

March 2002

**Connection and charging policy
for new generation
by Scottish Hydro Electric
Transmission Limited**

A final proposal document

Executive summary

Background

Under Part II, Condition D8, paragraph 1 of the Electricity Transmission Licence, the licensee, Scottish Hydro Electric Transmission Limited (“SHETL”) in the case of the north of Scotland, is required to set out its charging policies including in relation to connections in statements for the approval of the Authority. Since 1998, SHETL’s charging statements relating to transmission have not been approved by the Authority and a review of the connection and charging policy relating to new generation connections in SHETL’s transmission area has been under consideration for some time. Under Part II, Condition D8, paragraph 7 of the Electricity Transmission Licence¹ the Authority can direct SHETL to revise its connection and charging statements.

SHETL, as a transmission licensee, also has statutory obligations to facilitate competition in supply and generation and to develop and maintain a co-ordinated, economical and efficient network².

Under the present connection and charging policy of SHETL a new generation plant is charged the full cost of reinforcement anywhere on its system deemed necessary by SHETL to allow the system to transmit the generator’s output under all the circumstances consistent with SHETL’s transmission system planning standards. Such an approach is known as a “deep” connection policy as all of the costs associated with reinforcing the transmission network are charged to the new connecting generator.

Under the alternative, known as a “shallow” connection policy only the costs associated with connecting the new generator to the existing network are charged to the new

¹ This states that “In addition to, and without prejudice to, the Licensee’s obligations under paragraph 1 [of the Condition], the Licensee shall, upon being directed to do so in directions issued by the Authority from time to time for the purposes of this Condition and within such period as shall be specified in the directions, prepare a statement or statements approved by the Authority providing for use of the Licensee’s Transmission System and/or for connection to the Licensee’s Transmission System will be made on such basis as shall be specified in the directions and such statement or statements shall be in such form and contain such detail as shall be necessary to enable any person to make a reasonable estimate of the charges to which it would become liable for the provision of such services and (without prejudice to the foregoing) including such information as shall be specified in the directions. Each statement prepared in accordance with this paragraph shall, with effect from the date on which it is approved by the Authority or such later date as the Authority shall specify, replace the corresponding statement prepared by the Licensee in accordance with paragraph 1 or, as the case may be, this paragraph (as from time to time revised in accordance with paragraph 8) which is in force at such date and the Licensee shall, with effect from such date make charges in accordance with the statement (as from time to time revised in accordance with paragraph 8) which has replaced such corresponding statement”.

² Section 9(2) of the Electricity Act.

generator. Any costs associated with reinforcing the network are recovered from all transmission system users through transmission use of system charges.

The present policy provides a strong signal for new generation to locate where general system reinforcement is not required to secure transmission access as in these locations the connection costs will clearly be lower. However, the policy has led to high charges being quoted for new connections where SHETL deems general system reinforcement to be required and can lead to low usage of new transmission assets if they are only required under exceptional circumstances. It also appears that the policy may have deterred or hindered the entry of new generators since, at present, there are eight requests for Ofgem to make determinations, under the provisions of SHETL's transmission licence, on the connection offers made by SHETL for new generation schemes in its transmission area.

This document sets out Ofgem's final proposal outlining the basis on which Ofgem proposes to issue a direction to SHETL to revise the connection and charging policy for new generation.

General principles

The general principles that Ofgem considers appropriate for the development of GB transmission connection and charging policy for generation are as follows.

Ofgem considers that, as a matter of principle and consistent with the transmission licensee's duty to facilitate competition, connection charges to transmission networks, whether in gas or electricity, should be "shallow". This means that new connections should only be charged connection charges relating to the costs of providing, operating and maintaining the assets necessary to facilitate connection to the network. Any costs of "deeper" transmission reinforcement should be charged to all users through general transmission use of system charges.

Transmission system operators should offer connections and transmission access terms on a non-discriminatory basis to all generation, both new and existing. The payment by generators, and indeed customers, of their transmission use of system charges should confer firm rights of access. Consequently, in order to interrupt or constrain a system user's rights, the system operator should have to buy back access rights (or make

payments to constrain a generator) by paying compensation at market-determined prices.

Normally, connection offers would be made with non-interruptible access to the transmission network. However connection offers for interruptible access should be made by the transmission business, at the request of new generation, where there are reasonable grounds for doing so and where completion of a major transmission reinforcement would be needed to enable the new generation to have non-interruptible access.

Different types of buy-back arrangements may be appropriate in different circumstances. For example, the system operator may, consistent with its obligations to facilitate competition and not to discriminate between users, strike long term agreements through a tender for the right to interrupt one or several generators. Alternatively, it may seek to buy back rights in the event of a constraint through shorter term contracts. In circumstances where there is significant market power at a particular location, it may be necessary to consider the use of administered pricing arrangements for exercising buy-backs rights.

As a general principle, Ofgem believes that in return for the payment of a use of system charge, rights to use the system should be financially firm. This means that, in the event that a particular generation scheme or class of generation must be constrained down because of a transmission system constraint, compensation should be paid by the transmission system operator. The level of compensation paid should reflect the terms of connection and access to the transmission system and be consistent with the principle of non-discrimination.

The costs incurred by the system operator in buying back access rights will need to be recovered from all system users and hence should be included in the general transmission use of system charges. To ensure that the system operator undertakes buy-backs in an efficient manner, it is desirable that the recovery of buy-back costs is subject to some form of incentive regime, and this may need to be considered as part of the future British Electricity Trading and Transmission Arrangements ("BETTA") project³.

³ In August 2000, Ofgem issued a consultation document which consulted on the principle that effective competition in Scotland could best be achieved by introducing GB trading and transmission arrangements and a GB system operator ("BETTA"). In December 2001 Ofgem issued a further BETTA consultation document which indicated that the implementation of BETTA would require primary legislation.

Specific factors in the north of Scotland

Ofgem considers that in the north of Scotland there are special issues which require a particular interim solution:

- ◆ common ownership of distribution, transmission (including system operation) and generation assets and supply businesses by SSE group;
- ◆ single ownership of most of the generation capacity in SHETL's transmission area by SSE Generation Limited ("SSEGL");
- ◆ 132kV assets being owned by the transmission business in the north of Scotland (whereas these assets are owned by the distribution businesses in E&W);
- ◆ the net export of electricity from SHETL's transmission area;
- ◆ the radial structure of the transmission network in the north of Scotland (whereas there is a meshed structure for the transmission network in E&W); and
- ◆ the fact that a high proportion of generation comes from renewable generation and there is considerable potential for new renewable generation, in particular wind generation, in the north of Scotland.

In the long-run in a post BETTA environment, the introduction of an SO, independent of generation and supply interests, while not fully resolving these issues, will ensure that they are managed in a transparent and objective manner, and hence obviate the need for special arrangements.

For the period 1 April 2002 until the introduction of BETTA, Ofgem proposes to require SHETL to introduce the following method of charging.

Basis of the final proposal

Ofgem considers that SHETL's connection and charging policy should be based, as far as possible on the principles already outlined, but modified and developed to take account of the specific north of Scotland issues set out above.

Ofgem believes that SHETL should charge generation connecting to the transmission system a shallow connection charge. All generation will be charged transmission use of

system charges for using SHETL's transmission system and in return should receive firm access rights. Additionally new generation will pay a transmission use of system charge to reflect reinforcement costs. SHETL should develop a methodology for deriving use of system charges. SHETL should be free to enter into contractual arrangements with generators to buy back these rights in the event of a constraint. In entering into such arrangements, SHETL must comply with its statutory and licence obligations to facilitate competition and not to discriminate between users. As part of these proposals Ofgem has agreed that SHETL can enter into a contract with SSEGL for the use of Peterhead generation station for constraint management purposes. SSEGL will in addition be required to seek a similar arrangement with other generators in its area.

Under these arrangements, generators should only be constrained if their firm access rights (where such rights are held) have been bought back. SHETL should interrupt generators in a non-discriminatory and cost-effective manner and include the costs that it incurs in so doing in its generation use of system charges. If there are significant concerns over locational market power or other technical constraints which may prevent an efficient buy-back market operating, it may be appropriate to have a buy-back price which is administered.

Way forward

Ofgem's proposals, as set out in this document, are specific to the connection and charging policy in SHETL's transmission area. Ofgem considers that the new connection and charging statements should be implemented by SHETL by 1 April 2002 and that these arrangements should continue until the introduction of new transmission and system operation arrangements as part of BETTA. Ofgem is separately consulting on matters relating to transmission access and pricing in E&W as part of the implementation of NETA and the outcome of this consultation is likely to form the basis of the arrangements that would replace those proposed in this document.

The proposed changes to SHETL's existing policies are viewed by Ofgem as an interim solution enabling the issues particular to the north of Scotland to be managed until the introduction of BETTA. They should also enable new generation to connect to the system, allow the efficient development and maintenance of SHETL's network and promote competition. Ofgem has discussed the proposals with SHETL and with SSE. They have indicated their support for these proposals and have also supported their

implementation by **1 April** 2002 and Ofgem intends to direct SHETL to modify its connection and charging policy accordingly.

Comments

Comments on any of the issues raised in this document are welcome and should be sent, in writing, or e-mailed, not later than 22 March 2002 to:

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Respondents are free to mark their responses as confidential although we would prefer, as far as possible, to be able to place responses to this document in the Ofgem library. Unless clearly marked 'confidential', responses will be published by placing them in the Ofgem library.

If you wish to discuss any aspect of this document, please contact Charles Coulthard (0141 331 1772) who will be pleased to help.

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1. Introduction

Background

- 1.1 Since 1998, the connection policy of SHETL has been under review and consultation by Ofgem. Reference was made to it in Ofgem's consultation documents of May 2000⁴ and August 2000⁵ (the "August 2000 document"). In June 2001, Ofgem made a determination⁶ in respect of the level of the connection charges applicable to a new generation scheme in Kintyre, in the north of Scotland.
- 1.2 Under the present connection and charging policy of SHETL a new generation plant is charged the full cost of reinforcement anywhere on its system deemed necessary by SHETL to allow the system to transmit the generator's output under all the circumstances consistent with SHETL's transmission system planning standards. Such an approach is known as a "deep" connection policy as all of the costs associated with reinforcing the transmission network are charged to the new connecting generator.
- 1.3 Under the alternative, known as a "shallow" connection policy only the costs associated with connecting the new generator to the existing network are charged to the new generator. Any costs associated with reinforcing the network are recovered from all transmission system users through transmission use of system charges.
- 1.4 The present policy provides a strong signal for new generation to locate where general system reinforcement is not required to secure transmission access as in these locations the connection costs will clearly be lower. However, the policy has led to high charges being quoted for new connections where SHETL deems general system reinforcement to be required and can lead to low usage of new transmission assets if they are only required under exceptional circumstances. It also appears that the policy may have deterred or hindered the entry of new generators since, at present, there are eight requests for Ofgem to make determinations, under the provisions of SHETL's transmission licence, on the connection offers made by SHETL for new generation schemes in its transmission area.

⁴ Initial proposals and issues for consideration on the reform of Scottish Trading Arrangements, Ofgem, May 2000.

⁵ Interim Proposals for the reform of Scottish Trading Arrangements: British Electricity Trading and Transmission Arrangements (BETTA), Ofgem, August 2000.

⁶ Determination by the Authority of the terms of a connection agreement between a generator and Scottish and Southern Energy plc, Ofgem, June 2001.

1.5 The natural resources of the north of Scotland, the Scottish Renewable Orders (“SROs”) and the new Renewables Obligation (Scotland) (“RO(S)”) have led to considerable interest in the development and connection of new generation schemes in the north of Scotland. However, SHETL’s connection policy appears to be deterring or hindering many of these schemes given the eight requests for Ofgem to make a determination on connection offers outlined above.

1.6 The August 2000 document set out initial proposals for the connection and charging policy of SHETL to include:

- ◆ a shallow connection policy with the possibility of interruptible transmission access to allow generation access to available transmission capacity without undertaking additional reinforcement; and
- ◆ provisions for any additional generation capacity belonging to SSE north of Dundee to be the first to be interrupted (constrained down).

The August 2000 document identified analysis that needed to be undertaken by Ofgem’s consultants before Ofgem could set out its final proposals. This analysis has been completed and the consultant’s report has been placed in the Ofgem library.

Rationale

1.7 Ofgem has a statutory duty to carry out functions under the Electricity Act 1989⁷ in a manner that it considers is best calculated to secure a diverse and viable long term energy supply. A non-discriminatory generator connection policy, which allows a range of generation, is essential to achieve this aim.

1.8 Effective connection of new generation will contribute to the Government’s environmental targets reflecting obligations under the Kyoto Agreement, to generate 10 per cent of electricity from renewable sources by 2010. This is particularly important for the north of Scotland as it has a comparative advantage in this type of energy.

⁷ Electricity Act 1989, sub-section 3A(5)(c) as substituted by section 13 of the Utilities Act 2000.

- 1.9 Ofgem has a principal objective to protect the interests of customers, wherever appropriate by promoting competition. Generator connection charging policy has an important effect on the development of new independent generation schemes and hence on the development of competition in the generation market.

Purpose of this final proposal document

- 1.10 Under Part II, Condition D8, paragraph 1 of the Electricity Transmission Licence, SHETL is required to set out its connection and charging policy in statements for the approval of the Authority. Under Part II, Condition D8, paragraph 8 of the Electricity Transmission Licence, SHETL may periodically revise the statements prepared in accordance with paragraph 1 and must, at least once a year, revise certain statements including its connection and charging policy in order that the information in it continues to be accurate in all material respects. Since 1998, SHETL's revision to its charging statements relating to transmission have not been approved by Ofgem and a review of the connection and charging policy relating to new generation connections in the SHETL's transmission area has been under way.
- 1.11 Under Part II, Condition D8, paragraph 7 of the Electricity Transmission Licence, Ofgem can issue a direction for preparation of new connection and charging statements. This document sets out, amongst other things, the basis and general content of the proposed direction that Ofgem proposes to issue to SHETL in respect of its connection and charging policy.

Related issues

British Electricity Trading and Transmission Arrangements (BETTA)

- 1.12 Since 1998, Ofgem has been reviewing and consulting on the way forward for trading and transmission arrangements in Scotland. The review of SHETL's connection and charging policy has formed part of this wider review process.
- 1.13 In the August 2000 document, Ofgem concluded that effective competition in Scotland could best be achieved by introducing a unified set of trading and transmission arrangements covering Great Britain. Ofgem's vision for harmonising arrangements in Scotland with E&W involved the development of a single Balancing and Settlement Code ("BSC") for GB, a single GB system operator, a single Connection and Use of

System Code ("CUSC") for GB, a single GB market for settlement purposes, common principles for transmission access and for setting transmission charges and changes to the role of the three transmission companies in GB.

- 1.14 Ofgem considered that, in some instances, it may be appropriate or necessary to make interim changes to the existing arrangements prior to the introduction of BETTA. The August 2000 document indicated that changes to existing policy prior to the implementation of BETTA needed to be: straight forward to implement; effective in making a positive impact on the development of the market; and be compatible with the vision and development of BETTA, and the transmission access and pricing arrangements presently being consulted on by Ofgem for E&W.
- 1.15 In April 2001, Ofgem issued a document⁸ that summarised and reviewed the responses to the interim proposals set out in the August 2000 document. It did not consider issues of policy development or implementation.
- 1.16 In December 2001, Ofgem issued a consultation⁹ on the development and implementation of BETTA. The document sought views on: the potential legislative framework; the use of the processes and systems in England and Wales for implementing a GB BSC; the creation of a single licensed System Operator; the creation of licensed transmission owner activities; and how contractual change should best be effected.

Transmission access, pricing and losses reform in England and Wales

- 1.17 Since 1999, Ofgem has consulted on transmission access and charging arrangements in E&W as part of the implementation of NETA. Under BETTA, Ofgem is proposing that any new transmission access, pricing and losses arrangements introduced in England and Wales would be used as a basis for GB reforms.
- 1.18 In May 2001, Ofgem issued a document¹⁰ setting out for further consultation Ofgem's latest thinking regarding transmission access and pricing arrangements and enduring arrangements for the treatment of losses for the National Grid Company's (NGC's) transmission system in E&W.

⁸ Reform of Scottish trading arrangements: BETTA: A summary of responses to the August 2000 document, Ofgem, April 2001.

⁹ The development of British Electricity Trading and Transmission Arrangements (BETTA): A consultation, Ofgem December 2001.

¹⁰ Transmission access and losses under NETA, Ofgem, May 2001.

1.19 In February 2002 Ofgem issued a subsequent document¹¹ on transmission access and losses under NETA detailing revised proposals.

Distribution charges for embedded generation

1.20 In September 2001 Ofgem issued a preliminary consultation document¹² on embedded generation. The paper questions whether it may be appropriate to make early changes to the regulatory framework to remove perceived barriers to the connection of greater quantities of embedded generation capacity.

Structure of this document

1.21 Chapter 2 of this document summarises some key statutory and licence obligations and duties that need to be taken into account when considering a revised connection and charging policy for SHETL's transmission area.

1.22 Chapter 3 summarises issues relating to Ofgem's principles for transmission connection and charging and the report of Ofgem's consultants on issues relating to the connection and charging policy in SHETL's transmission area. It also sets out the basis of Ofgem's proposed direction to SHETL to change its connection and charging policy.

1.23 Chapter 4 sets out Ofgem's final proposals for changes to SHETL's connection and charging policy, and the proposed directions that will be necessary to implement these changes.

¹¹ Transmission access and losses under NETA: Revised Proposals, February 2002.

¹² Embedded generation: price controls, incentives and connection charging; a preliminary consultation document, Ofgem, September 2001.

2. Legal framework

Introduction

- 2.1 This chapter sets out some key statutory and licence obligations and duties that need to be taken into account when considering a revised connection policy for SHETL's transmission area.

The Electricity Act 1989

- 2.2 Section 9 of the Electricity Act 1989 ("EA") states:

- (2) *'It shall be the duty of the holder of a licence authorising him to transmit electricity -*
- (a) *to develop and maintain an efficient, co-ordinated and economical system of electricity transmission; and*
- (b) *subject to subject subsection (3) below, to facilitate competition in the supply and generation of electricity.*

Electricity Transmission Licence: Standard Conditions

- 2.3 Under Part II Condition 7 paragraph 1(b)(i) of the Electricity Transmission Licence, SSE is required to implement, have in force and comply with a Grid Code which is designed:

'to permit the development, maintenance and operation of an efficient, co-ordinated and economical system for the transmission of electricity'.

- 2.4 Under Part II Condition 7 paragraph 1(b)(ii) of the Electricity Transmission Licence, SHETL is required to implement and comply with a Grid Code which is designed:

'to facilitate the Licensee's Transmission System being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity'.

- 2.5 Under Part II, Condition 7, paragraph 5(c) of the Electricity Transmission Licence, SHETL is required to produce:

'a planning code specifying the technical and design criteria and procedures to be applied by the licensee in the planning and development of the licensee's transmission system and to be taken into account by persons connected or seeking connection with the licensee's transmission system in the planning and development of their own plant and systems.'

2.6 The Electricity Transmission Licence includes a number of other conditions relating to connection and charging policy which include the requirement for SHETL to:

- ◆ produce charging statements setting out the basis of charges for connection to and use of the transmission system ("Charging Statements") (Part II, Condition D8, paragraph 1);
- ◆ produce a statement of, amongst other technical aspects, system capacity ("Seven Year Statement") for the transmission system (Part II, Condition D8, paragraph 5);
- ◆ make connection offers that are non-discriminatory (Part II, Condition D8A, paragraph 1);
- ◆ offer standard terms of connection (Part II Condition D8A, paragraph 2); and
- ◆ comply with the transmission price control (Special Conditions I to N and Schedules A and B of the Electricity Transmission Licence).

Competition Act 1998

2.7 Section 18 of the Competition Act 1998 ("CA") prohibits abuse of a dominant position where this may affect trade within the United Kingdom (the Chapter II prohibition). Ofgem may take appropriate enforcement measures where there is such abuse which relates to commercial activities connected with the generation, transmission or supply of electricity¹³.

The Utilities Act 2000

2.8 The EA was substantially amended by the Utilities Act 2000. Section 3A(1) of the EA now provides that:

¹³ Electricity Act 1989, section 43.

'The principal objective of the Secretary of State and the Gas and Electricity Markets Authority (in this Act referred to as "the Authority") in carrying out their respective functions under this Part is to protect the interests of consumers in relation to electricity conveyed by distribution systems, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with the generation, transmission, distribution or supply of electricity.'

- 2.9 Section 3A(5)(a) of the EA provides that the Authority shall carry out its functions (under Part II) in a manner best calculated (amongst other things) to:

'promote efficiency and economy on the part of persons authorised by licences or exemptions to transmit, distribute or supply electricity and the efficient use of electricity conveyed by distribution systems'.

- 2.10 Section 3A imposes a number of other duties on the Authority.

Summary

- 2.11 SHETL, as a transmission business, has obligations, amongst others, to facilitate competition in generation and to offer terms of connection which neither distort nor restrict competition. SHETL is also required to plan and develop an efficient, co-ordinated and economical system in accordance with the planning standards.
- 2.12 The Authority has a responsibility, amongst others, to protect the interests of consumers by promoting effective competition wherever appropriate and to approve the Charging Statements and Seven Year Statements of SHETL.

3. Charging and connection policy review

Introduction

- 3.1 This chapter begins by summarising some of the general principles that Ofgem believes should be adopted in relation to transmission connection, access and charging. It includes some of the conclusions of a report that Ofgem commissioned to assess the transmission constraint and charging policy in SSE's transmission area.
- 3.2 The chapter also summarises Ofgem's review of connection and charging policy in SHETL's transmission area and the basis on which Ofgem considers a revised connection and charging policy should be introduced for an interim period in SHETL's transmission area. Finally, it outlines the way in which this change in policy could be implemented.

General principles for transmission connection and charging

- 3.3 The general principles which Ofgem considers to be appropriate for the development of transmission connection and charging policies are as follows.

Charges

- 3.4 Ofgem considers that, consistent with the duty of transmission licensees to facilitate competition, connection charges to electricity transmission networks should be "shallow". This means that new connections should only be charged connection charges relating to the costs of providing, operating and maintaining the assets necessary to achieve connection. Costs of deeper transmission reinforcement should be recovered from users through general transmission use of system charges.

Interruptibility

- 3.5 Transmission system operators should offer connections and transmission access terms on a non-discriminatory basis to all generation, both new and existing. The payment by generators, and indeed customers, of their transmission use of system charges should confer financially firm rights of access. Consequently, in order to interrupt or constrain a generator, the system operator should have to buy back its access rights and pay compensation for the interruption.

- 3.6 Different types of buy-back arrangements may be appropriate in different circumstances. For example, the system operator may, consistent with its obligations to facilitate competition and not to discriminate between users, strike long term agreements through a tender for the right to interrupt one or several generators. Alternatively, it may seek to buy back rights in the event of a constraint through shorter term contracts. In circumstances where there is significant market power at a particular location, it may be necessary to consider the use of administered pricing arrangements for exercising buy-backs rights.
- 3.7 As a general principle, Ofgem believes that in return for the payment of a use of system charge, rights to use the system should be financially firm. This means that, in the event that a particular generation scheme or class of generation must be constrained down because of a transmission system constraint, compensation should be paid by the transmission system operator. The level of compensation paid should reflect the terms of connection and access to the transmission system and be consistent with the principle of non-discrimination.

Mechanism for interruptions

- 3.8 Ofgem considers that the system operator should have in place a clear, transparent and non-discriminatory set of arrangements for constraining down generation behind transmission constraints that are designed to manage any constraints in an efficient manner.
- 3.9 Ofgem considers that, where all generators are connected on non-discriminatory terms, in the event of transmission system constraints, the system operator could invite bids from generation operators to reduce from their intended generation levels (or tender for contracts). The system operator should accept bids (or call off contracts) to resolve constraints by calling on the lowest bids (or contract prices) until sufficient have been purchased to relieve the constraint. Thus, generators should only be interrupted if their firm access rights are bought back.

Compensation for loss of transmission access

- 3.10 Ofgem considers that, in the event that a particular generation scheme or class of generation must be constrained down because of a transmission system constraint, compensation should be paid by the transmission operator. The level of compensation

should reflect the terms of connection and access to the transmission system and be consistent with the principle of non-discrimination.

- 3.11 Under certain, specified circumstances, for example where there is a possibility of locational market power being exercised or where the system operator can demonstrate that technical or other characteristics make it necessary repeatedly to constrain a particular generation scheme, the system operator may adopt a different set of arrangements, subject to the payment of compensation. For example, the buy-back price could be administered. Alternatively, the buy-back price for firm access rights could be specified in contractual arrangements between the system operator and generators.

Recovery of costs

- 3.12 The costs incurred by the system operator in buying back access rights will need to be recovered from all system users. One straightforward methodology for doing so would be to include these costs in the general transmission use of system charges.

Consultant's report for SHETL's transmission area

- 3.13 Following publication of Ofgem's August 2000 document, Ofgem's consultants undertook a study of the application of the planning standards to the transmission route between Aberdeen and Dundee and SHETL's associated connection policy¹⁴. The capacity of the Aberdeen/Dundee route represents a major planning constraint in SHETL's system. This review concluded that:
- ◆ SHETL's planning standards are broadly similar to those used by NGC in E&W. Connections with interruptible access are feasible. The planning standards require an economic appraisal and justification of proposals to reinforce the system. These standards should be applied when assessing a new connection, thereby enabling generation to have a connection with interruptible access, unless the system reinforcement to provide a connection with non-interruptible access is economically justified or specifically requested by the customer. On this basis, the review concluded that several hundred megawatts (and possibly over one thousand megawatts) of new generation capacity could be connected north of Dundee with interruptible access arrangements before it would

¹⁴ Obtainable from the Ofgem Library.

become economic to reinforce the transmission route between Aberdeen and Dundee (i.e. at present interruption should be a rare event);

- ◆ there is no inherent reason why SHETL's deep connection charge, whereby the costs of the direct connection and system reinforcement triggered by a new entrant are recovered in the connection charges of that entrant, cannot be changed to a shallow connection charge with use of system charges recovering the reinforcement costs. The review concluded that the use of system charge and the level of interruption to the network access could give signals to encourage new generation to locate where there were no system constraints. This would replace the locational signal of the deep connection charge; and
- ◆ there is presently no mechanism in Scotland by which generation capacity that has a connection with interruptible access can be commercially compensated for loss of access to the transmission system. Ofgem's consultants considered several possible mechanisms including reducing the output of all generators behind a constraint pro-rata to their output. Difficulties were identified in the practical application of this approach in SHETL's transmission area, particularly in respect of transparency and fairness.

Ofgem's review of SHETL's policy

3.14 Ofgem considers that any interim connection and charging policy of SHETL should be based on the principles outlined above (see paragraphs 3.3-3.11) but modified and developed to take account of specific factors in the north of Scotland including:

- ◆ common ownership of distribution, transmission (including system operation) and generation assets and supply businesses by SSE group;
- ◆ single ownership of most of the generation capacity in SHETL's transmission area by SSEGL;
- ◆ 132kV assets being owned by the transmission business in the north of Scotland (whereas these assets are owned by the distribution businesses in E&W);
- ◆ the net export of electricity from SHETL's transmission area;

- ◆ the radial structure of the transmission network in the north of Scotland (whereas there is a meshed structure for the transmission network in E&W); and
- ◆ the fact that a high proportion of generation comes from renewable generation and there is considerable potential for new renewable generation, in particular wind generation, in the north of Scotland.

3.15 The Utilities Act 2000 provided for a transfer scheme and a licensing scheme whereby SSE's Composite Licence was changed and the transmission and generation businesses were transferred to separate legal companies with separate licences. The licensing scheme created separate licences for each of SSE's distribution, transmission, generation and supply businesses. However, the transmission and generation licensees remain under common ownership by SSE. In addition, SSEGL is the predominant generation owner and operator in SHETL's transmission area and thereby the predominant provider of generation services to SHETL as system operator and the main user of SHETL's transmission system. Any change to SHETL's connection and charging policy needs to take these factors into account, and in particular must demonstrate that all generator parties are being treated on an equal basis.

3.16 Since SHETL's 132kV system in Scotland is classed as transmission, the transmission business would need to recover the cost of 132kV system reinforcement, based on a shallow connection charge policy, within its use of system charges. In addition, since the north of Scotland is a net exporter of electricity, Ofgem would expect the transmission business to recover any additional costs associated with providing transmission capacity to meet increased generation output in the north of Scotland from generators rather than customers or suppliers.

3.17 The radial structure of the transmission network and the potential development of renewable generation in the north of Scotland means that there is a strong likelihood of more than one generation operator seeking connection behind a transmission constraint. Consequently there is greater likelihood that a generator will need to be constrained off as there are fewer alternative routes to market due to the lack of network capacity.

3.18 Ofgem considers that a revised connection and charging policy for new generation should, where appropriate, take account of these factors. The effect of these factors on SHETL's policy for transmission charges, interruptibility of transmission access, the mechanism for interruption and compensation for loss of transmission access is in the

following section which outlines the basis for Ofgem's proposal for SHETL's future connection and charging policy.

Basis of the proposal for SHETL's connection and charging policy

- 3.19 Ofgem considers a connection and charging policy of SHETL's transmission business for new generation should be based on the criteria set out below.

Charges

- 3.20 Ofgem believes that SHETL should charge new generation connecting to the transmission system a shallow connection charge relating to the costs of providing, operating and maintaining the assets necessary to facilitate connection¹⁵. All generation should be charged existing transmission use of system charges for using SHETL's transmission system and in return receive firm access rights.
- 3.21 In the context of the characteristics of SHETL's system, Ofgem considers that the use of system charges for new generation at 132kV and below should reflect the cost of reinforcements to the 132kV system. Consequently new generation will be charged an additional transmission use of system charge to reflect reinforcement costs.
- 3.22 In exceptional circumstances the transmission business might wish to offer a deep connection charge, for instance in connections to the island systems. In such circumstances it would be required to put its case to, and seek the approval of, the Authority prior to doing so.¹⁶

Interruptibility

- 3.23 In the normal course of events, connection offers will be made with non-interruptible (i.e. firm) access to the transmission network. Having paid their use of system charges, generators will be granted firm access to the transmission system. In the event of a constraint arising, SHETL should interrupt generators in a non-discriminatory and cost-effective manner, specifically SHETL should buy back the firm access rights of generators in order to resolve the transmission constraint.

¹⁵ Generation connecting to the distribution system will continue to be charged a deep distribution reinforcement cost. There is a separate review and consultation by Ofgem on connection and charging policy of the distribution businesses for new embedded generation and this policy may be amended following completion of that consultation.

¹⁶ This is consistent with the arrangements of ScottishPower's transmission business.

3.24 However connection offers for interruptible access should be made by the transmission business, at the request of new generation, where there are reasonable grounds for doing so and where completion of a major transmission reinforcement would be needed to enable the new generation to have non-interruptible access.

Mechanism for interruptions

3.25 Ofgem believes that generators who hold firm access rights should only be interrupted if their firm access rights are bought back by SHETL. This could be achieved by the submission of bids by generators behind a constraint to reduce generation. SHETL would then choose the most economic bids able to resolve the transmission constraint (subject to any technical limitations in terms of the effectiveness of given generators in resolving a particular constraint).

3.26 Alternatively, the buy-back of firm access rights could be effected through contractual arrangements between SHETL and generators. Such contracts would specify the level of compensation that generators would receive in the event of curtailment of their access rights. As part of the proposed arrangements Ofgem has approved a contract between SHETL and SSEGL for Peterhead generation station to provide constraint services. This does not remove from the system operator the requirement to seek similar services from other generators in his area.

3.27 SHETL should, consistent with its statutory and licence obligations, interrupt connections with interruptible access behind a constraint in an efficient manner (i.e. the system operator first constrains down generation that incurs least cost to the system operator).

Compensation for loss of transmission access

3.28 Under the interruption mechanisms outlined above, participants would be able to specify the compensation they require for having their firm access rights curtailed. SHETL would then face a choice as to how best to utilise the available bids to reduce generation in order to resolve any constraints that arise. From a participant's perspective, therefore, the proposed arrangements allow them to better manage their risk to the costs of transmission constraints,

3.29 SHETL has indicated that locational signals are an important factor in fulfilling its obligation to manage an economical and efficient network, particularly given the radial

structure of the network in its transmission area. This was supported by the consultant's report (see paragraph 3.11). Ofgem believes the proposed new connection and charging policy will provide appropriate locational signals to all participants including new generators and SHETL.

- 3.30 In addition, in SHETL's transmission area, new generation, under RO(S), will contract to provide renewable energy to suppliers and will need to secure access to the transmission system to fulfil the terms of these contracts for renewable energy. This could be achieved in a number of ways including the new renewable generation forming a bilateral agreement with other generation so that in the event of a constraint the other generation is constrained down instead of it. Since most generation in SHETL's transmission area is owned by SSEGL there is a limited choice of counterparties for the new entrant to form a bilateral contract. If SSEGL sought to exercise any market power within the bilateral agreements and operate its generation in such a manner as to seek to exploit constraints Ofgem would investigate and, if appropriate, take action.

Recovery of costs

- 3.31 The costs incurred by SHETL in buying back access rights should be recovered from all system users through transmission use of system charges

Implementation

- 3.32 Ofgem considers that implementation of the changes outlined above would require the following:
- ◆ a direction under Part II, Condition D8, paragraph 7 setting out the basis on which SSE's transmission business should prepare Charging Statements;
 - ◆ a direction under Part II, Condition D8, paragraph 5(c) regarding information in respect of the transmission system associated with the application of the revised policy; and
 - ◆ a direction under Special Condition L regarding information on costs of constraints, and a direction under Schedule A regarding treatment of constraint costs as an excluded service.

These are discussed further in Chapter 4.

3.33 The proposed changes to SHETL's existing policies are viewed by Ofgem as an interim solution enabling the issues particular to the north of Scotland to be managed until the introduction of BETTA. They should also enable new generation to connect to the system, allow the efficient development and maintenance of SHETL's network and are likely to promote competition. As regards the existing connection offers currently under determination, Ofgem considers that SHETL should make new connection offers consistent with the revised policy.

3.34 SHETL has indicated to Ofgem that it should be able to implement the change in connection and charging policy as proposed by 1 April 2002.

Summary

3.35 Ofgem considers that, by 1 April 2002, SHETL should implement a connection and charging policy in SHETL's transmission area for generation that:

- ◆ applies a shallow connection charge and a new use of system charge for new generation to recover deep network reinforcement costs;
- ◆ applies the existing generation use of system charge to all generators and in return receive firm access rights; and
- ◆ allows the cost of buy-backs to be recovered through generator use of system charges. The means by which this will be taken forward are set out in the next chapter.

4 Proposed direction

Introduction

- 4.1 This chapter sets out the general content of proposed directions from Ofgem that would direct SHETL to change its connection and charging policy.

Direction

Offers of connection

- 4.2 The planning standards require an economic appraisal of reinforcement proposals. This requires comparison of the annuitised cost of network reinforcement and the alternative of the annual opportunity cost or value of loss of access to the transmission network of users with interruptible access.
- 4.3 When the annual opportunity cost or value of loss of access to the transmission network of users with interruptible access exceeds the annuitised cost of network reinforcement, there is an economic case for the reinforcement to take place.

Compensation payments

- 4.4 Compensation payments for any loss of access to the transmission system would be made to users who had paid the relevant use of system charges. Compensation would be paid at prices determined under bilateral contracts or through a buy-back mechanism.

Constraint management

- 4.5 The proposal does not reduce the likelihood of constraints and in advance of a comprehensive system of losses management, SHETL will contract with SSEGL in a way which will manage constraints efficiently. Ofgem has agreed with SSE that they will provide constraint services and has approved a contract between SHETL and SSEGL. Ofgem has also approved an interim constraint agreement for Peterhead for the period 1 April 2002 to the introduction of BETTA.
- 4.6 The contract between SHETL and SSEGL in respect of constraint services does not bestow any firm financial access rights following the introduction of BETTA, neither

does it bestow on SSEGL any firm financial access rights for the period between 1 April 2002 and the introduction of BETTA where Peterhead is constrained off for generation portfolio management purposes.

- 4.7 As part of the proposals SSETL will be required to seek similar constraint contracts with other generators in its area.
- 4.8 As part of the proposals SHETL will be required to provide, on a six monthly basis, information to Ofgem on the exercise of any constraint agreements they may sign.

Use of system and connection charges

- 4.9 New generation would pay connection charges that exclude deep transmission reinforcement of the system and thereby would be shallow.
- 4.10 A new transmission use of system charge would be applied to all new generation connections at or below 132kV. This would reflect the costs of reinforcement of the 132kV system that is economically justified for new generation.¹⁷
- 4.11 All generation would be charged the transmission business's existing generation use of system charge.¹⁸

Implementation

System information

- 4.12 Implementation of the change in policy requires a direction under Part II, Condition D8, paragraph 5(c) of the Electricity Transmission Licence regarding information in respect of the transmission system associated with the application of the revised policy. This may be provided by SHETL in its Seven Year Statement or related statement.

Price controls

- 4.13 Implementation of the change in policy requires a direction under Special Condition L of the Electricity Transmission Licence, regarding information on costs of constraints, a direction under Schedule A regarding treatment of constraint costs as an excluded

¹⁷ The level of this charge would be similar to the existing average entry charge applied to connections made prior to privatisation (ie. about £6 per kW of installed capacity per annum). The level of this charges would be stated in SSE's Charging Statement, and would be subject to the approval of the Authority.

¹⁸ In the north of Scotland, the generation use of system charge is presently about £6 per kW of export capacity.

service, and the information requirements to monitor and assess these charges and related investments. The compensation payments made in year t would be allowed as additional excluded revenue in year $t+1$ and recovered from all generators.

Summary

- 4.14 The above sets out the basis of the direction Ofgem proposes to issue SHETL under the Electricity Transmission Licence in relation to the implementation of the revised connection and charging policy for implementation by 1 April 2002. Ofgem invites comments on these proposals by 22 March 2002.