

# 4 The regulatory background

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## Introduction

4.1. The electricity supply industry in Northern Ireland is regulated principally by the Electricity Order,<sup>1</sup> by the conditions of the licences which have been granted under it and by further regulations or orders made pursuant to the Electricity Order. The regulatory regime is in many respects similar to that applying in Great Britain, but there are also material differences.

4.2. The DED and the DG are the principal regulators of the electricity supply industry and each exercises specific functions under the Electricity Order. We deal with each of their roles in turn.

## The role of the DED

4.3. The principal functions of the DED include licensing (although the DED has delegated this function to the DG), the giving of consent for new power stations and overhead lines, the making of fuel-stocking directions and responsibility for the encouragement of renewable generation. The DED is required to appoint a person to act as the DG to carry out the functions assigned to him by the Electricity Order.

4.4. The DED is under a primary duty to exercise many of its functions in the manner which it considers is best calculated:

- (a) to secure that all reasonable demands for electricity are satisfied;
- (b) to secure that licence-holders are able to finance the carrying on of the activities which they are authorized by their licences to carry on;
- (c) subject to (d) and (e) below, to promote competition in the generation and supply of electricity;

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<sup>1</sup>SI 1992 No 231.

- (d) to secure that the prices charged to tariff customers by a PES in any area specified by order do not distinguish (whether directly or indirectly) between different parts of that area; and
- (e) to secure that the PES is not thereby disadvantaged in competing with other suppliers of electricity.

4.5. Subject to the observation of its primary duty, the DED must exercise its functions in the manner which it considers is best calculated:

- (a) to protect the interests of electricity consumers in respect of:
  - the prices charged and other terms of supply (taking into account, in particular, the protection of the interests of consumers of electricity in rural areas);
  - the continuity of supply; and
  - the quality of the electricity supply services provided (taking into account, in particular, the interests of those who are disabled or of pensionable age);
- (b) to promote efficiency and economy on the part of persons authorized by licences to supply or transmit electricity and the efficient use of electricity supplied to customers;
- (c) to promote research into, and the development and use of, new techniques by or on behalf of persons authorized by a licence to generate, transmit or supply electricity;
- (d) to protect the public from dangers arising from the generation, transmission or supply of electricity; and
- (e) to secure the establishment and maintenance of machinery for promoting the health and safety of persons employed in the generation, transmission or supply of electricity.

4.6. The DED also has a further duty to take into account the effect on the physical environment of activities connected with the generation, transmission or supply of electricity.

## **The role of the DG**

4.7. The principal functions of the DG cover the general supervision and enforcement of the licensing regime. Under the Electricity Order the DED is under a duty to consult with the DG before the grant of the various types of licences or may, by means of a general authority, give him power to grant such licences. In fact the DED has delegated its functions in this regard to the DG by means of a general authority.

4.8. In exercising his functions, the DG is subject to the same duties as the DED set out in paragraphs 4.4 to 4.6.

4.9. Unlike his counterpart in Great Britain, the DG under separate statutory authority fulfils the regulatory role for the emerging natural gas industry alongside his regulatory responsibilities for the electricity sector. OFREG, formerly known as OFFER NI, has been established to assist the DG in carrying out both his statutory functions.

## **The licensing regime**

4.10. The Electricity Order provides for four types of licence: generation, transmission, PES and second-tier supply. The licences regulate the economic behaviour of licensees, set out a framework for eventual competition, underpin the arrangements relating to security of supply, protect the technical integrity of the system and provide for certain consumer services.

4.11. NIE holds the only transmission and PES licences and these are contained in a single composite document. That document provides that as long as NIE is the single holder of both licences, the T&D

system belonging to NIE will be treated in a number of respects as a single system. Its licences require NIE to carry on its activities in a number of separate businesses, including the PPB, the T&D Business and the Supply Business. Cross-subsidies are prohibited and NIE must not discriminate between comparable customers in the supply of electricity.

4.12. The transmission licence contains provisions which concern the operation and maintenance of the transmission system and the setting of a non-discriminatory Bulk Supply Tariff for sales of electricity to relevant suppliers. It also allows NIE to operate the PPB, which is required to contract for electricity at the best effective price reasonably obtainable having regard to the sources available (the economic purchasing obligation), and regulates the interconnectors. NIE also has responsibility for central despatch (see paragraph 3.25) and for maintaining standards of generation security. The PES licence contains provisions which concern the operation and maintenance of the distribution system and the supply functions of NIE.

4.13. The main licence provisions that affect NIE's T&D and Supply Businesses include duties:

- to submit to the DG regulatory accounts and price control information (twice yearly for both T&D and Supply);
- not to allow cross-subsidy between separate businesses;
- to offer terms for connection to, and use of, the T&D system;
- not to discriminate in the terms of supply offered to comparable customers;
- not to dispose of certain assets without the DG's consent;
- to prepare each year for the DG's approval, and to publish, statements of charges for Use of System, and connection and top-up/standby charges;
- to comply with the T&D system security and planning standards as approved by the DG;
- to prepare each year for the DG's approval, and to publish, a seven-year transmission statement detailing, for example, system capacity;
- to submit each year a network performance report to the DG;
- each year (prior to publication of tariffs) to submit to the DG tariffs and related information, including projected revenues;
- to prepare, update and operate codes of practice; and
- to comply with Overall Standards of Performance (see Chapter 6).

4.14. Generation licences require the holders to make their plant available for central despatch by NIE and contain provisions concerning change of control and the approval of power station operators. Second-tier supply licences may entitle holders to supply any premises within Northern Ireland. To date three second-tier licences have been issued (see paragraph 3.44).

4.15. All licensees are required to comply with the Grid Code, which has been prepared by NIE and approved by the DG. The Grid Code covers all material technical aspects relating to scheduling and despatch of generating plant; procedures and conditions relating to generating units and related plants; and connections to, and the operation and use of, the T&D system.

## **Price controls**

4.16. Most of the revenues of NIE's regulated businesses are subject to price controls. In this section we deal mainly with the price controls on NIE's T&D and Supply Businesses, which are the subject of our inquiry.

4.17. Whilst the office of the DG was established under legislation similar to that establishing the office of the DGES, there is no formal link between the two offices. However, the first DG held offices in both organizations and the Deputy DG was recruited from the Scottish arm of OFFER. Since the distribution and supply activities of NIE are broadly similar to those of the RECs in Great Britain, regulation has developed on broadly similar lines.

4.18. Accordingly, whilst the review of NIE's price controls is separate from the reviews of the RECs' price controls in Great Britain, the methodology adopted to review NIE's regulated businesses followed broadly the approach adopted in Great Britain and was informed by the Great Britain experience. The principal difference between the NIE price control reviews and the Great Britain reviews arises from the fact that the DG reviewed the different activities (for example, T&D) of the same company (NIE) at the same time, whereas the DGES reviewed different activities of many companies (for example, the RECs) at different times (and the reviews of the Scottish companies were a methodological extension of the REC reviews).

4.19. On 31 July 1996 the DG published proposals for revised price controls for each of NIE's three main regulated businesses. His proposals covered the period 1997/98 to 2001/02 (five years) for the PPB and T&D, and 1997/98 to 2000/01 (four years) for Supply. The publication of these proposals was the conclusion of a review which began some 18 months earlier and which involved public consultation, examination by consultants of NIE's operating costs and investment plans and meetings between NIE and OFREG.

4.20. On 30 August 1996 NIE rejected the price control proposals for T&D and Supply, while accepting the proposals for the PPB. The PPB is subject to a price control which was established at vesting and was set to run for ten years. However, the licence document granted to NIE allowed the DG to review the control after five years. In general terms, the price control allows NIE's PPB to pass through most of the costs it incurs in purchasing electricity from generators in addition to its own administrative costs and other costs which are deemed to be excluded (that is, they are outside the control of the PPB and are therefore passed through to suppliers in full).

4.21. On 18 September 1996 the DG, in accordance with Article 15 of the Electricity Order, referred to the MMC the proposed modifications to NIE's licences which the company had refused to accept. The terms of reference for our inquiry are set out in Appendix 1.1.

4.22. We look first at the current price control on NIE's T&D Business and then at the changes proposed by the DG and NIE's response to them. We then do the same for the price control on NIE's Supply Business.

### ***Price control for the T&D Business: the first regulatory period***

4.23. The T&D Business is subject to a price control based on an RPI-X formula. The provisions concerned, which are set out in Schedule 4 to NIE's licence (Appendix 2.1), lay down the maximum revenue which NIE can raise in each relevant year from regulated T&D activities. In the first regulatory period, which runs from 1 April 1992 to 31 March 1997, the maximum revenue is determined in accordance with the following formula:

$$M_{Dt} = hF_{Dt} + (1-h)V_{Dt}Q_{Dt} - T_t + K_{Dt}$$

where:  $M_{Dt}$  is the maximum regulated T&D revenue (in £ million);  
 $h$  is a weighting factor and was set at 0.75;  
 $F_{Dt}$  is a fixed component (in £ million);  
 $V_{Dt}$  is a variable component (in p/kWh);  
 $Q_{Dt}$  is the regulated quantity transmitted and distributed (in kWh);  
 $T_t$  is an adjustment for T&D electrical losses; and  
 $K_{Dt}$  is a correction factor to adjust for previous under- or over-charging.

4.24. For 1996/97, the components in the formula were expected to be as follows: £175.4 million for  $F_{Dt}$ , 2.6p/kWh for  $V_{Dt}$ , 6,889GWh<sup>1</sup> for  $Q_{Dt}$ , -£1.6 million for  $T_t$  and £6.6 million for  $K_{Dt}$ . Using these components and the weights in the formula produces a value for  $M_{Dt}$  of about £184 million.

4.25. The above formula is a combination of a revenue control ( $F_{Dt}$ ), which fixes allowed revenue irrespective of the quantity of units transmitted and distributed, and a price cap control ( $V_{Dt}$ ) which sets a maximum allowable average charge per unit. The values of the weighting factors ( $h$  and  $1-h$ ) are an approximation of the cost structure faced by NIE's T&D Business. The high weighting factor for the fixed component reduces the sensitivity of revenue to changes in the volume of units transmitted and distributed and so avoids any incentive for NIE to discourage energy conservation. In the first regulatory period the permitted annual change in the size of the fixed component ( $F_{Dt}$ ) is 3.5 percentage points above the RPI (RPI+ 3.5) and the permitted annual change in the size of the variable component ( $V_{Dt}$ ) is 1 percentage point above the RPI (RPI+ 1). The particular form of RPI used is the all items index and the formula requires NIE to produce a forecast of inflation for the forthcoming year.

4.26. The adjustment factor for T&D electrical losses ( $T_t$ ) was set so that the permitted maximum revenue is changed according to whether actual electrical losses are above or below a notified value<sup>2</sup> of 10.5 per cent. Electrical losses are the units unaccounted for on a T&D system, being the difference between units metered on entry to the system and units metered on exit. Under the present formula, NIE is rewarded if electrical losses are below 10.5 per cent of the units transmitted and distributed. The DG told us that this component gave an incentive to NIE to minimize the level of losses and was beneficial to customers and the environment.

4.27. The price control sets the maximum revenue that can be recovered in each year by the T&D Business through its Use of System charges which are paid by all customers for the provision and operation of the T&D network. The T&D Business also provides services which are for the specific benefit of (and are provided at the request of) individual customers. These are known as excluded services because they are charged direct to the customers who benefit and are not covered by the price control. They include the provision of top-up and standby supplies,<sup>3</sup> prepayment metering<sup>4</sup> and other specific services requested by customers over and above the standard service provided by the business<sup>5</sup> and, in part, connection to the distribution system. NIE's current connection policy is that all under 1 MW customers are charged 60 per cent of the capital costs of new, augmented or reduced connections. The remaining capital costs, R&M and replacement costs are funded from regulated revenues.

### ***Price control for the T&D Business: the DG's proposals***

4.28. The two main changes proposed to the structure of the price control were a change in the definition of the fixed component and an alteration of the losses term. We look at each of these changes in turn.

4.29. The DG proposed changing the definition of the fixed component from a monetary amount to an amount per customer, where customer numbers are represented by NIE's current forecasts over the period of the forthcoming price control. This approach is the same as that used by the DGES in the REC distribution price controls. The DG said that the advantage of this approach was that it would enable a single X factor to be applied to both the amount per customer and the amount per unit, rather than having two X factors as in the first price control. He told us that this change was a presentational improvement which did not alter the fixed nature of this component since customer numbers would be predetermined for

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<sup>1</sup> 1 GW = 1,000,000 kW.

<sup>2</sup>The price controls contain values which are set by the DG (by the Government, prior to privatization).

<sup>3</sup>Provided to customers (who are normally or mainly supplied by their own power source) to enable them to receive power from NIE when their own source of supply is inadequate or unavailable.

<sup>4</sup>Prepayment meters are those which customers use to obtain electricity by inserting cards which they have purchased earlier.

<sup>5</sup>Such services include the relocation of equipment to meet statutory requirements or the provision of equipment to a higher security standard than otherwise required at the customer's request.

the whole of the forthcoming price control period. The change would enable easier comparisons to be made with the price controls faced by the REC distribution businesses which also had one X factor.

4.30. The DG proposed to reduce the notified value in the losses term from 10.5 to 10 per cent. He said that the new level represented the average level of losses that NIE had experienced in the first regulatory period. The DG told us that NIE should be able to sustain and improve upon the new level in the forthcoming regulatory period.

4.31. The DG also proposed to introduce an additional term to the price control for wheeled units.<sup>1</sup> The reinstatement of the north/south interconnector, the possibility of further interconnections being established with the ESB in the Republic of Ireland and the likelihood of the interconnector being established with Scotland raised the possibility that electricity might be wheeled across NIE's system. The DG's proposal was to include revenues from wheeling in regulated income but to exclude wheeled units from the quantity transmitted and distributed for the purposes of calculating allowed revenue. The costs of wheeling incurred by NIE would be met through a special wheeling term which, as the timing of further interconnections was uncertain, would be set at the appropriate time.

4.32. The DG considered changing the inflation measure (RPI) from a forecast of inflation to a historical rate but concluded that no change was appropriate. He noted that the DGES had changed from using a forecast of inflation to a historical average rate of inflation<sup>2</sup> but said that in Northern Ireland the use of a forecast rate had not caused problems.

### ***Price control for the T&D Business: NIE's response to the DG's proposals***

4.33. NIE's main disagreements with the DG concerned his estimates of asset values, cost of capital, capital expenditure and operating expenditure, each of which is covered later in this report, and not with his proposals for the structure of the formula. NIE has, however, objected to the reduction in the allowed value in the losses term. It suggested to us that the losses factor should be based on a moving average of losses during the past ten years but that a figure of 10.5 per cent should be used for each year up to and including 1996/97. NIE told us that losses were likely to increase during the forthcoming regulatory period due to a higher overall system utilization, environmental pressures and a reduction in the generation capacity at Belfast West which would result in higher losses due to imports into the Belfast load centre. However, one of NIE's planning assumptions in its latest corporate plan is that losses will be 9 per cent in each of the next five years. NIE told us that the 9 per cent figure was based on units sent out and not, as in the price formula, units sold. It said that the 9 per cent figure was equivalent to 10 per cent on the basis of units sold. NIE told us that its corporate plan simply assumed a continuation of the current 10 per cent losses, despite the upward pressure on losses.

### ***Price control for the Supply Business: the first regulatory period***

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<sup>1</sup>Units moved across NIE's system but not consumed within Northern Ireland, for example units imported from Scotland and exported to the Republic of Ireland.

<sup>2</sup>Paragraph 4.64 of the DGES's report setting out his proposals for price controls for the RECs' supply business, dated July 1993, stated that 'in the early years of the price controls [the use of forecast inflation] contributed to considerable price volatility'. In the DGES's distribution price controls, dated August 1994, paragraph 3.15 stated that the use of a historical rate of inflation 'should reduce the overall forecast errors, remove a potential scope for dispute and remove the possibility of fluctuations in prices caused by RPI fluctuations in a single month'.

4.34. NIE's Supply Business has been subject to the charge restriction set out in Schedule 6 to its licence which, like Schedule 4 covering the T&D Business, covers the period from 1 April 1992 to 31 March 1997 (Appendix 2.2). The price control formula set a value for the maximum average revenue per unit. The formula is as follows:

$$M_{st} = G_t + U_t + S_t + K_t$$

where:

- $M_{st}$  is the maximum average charge per unit supplied;
- $G_t$  is the unit costs incurred in the purchase of electricity;
- $U_t$  is the allowed T&D costs;
- $S_t$  is the allowed charge for the Supply Business's own costs; and
- $K_t$  is the correction factor to adjust for previous over- or under-charging.

4.35. For 1996/97, the components in the formula were expected to be as follows: 4.5p/kWh for  $G_t$ , 2.6p/kWh for  $U_t$ , 0.5p/kWh for  $S_t$ , and -0.1p/kWh for  $K_t$ . Using these components in the formula produces a value for  $M_{st}$  of about 7.5p/kWh.

4.36. The formula takes the form of RPI-X+ Y where the Y term, equal to  $G_t$  plus  $U_t$ , allows full pass-through of those costs which have already been regulated and are outside the control of the Supply Business. The  $G_t$  term covers the cost of purchasing electricity from NIE's PPB under the Bulk Supply Tariff. The  $U_t$  term covers payments to NIE's T&D Business for use of the system.

4.37. The  $S_t$  term, which controls the recovery of the Supply Business's own cost, is allowed to increase at the same rate as the RPI, X being zero. The  $S_t$  covers the supply margin and such costs as billing, third party revenue collection, bad debts, corporate recharges and payroll costs. The allowed charge per unit is the weighted average of the allowed charges for customers taking over 1 MW and those taking up to 1 MW.

### ***Price control for the Supply Business: the DG's proposals***

4.38. The DG's main proposals were as follows:

- Customers using over 1 MW of electricity would not be covered by the price control, since the DG believed that the potential exists for choice and competition in this sector of the market.
- The regulatory period would be four years (rather than five as in the first price control period) as the proposed EC Liberalisation Directive, the introduction of natural gas and the potential expansion of the second-tier supply market made the future of electricity supply in Northern Ireland difficult to predict.
- The  $S_t$  term in the formula would consist of a constant amount, an allowance per customer, an allowance per unit, an allowance for a green tariff and an allowance for energy efficiency.
- A green tariff component would be introduced into the formula in order to provide an incentive to NIE to develop a market for electricity from renewable sources; an extra administrative allowance would be given to NIE for every kWh of electricity sold under a green tariff. The DG expected the sales of green tariff electricity to start at 5 GWh at the beginning of the forthcoming regulatory period and to increase by 5 GWh each year thereafter. The DG told us that the potential existed for NIE to exceed this total thereby earning additional income whilst stimulating demand for green units.
- As regards the proposed energy-efficiency component, NIE would be allowed additional revenue of £1 per customer per year for the purpose of stimulating the market for energy efficiency goods and services. The DG told us that he understood NIE's concerns that this component was added to the Supply price control rather than the T&D price control (see paragraph 4.40). However, he said that including the component in the Supply price control would enable other second-tier suppliers to offer competing energy efficiency products and services. He told us that if the component was in the T&D

price control it would be difficult to see how other second-tier suppliers could compete on equal terms with NIE.

4.39. As for NIE's T&D Business, the DG considered changing the inflation measure (RPI) and switching from a forecast to a historical rate of inflation but decided not to change these provisions (see paragraph 4.32).

### ***Price control for the Supply Business: NIE's response to the DG's proposals***

4.40. NIE's main disagreements with the DG concerned his estimates of cost of capital, capital expenditure and operating expenditure, each of which is covered later in this report, and not the structure of the formula. NIE has also, however, objected to the inclusion of an energy efficiency factor in the Supply price control. It said that such a factor should be included in the T&D price control, rather than the Supply price control, in order to avoid any distortion to competition between the Supply Business and second-tier suppliers. NIE told us that considerable care was required to ensure that promotion of green energy did not result in unnecessarily high prices in Northern Ireland. It said that it also rejected the DG's view that there was significant potential for NIE to earn additional income as a result of his proposals on the green tariff.