 2005 in order to improve the incentive to Supply to make efficiency gains.

Conclusion

Northern Ireland customers do not have to have the highest electricity bills in the European Union. Work is in hand to reduce the cost of generation and T&D. Domestic customers have seen their bills fall in real terms in recent years. In nominal terms the average domestic bill after VAT is now 17% less than in 1996/97 and in real terms 23% less.

With growing world wide pre-occupation with the emissions produced as a by-product from electricity generation there will be increasing pressure on all consumers to use energy more efficiently. The proposals in this paper would incentivise all domestic customers to use electricity more efficiently, incentivise NIE to sell energy services rather than raw energy and by reducing the premium on the Eco tariff – facilitate the growth in sales of renewable electricity.

The proposals in this paper do not purport to be the definitive statement on energy efficiency and fuel poverty. They are relatively unsophisticated and over time would require refinement and development. But they do at least point both energy suppliers and customers in the direction which sooner or later they will have to go. With growing pressure internationally to tackle the problems of green house gas emissions I would not be doing my duty to customers – and in particular to customers on low incomes – if I did not take steps now to enable domestic customers in Northern Ireland to switch early and painlessly to more efficient and cost-effective ways of using electricity.

The role of energy supply companies, and in particular NIE Supply, while it enjoys a de facto monopoly in the domestic market, must move from selling electricity to selling energy services including energy efficiency. Customers must be enabled without hassle to consume electricity in ways which minimise damage to the environment.

These proposals are not intended to be prescriptive. There may be other ways of achieving the same effect and I am ready to explore with NIE the merits of these or any other proposals the company or others may put forward to change the regulatory incentive structure to facilitate NIE's evolving into an energy services company.

I would wish to take into account the views of elected representatives and other interested parties, particularly those in the electricity supply industry, consumer interests and organisations concerned with fuel poverty and environmental protection.

Any comments should be forwarded to Seamus O'Hare by 24th January, 2000 at:

Ofreg
Brookmount Buildings
42 Fountain Street
Belfast BT1 5EE



Annex

This Annex is to show the impact which these proposals could have on domestic electricity bills for customers in Northern Ireland. It should be stressed that it is only one of a possible range of outcomes. It also shows how domestic electricity bills here would look compared to bills in GB. It should, however, be borne in mind that reductions averaging £25 for a typical domestic customer (3300 KW/hs per year) are expected to come into effect in GB in 2000.

The illustrative figures for the two-tier tariff for NIE which have been used are 8.55p for the first 2640 units of electricity and 9.75p for units thereafter. It is also assumed that the cost of avoiding a unit of consumption is 3p. (The cost of avoiding a unit is the cost of the additional expenditure required for the energy efficient appliance). The figure of 3p is somewhat pessimistic since the experience of the Energy Savings Trust would suggest that the cost should be about 2p.

The tables show that:

- for the same quantity of electricity, customers in Northern Ireland are paying £34m more than they would be in GB or £48m at next year's expected prices;
- the two-tier tariff approach by itself, even without energy efficiency, would result in lower prices for about two thirds of electricity customers in Northern Ireland;
- the achievable energy efficiency gains would result in lower electricity bills for all customers i.e. only those who volunteer to have higher bills need to have them;
- in the absence of an equivalent energy efficiency campaign in GB the total cost gap for customers as a whole would fall by £25m to £9m.

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It should be noted that the increased price gap with GB which is shown in Table 2 on the basis that there is no energy efficiency investment, would not actually occur as the Supply Business's price control limits the allowed revenue and an over-recovery in one year would be rebated to customers the following year.

TABLE 1: Comparison of present tariffs with GB tariffs

No of units consumed per annum	No of customers	Cumulative percentage in each category	Present NI Bill 1999/00	Average GB Bill 1999/00	Difference per Bill (£) (+ve value means is less expensive)	Difference per group (£)
			£	£	£	£
500	23000	4.0933	45.00	62.92	17.92	412083.33
1000	14000	6.5848	90.00	101.33	11.33	158666.67
1500	25000	11.0340	135.00	133.83	-1.17	-29166.67
2000	39000	17.9747	180.00	166.42	-13.58	-529750.00
2500	52000	27.2290	225.00	198.83	-26.17	-1360666.67
3000	62000	38.2630	270.00	231.24	-38.76	-2403120.00
3500	65000	49.8309	315.00	262.77	-52.23	-3395166.67
4000	60000	60.5090	360.00	294.27	-65.73	-3944000.00
4500	52000	69.7633	404.30	325.77	-78.53	-4083733.33
5000	43000	77.4159	444.80	357.27	-87.53	-3763933.33
5500	33000	83.2888	485.30	388.77	-96.53	-3185600.00
6000	25000	87.7380	525.80	420.27	-105.53	-2638333.33
6500	18000	90.9414	566.30	451.77	-114.53	-2061600.00
7000	13000	93.2550	606.80	483.27	-123.53	-1605933.33
7500	9000	94.8567	647.30	514.77	-132.53	-1192800.00
8000	7000	96.1025	687.80	546.27	-141.53	-990733.33
8500	4500	96.9034	728.30	577.77	-150.53	-677400.00
9000	3700	97.5618	768.80	609.27	-159.53	-590273.33
9500	2500	98.0068	809.30	640.77	-168.53	-421333.33
10000	2000	98.3627	849.80	672.27	-177.53	-355066.67
10500	1500	98.6296	890.30	703.77	-186.53	-279800.00
11000	1000	98.8076	930.80	735.27	-195.53	-195533.33
11500	1000	98.9856	971.30	766.77	-204.53	-204533.33
12000	750	99.1191	1011.80	798.27	-213.53	-160150.00
12500	750	99.2525	1052.30	829.77	-222.53	-166900.00
13000	750	99.3860	1092.80	861.27	-231.53	-173650.00
13500	500	99.4750	1133.30	892.77	-240.53	-120266.67
14000	400	99.5462	1173.80	924.27	-249.53	-99813.33
14500	400	99.6174	1214.30	955.77	-258.53	-103413.33
15000	300	99.6708	1254.80	987.27	-267.53	-80260.00
15500	300	99.7242	1295.30	1018.77	-276.53	-82960.00
16000	300	99.7775	1335.80	1050.27	-285.53	-85660.00
16500	250	99.8220	1376.30	1081.77	-294.53	-73633.33
17000	200	99.8576	1416.80	1113.27	-303.53	-60706.67
17500	200	99.8932	1457.30	1144.77	-312.53	-62506.67
18000	200	99.9288	1497.80	1176.27	-321.53	-64306.67
18500	100	99.9466	1538.30	1207.77	-330.53	-33053.33
19000	100	99.9644	1578.80	1239.27	-339.53	-33953.33
19500	100	99.9822	1619.30	1270.77	-348.53	-34853.33
20000	100	100.0000	1659.80	1302.27	-357.53	-35753.33
						-34809566.67
Extra currently paid by all NI domestic customers is £34,809,566						



TABLE 2: Comparison of possible two tier tariffs (2TT), and GB tariffs

No of units consumed per annum	No of customers	Cumulative percentage in each category	New NI EE tariff (1.0)	Average GB Bill 1999/00	Difference per Bill (£) (+ve value means is less expensive)	Difference per group (£)
			£	£	£	£
500	23000	4.0933	42.75	62.92	20.17	-463833.33
1000	14000	6.5848	85.50	101.33	15.83	-221666.67
1500	25000	11.0340	128.25	133.83	5.58	-139583.33
2000	39000	17.9747	171.00	166.42	-4.58	-178750.00
2500	52000	27.2290	213.75	198.83	-14.92	-775666.67
3000	62000	38.2630	260.82	231.24	-29.58	-1833960.00
3500	65000	49.8309	309.57	262.77	-46.80	-3042216.67
4000	60000	60.5090	358.32	294.27	-64.05	-3843200.00
4500	52000	69.7633	407.07	325.77	-81.30	-4227773.33
5000	43000	77.4159	455.82	357.27	-98.55	-4237793.33
5500	33000	83.2888	504.57	388.77	-115.80	-3821510.00
6000	25000	87.7380	553.32	420.27	-133.05	-3326333.33
6500	18000	90.9414	602.07	451.77	-150.30	-2705460.00
7000	13000	93.2550	650.82	483.27	-167.55	-2178193.33
7500	9000	94.8567	699.57	514.77	-184.80	-1663230.00
8000	7000	96.1025	748.32	546.27	-202.05	-1414373.33
8500	4500	96.9034	797.07	577.77	-219.30	-986865.00
9000	3700	97.5618	845.82	609.27	-236.55	-875247.33
9500	2500	98.0068	894.57	640.77	-253.80	-634508.33
10000	2000	98.3627	943.32	672.27	-271.05	-542106.67
10500	1500	98.6296	992.07	703.77	-288.30	-432455.00
11000	1000	98.8076	1040.82	735.27	-305.55	-305553.33
11500	1000	98.9856	1089.57	766.77	-322.80	-322803.33
12000	750	99.1191	1138.32	798.27	-340.05	-255040.00
12500	750	99.2525	1187.07	829.77	-357.30	-267977.50
13000	750	99.3860	1235.82	861.27	-374.55	-280915.00
13500	500	99.4750	1284.57	892.77	-391.80	-195901.67
14000	400	99.5462	1333.32	924.27	-409.05	-163621.33
14500	400	99.6174	1382.07	955.77	-426.30	-170521.33
15000	300	99.6708	1430.82	987.27	-443.55	-133066.00
15500	300	99.7242	1479.57	1018.77	-460.80	-138241.00
16000	300	99.7775	1528.32	1050.27	-478.05	-143416.00
16500	250	99.8220	1577.07	1081.77	-495.30	-123825.83
17000	200	99.8576	1625.82	1113.27	-512.55	-102510.67
17500	200	99.8932	1674.57	1144.77	-529.80	-105960.67
18000	200	99.9288	1723.32	1176.27	-547.05	-109410.67
18500	100	99.9466	1772.07	1207.77	-564.30	-56430.33
19000	100	99.9644	1820.82	1239.27	-581.55	-58155.33
19500	100	99.9822	1869.57	1270.77	-598.80	-59880.33
20000	100	100.0000	1918.32	1302.27	-616.05	-61605.33
	561900					-38949394.67
Extra paid by all NI domestic customers compared to GB would be £38,949,394						



TABLE 3: Comparison of 2TT with 10% energy efficiency, and GB tariffs

No of units consumed per annum	No of customers	Cumulative percentage in each category	New NI EE tariff (0.9)	Average GB Bill 1999/00	Difference per Bill (£) (+ve value means is less expensive)	Difference per group (£)
			£	£	£	£
500	23000	4.0933	39.98	62.92	22.94	-527658.33
1000	14000	6.5848	79.95	101.33	21.38	-299366.67
1500	25000	11.0340	119.93	133.83	13.91	-347708.33
2000	39000	17.9747	159.90	166.42	6.52	-254150.00
2500	52000	27.2290	199.88	198.83	-1.04	-54166.67
3000	62000	38.2630	239.85	231.24	-8.61	-533820.00
3500	65000	49.8309	285.95	262.77	-23.18	-1506591.67
4000	60000	60.5090	331.32	294.27	-37.05	-2223200.00
4500	52000	69.7633	376.70	325.77	-50.93	-2648273.33
5000	43000	77.4159	422.07	357.27	-64.80	-2786543.33
5500	33000	83.2888	467.45	388.77	-78.68	-2596385.00
6000	25000	87.7380	512.82	420.27	-92.55	-2313833.33
6500	18000	90.9414	558.20	451.77	-106.43	-1915710.00
7000	13000	93.2550	603.57	483.27	-120.30	-1563943.33
7500	9000	94.8567	648.95	514.77	-134.18	-1207605.00
8000	7000	96.1025	694.32	546.27	-148.05	-1036373.33
8500	4500	96.9034	739.70	577.77	-161.93	-728677.50
9000	3700	97.5618	785.07	609.27	-175.80	-650472.33
9500	2500	98.0068	830.45	640.77	-189.68	-474195.83
10000	2000	98.3627	875.82	672.27	-203.55	-407106.67
10500	1500	98.6296	921.20	703.77	-217.43	-326142.50
11000	1000	98.8076	966.57	735.27	-231.30	-231303.33
11500	1000	98.9856	1011.95	766.77	-245.18	-245178.33
12000	750	99.1191	1057.32	798.27	-259.05	-194290.00
12500	750	99.2525	1102.70	829.77	-272.93	-204696.25
13000	750	99.3860	1148.07	861.27	-286.80	-215102.50
13500	500	99.4750	1193.45	892.77	-300.68	-150339.17
14000	400	99.5462	1238.82	924.27	-314.55	-125821.33
14500	400	99.6174	1284.20	955.77	-328.43	-131371.33
15000	300	99.6708	1329.57	987.27	-342.30	-102691.00
15500	300	99.7242	1374.95	1018.77	-356.18	-106853.50
16000	300	99.7775	1420.32	1050.27	-370.05	-111016.00
16500	250	99.8220	1465.70	1081.77	-383.93	-95982.08
17000	200	99.8576	1511.07	1113.27	-397.80	-79560.67
17500	200	99.8932	1556.45	1144.77	-411.68	-82335.67
18000	200	99.9288	1601.82	1176.27	-425.55	-85110.67
18500	100	99.9466	1647.20	1207.77	-439.43	-43942.83
19000	100	99.9644	1692.57	1239.27	-453.30	-45330.33
19500	100	99.9822	1737.95	1270.77	-467.18	-46717.83
20000	100	100.0000	1783.32	1302.27	-481.05	-48105.33
	561900					-23889904.67
Extra paid by all NI domestic customers compared to GB would be £23,889,904						



TABLE 4: Comparison of 2TT with 20% energy efficiency, and GB tariffs

No of units consumed per annum	No of customers	Cumulative percentage in each category	Present EE tariff (0.8)	Average GB Bill 1999/00	Difference per Bill (£) (+ve value means is less expensive)	Difference per group (£)
			£	£	£	£
500	23000	4.0933	37.20	62.92	25.72	591,483.33
1000	14000	6.5848	74.40	101.33	26.93	377,066.67
1500	25000	11.0340	111.60	133.83	22.23	555,833.33
2000	39000	17.9747	148.80	166.42	17.62	687,050.00
2500	52000	27.2290	186.00	198.83	12.83	667,333.33
3000	62000	38.2630	223.20	231.24	8.04	498,480.00
3500	65000	49.8309	262.32	262.77	0.45	29,033.33
4000	60000	60.5090	304.32	294.27	-10.05	-603,200.00
4500	52000	69.7633	346.32	325.77	-20.55	-1,068,773.33
5000	43000	77.4159	388.32	357.27	-31.05	-1,335,293.33
5500	33000	83.2888	430.32	388.77	-41.55	-1,371,260.00
6000	25000	87.7380	472.32	420.27	-52.05	-1,301,333.33
6500	18000	90.9414	514.32	451.77	-62.55	-1,125,960.00
7000	13000	93.2550	556.32	483.27	-73.05	-949,693.33
7500	9000	94.8567	598.32	514.77	-83.55	-751,980.00
8000	7000	96.1025	640.32	546.27	-94.05	-658,373.33
8500	4500	96.9034	682.32	577.77	-104.55	-470,490.00
9000	3700	97.5618	724.32	609.27	-115.05	-425,697.33
9500	2500	98.0068	766.32	640.77	-125.55	-313,883.33
10000	2000	98.3627	808.32	672.27	-136.05	-272,106.67
10500	1500	98.6296	850.32	703.77	-146.55	-219,830.00
11000	1000	98.8076	892.32	735.27	-157.05	-157,053.33
11500	1000	98.9856	934.32	766.77	-167.55	-167,553.33
12000	750	99.1191	976.32	798.27	-178.05	-133,540.00
12500	750	99.2525	1,018.32	829.77	-188.55	141,415.00
13000	750	99.3860	1,060.32	861.27	-199.05	-149,290.00
13500	500	99.4750	1,102.32	892.77	-209.55	-104,776.67
14000	400	99.5462	1,144.32	924.27	-220.05	-88,021.33
14500	400	99.6174	1,186.32	955.77	-230.55	-92,221.33
15000	300	99.6708	1,228.32	987.27	-241.05	-72,316.00
15500	300	99.7242	1,270.32	1,018.77	-251.55	-75,466.00
16000	300	99.7775	1,312.32	1,050.27	-262.05	-78,616.00
16500	250	99.8220	1,354.32	1,081.77	-272.55	-68,138.33
17000	200	99.8576	1,396.32	1,113.27	-283.05	-56,610.67
17500	200	99.8932	1,438.32	1,144.77	-293.55	-58,710.67
18000	200	99.9288	1,480.32	1,176.27	-304.05	-60,810.67
18500	100	99.9466	1,522.32	1,207.77	-314.55	-31,455.33
19000	100	99.9644	1,564.32	1,239.27	-325.05	-32,505.33
19500	100	99.9822	1,606.32	1,270.77	-335.55	-33,555.33
20000	100	100.0000	1,648.32	1,302.27	-346.05	-34,605.33
	561900					-9,098,254.67



TABLE 5: Comparison of GB and NI tariff options

No of units consumed per annum	No of customers	Cumulative percentage in each category	Present tariff	New tariff (1.0)	New EE tariff (0.8)	New EE tariff (0.9)	GB Bill
			£	£	£		£
500	23000	4.0933	45.00	42.75	37.20	39.98	62.92
1000	14000	6.5848	90.00	85.50	74.40	79.95	101.33
1500	25000	11.0340	135.00	128.25	111.60	119.93	133.83
2000	39000	17.9747	180.00	171.00	148.80	159.90	166.42
2500	52000	27.2290	225.00	213.75	186.00	199.88	198.83
3000	62000	38.2630	270.00	260.82	223.20	239.85	231.24
3500	65000	49.8309	315.00	309.57	262.32	285.95	262.77
4000	60000	60.5090	360.00	358.32	304.32	331.32	294.27
4500	52000	69.7633	404.30	407.07	346.32	376.70	325.77
5000	43000	77.4159	444.80	455.82	388.32	422.07	357.27
5500	33000	83.2888	485.30	504.57	430.32	467.45	388.77
6000	25000	87.7380	525.80	553.32	472.32	512.82	420.27
6500	18000	90.9414	566.30	602.07	514.32	558.20	451.77
7000	13000	93.2550	606.80	650.82	556.32	603.57	483.27
7500	9000	94.8567	647.30	699.57	598.32	648.95	514.77
8000	7000	96.1025	687.80	748.32	640.32	694.32	546.27
8500	4500	96.9034	728.30	797.07	682.32	739.70	577.77
9000	3700	97.5618	768.80	845.82	724.32	785.07	609.27
9500	2500	98.0068	809.30	894.57	766.32	830.45	640.77
10000	2000	98.3627	849.80	943.32	808.32	875.82	672.27
10500	1500	98.6296	890.30	992.07	850.32	921.20	703.77
11000	1000	98.8076	930.80	1,040.82	892.32	966.57	735.27
11500	1000	98.9856	971.30	1,089.57	934.32	1,011.95	766.77
12000	750	99.1191	1,011.80	1,138.32	976.32	1,057.32	798.27
12500	750	99.2525	1,052.30	1,187.07	1,018.32	1,102.70	829.77
13000	750	99.3860	1,092.80	1,235.82	1,060.32	1,148.07	861.27
13500	500	99.4750	1,133.30	1,284.57	1,102.32	1,193.45	892.77
14000	400	99.5462	1,173.80	1,333.32	1,144.32	1,238.82	924.27
14500	400	99.6174	1,214.30	1,382.07	1,186.32	1,284.20	955.77
15000	300	99.6708	1,254.80	1,430.82	1,228.32	1,329.57	987.27
15500	300	99.7242	1,295.30	1,479.57	1,270.32	1,374.95	1,018.77
16000	300	99.7775	1,335.80	1,528.32	1,312.32	1,420.32	1,050.27
16500	250	99.8220	1,376.30	1,577.07	1,354.32	1,465.70	1,081.77
17000	200	99.8576	1,416.80	1,625.82	1,396.32	1,511.07	1,113.27
17500	200	99.8932	1,457.30	1,674.57	1,438.32	1,556.45	1,144.77
18000	200	99.9288	1,497.80	1,723.32	1,480.32	1,601.82	1,176.27
18500	100	99.9466	1,538.30	1,772.07	1,522.32	1,647.20	1,207.77
19000	100	99.9644	1,578.80	1,820.82	1,564.32	1,692.57	1,239.27
19500	100	99.9822	1,619.30	1,869.57	1,606.32	1,737.95	1,270.77
20000	100	100.0000	1,659.80	1,918.32	1,648.32	1,783.32	1,302.27



TABLE 6: Comparison of present NI tariff with 2TT tariff

No of units consumed per annum	No of customers	Cumulative percentage in each category	Present NI EE tariff (1.0)	Present NI Bill 1999/00	Difference per Bill (£) (+ve value means NI EE is less expensive than the current bill)	Difference per group (£)
			£	£	£	£
500	23000	4.0933	42.75	45.00	2.25	51750.00
1000	14000	6.5848	85.50	90.00	4.50	63000.00
1500	25000	11.0340	128.25	135.00	6.75	168750.00
2000	39000	17.9747	171.00	180.00	9.00	351000.00
2500	52000	27.2290	213.75	225.00	11.25	585000.00
3000	62000	38.2630	260.82	270.00	9.18	569160.00
3500	65000	49.8309	309.57	315.00	5.43	352950.00
4000	60000	60.5090	358.32	360.00	1.68	100800.00
4500	52000	69.7633	407.07	404.30	-2.77	-144040.00
5000	43000	77.4159	455.82	444.80	-11.02	-473860.00
5500	33000	83.2888	504.57	485.30	-19.27	-635910.00
6000	25000	87.7380	553.32	525.80	-27.52	-688000.00
6500	18000	90.9414	602.07	566.30	-35.77	-643860.00
7000	13000	93.2550	650.82	606.80	-44.02	-572260.00
7500	9000	94.8567	699.57	647.30	-52.27	-470430.00
8000	7000	96.1025	748.32	687.80	-60.52	-423640.00
8500	4500	96.9034	797.07	728.30	-68.77	-309465.00
9000	3700	97.5618	845.82	768.80	-77.02	-284974.00
9500	2500	98.0068	894.57	809.30	-85.27	-213175.00
10000	2000	98.3627	943.32	849.80	-93.52	-187040.00
10500	1500	98.6296	992.07	890.30	-101.77	-152655.00
11000	1000	98.8076	1040.82	930.80	-110.02	-110020.00
11500	1000	98.9856	1089.57	971.30	-118.27	-118270.00
12000	750	99.1191	1138.32	1011.80	-126.52	-94890.00
12500	750	99.2525	1187.07	1052.30	-134.77	-101077.50
13000	750	99.3860	1235.82	1092.80	-143.02	-107265.00
13500	500	99.4750	1284.57	1133.30	-151.27	-75635.00
14000	400	99.5462	1333.32	1173.80	-159.52	-63808.00
14500	400	99.6174	1382.07	1214.30	-167.77	-67108.00
15000	300	99.6708	1430.82	1254.80	-176.02	-52806.00
15500	300	99.7242	1479.57	1295.30	-184.27	-55281.00
16000	300	99.7775	1528.32	1335.80	-192.52	-57756.00
16500	250	99.8220	1577.07	1376.30	-200.77	-50192.50
17000	200	99.8576	1625.82	1416.80	-209.02	-41804.00
17500	200	99.8932	1674.57	1457.30	-217.27	-43454.00
18000	200	99.9288	1723.32	1497.80	-225.52	-45104.00
18500	100	99.9466	1772.07	1538.30	-233.77	-23377.00
19000	100	99.9644	1820.82	1578.80	-242.02	-24202.00
19500	100	99.9822	1869.57	1619.30	-250.27	-25027.00
20000	100	100.0000	1918.32	1659.80	-258.52	-25852.00
561900						-4139828.00
Benefits (Costs) of the new EE tariffs compared to the current tariff would be (£4,139,828).						



TABLE 7: Comparison of present NI tariff with 2TT tariff including 10% energy efficiency

No of units consumed per annum	No of customers	Cumulative percentage in each category	New NI EE tariff (0.9)	Present NI Bill 1999/00	Difference per Bill (£) (+ve value means NI EE is less expensive than the current bill)	Difference per group (£)
			£	£	£	£
500	23000	4.0933	39.98	45.00	5.03	115575.00
1000	14000	6.5848	79.95	90.00	10.05	140700.00
1500	25000	11.0340	119.93	135.00	15.08	376875.00
2000	39000	17.9747	159.90	180.00	20.10	783900.00
2500	52000	27.2290	199.88	225.00	25.13	1306500.00
3000	62000	38.2630	239.85	270.00	30.15	1869300.00
3500	65000	49.8309	285.95	315.00	29.06	1888575.00
4000	60000	38.2630	331.32	360.00	28.68	1720800.00
4500	52000	69.7633	376.70	404.30	27.61	1435460.00
5000	43000	77.4159	422.07	444.80	22.73	977390.00
5500	33000	83.2888	467.45	485.30	17.86	589215.00
6000	25000	87.7380	512.82	525.80	12.98	324500.00
6500	18000	90.9414	558.20	566.30	8.10	145890.00
7000	13000	93.2550	603.57	606.80	3.23	41990.00
7500	9000	94.8567	648.95	647.30	-1.65	-14805.00
8000	7000	96.1025	694.32	687.80	-6.52	-45640.00
8500	4500	96.9034	739.70	728.30	-11.40	-51277.50
9000	3700	97.5618	785.07	768.80	-16.27	-60199.00
9500	2500	98.0068	830.45	809.30	-21.15	-52862.50
10000	2000	98.3627	875.82	849.80	-26.02	-52040.00
10500	1500	98.6296	921.20	890.30	-30.90	-46342.50
11000	1000	98.8076	966.57	930.80	-35.77	-35770.00
11500	1000	98.9856	1011.95	971.30	-40.65	-40645.00
12000	750	99.1191	1057.32	1011.80	-45.52	-34140.00
12500	750	99.2525	1102.70	1052.30	-50.40	-37796.25
13000	750	99.3860	1148.07	1092.80	-55.27	-41452.50
13500	500	99.4750	1193.45	1133.30	-60.15	-30072.50
14000	400	99.5462	1238.82	1173.80	-65.02	-26008.00
14500	400	99.6174	1284.20	1214.30	-69.90	-27958.00
15000	300	99.6708	1329.57	1254.80	-74.77	-22431.00
15500	300	99.7242	1374.95	1295.30	-79.65	-23893.50
16000	300	99.7775	1420.32	1335.80	-84.52	-25356.00
16500	250	99.8220	1465.70	1376.30	-89.40	-22348.75
17000	200	99.8576	1511.07	1416.80	-94.27	-18854.00
17500	200	99.8932	1556.45	1457.30	-99.15	-19829.00
18000	200	99.9288	1601.82	1497.80	-104.02	-20804.00
18500	100	99.9466	1647.20	1538.30	-108.90	-10889.50
19000	100	99.9644	1692.57	1578.80	-113.77	-11377.00
19500	100	99.9822	1737.95	1619.30	-118.65	-11864.50
20000	100	100.0000	1783.32	1659.80	-123.52	-12352.00
	561900					10919662.00
Benefits (Costs) of the new EE tariffs compared to the current tariff would be £10,919,662						



TABLE 8: Comparison of present NI tariff with 2TT tariff including 20% energy efficiency

No of units consumed per annum	No of customers	Cumulative percentage in each category	Present EE tariff (0.8)	Present NI Bill 1999/00	Difference per Bill (£) (+ve value means NI EE is less expensive than the current bill)	Difference per group (£)
			£	£	£	£
500	23000	4.0933	37.20	45.00	7.80	179,400.00
1000	14000	6.5848	74.40	90.00	15.60	218,400.00
1500	25000	11.0340	111.60	135.00	23.40	585,000.00
2000	39000	17.9747	148.80	180.00	31.20	1,216,800.00
2500	52000	27.2290	186.00	225.00	39.00	2,028,000.00
3000	62000	38.2630	223.20	270.00	46.80	2,901,600.00
3500	65000	49.8309	262.32	315.00	52.68	3,424,200.00
4000	60000	60.5090	304.32	360.00	55.68	3,340,800.00
4500	52000	69.7633	346.32	404.30	57.98	3,014,960.00
5000	43000	77.4159	388.32	444.80	56.48	2,428,640.00
5500	33000	83.2888	430.32	485.30	54.98	1,814,340.00
6000	25000	87.7380	472.32	525.80	53.48	1,337,000.00
6500	18000	90.9414	514.32	566.30	51.98	935,640.00
7000	13000	93.2550	556.32	606.80	50.48	656,240.00
7500	9000	94.8567	598.32	647.30	48.98	440,820.00
8000	7000	96.1025	640.32	687.80	47.48	332,360.00
8500	4500	96.9034	682.32	728.30	45.98	206,910.00
9000	3700	97.5618	724.32	768.80	44.48	164,576.00
9500	2500	98.0068	766.32	809.30	42.98	107,450.00
10000	2000	98.3627	808.32	849.80	41.48	82,960.00
10500	1500	98.6296	850.32	890.30	39.98	59,970.00
11000	1000	98.8076	892.32	930.80	38.48	38,480.00
11500	1000	98.9856	934.32	971.30	36.98	36,980.00
12000	750	99.1191	976.32	1,011.80	35.48	26,610.00
12500	750	99.2525	1,018.32	1,052.30	33.98	25,485.00
13000	750	99.3860	1,060.32	1,092.80	32.48	24,360.00
13500	500	99.4750	1,102.32	1,133.30	30.98	15,490.00
14000	400	99.5462	1,144.32	1,173.80	29.48	11,792.00
14500	400	99.6174	1,186.32	1,214.30	27.98	11,192.00
15000	300	99.6708	1,228.32	1,254.80	26.48	7,944.00
15500	300	99.7242	1,270.32	1,295.30	24.98	7,494.00
16000	300	99.7775	1,312.32	1,335.80	23.48	7,044.00
16500	250	99.8220	1,354.32	1,376.30	21.98	5,495.00
17000	200	99.8576	1,396.32	1,416.80	20.48	4,096.00
17500	200	99.8932	1,438.32	1,457.30	18.98	3,796.00
18000	200	99.9288	1,480.32	1,497.80	17.48	3,496.00
18500	100	99.9466	1,522.32	1,538.30	15.98	1,598.00
19000	100	99.9644	1,564.32	1,578.80	14.48	1,448.00
19500	100	99.9822	1,606.32	1,619.30	12.98	1,298.00
20000	100	100.0000	1,648.32	1,659.80	11.48	1,148.00
	561900					25,711,312.00

Benefits (Costs) of the new EE tariffs compared to the current tariff would be £25,711,312.

appendix

Publications Available from OFREG

Publications List

The following publications can be inspected at:

The Office for the Regulation of Electricity and Gas (OFREG)
Brookmount Buildings
42, Fountain Street
BELFAST BT1 5EE

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OFFER NI Annual Report 1994	9.00	P&P	0.55
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Report on Customer Service Standards 1995/96 – OFREG	4.50	P&P	0.45
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Publication	Price
Other OFREG Publications (continued)	
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Electricity Services Customer Survey – MRNI Ltd	Free
Investigation into Northern Ireland – Scottish Interconnector: A report by the DGEs – June 1995	Free
Combined Heat & Power and the Northern Ireland Energy Market. A Consultation Paper. June 1996.	Free
Consumer Choice Competition & Prices. 'The Next Steps ' A Consultation Paper. July 1996.	Free
Price Control Reviews for Northern Ireland Electricity plc – DGEs proposals – July 1996.	Free
Combined Heat & Power and the NI Energy Market – A Response	Free
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Implementing the European Directive on Electricity Trading in Northern Ireland – November 1997	Free
Monopolies & Mergers Commission Report: Northern Ireland Electricity plc – A report on a reference under Article 15 of the Electricity (Northern Ireland) Order 1992 – Available from HMSO bookshops	£26
A Report prepared for Ofreg on Options for Generation in N.I. by London Economics – Executive Summary	Free
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