

**Draft Direction under regulation 6(6) of the
Telecommunications (Interconnection)
Regulations 1997 relating to a dispute
between Energis plc and British
Telecommunications (“BT”) over BT’s
rearrangement charges**

4 December 2002

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Draft Direction under regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 relating to a dispute between Energis plc and British Telecommunications PLC (“BT”) over BT’s rearrangement charges

WHEREAS:

- (A) the Secretary of State for Trade and Industry granted to British Telecommunications on 22 June 1984 a licence (the “BT licence”) under section 7 of the Telecommunications Act 1984 (the “Act”) for the running of telecommunications systems specified in Annex A to that licence;
 - (B) by virtue of section 109 of, and paragraph 20 of Schedule 5 to, the Act the BT licence has effect as if granted to British Telecommunications plc (“BT”);
 - (C) the Secretary of State for Trade and Industry has granted to Energis Communications Ltd (“Energis”) on 24 May 1993, a licence under section 7 of the Act for the running of telecommunications systems specified in that licence;
 - (D) Energis entered into a Standard Interconnect Agreement with BT on 20 June 1997;
 - (E) on 20 December 2001, Energis submitted a written request entitled ‘Statement of Requirements’ (“SoR”) to BT requesting *inter alia* that the existing rearrangement service be split into two distinct services for software rearrangement and physical rearrangement, in order to reflect the difference in costs associated with the two types of rearrangement;
 - (F) on 8 July 2002, BT formally rejected Energis’s SoR and a dispute has arisen;
 - (G) on 30 July 2002, in accordance with the provisions of regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 (the “Regulations”), Energis referred the dispute to the Director General of Telecommunications (the “Director”) for determination of the following four issues, namely that: (i) BT be required to offer to provide both physical and software rearrangement as separate service options; (ii) cost oriented charges are to be applied to physical and software rearrangement services; (iii) actual oriented charges for those separate services be set; and (iv) the software rearrangement charges be applied retrospectively for the period 1 April 2001 to 31 March 2002, on the one hand, and 1 April 2002 onwards, on the other hand;
 - (H) regulation 6(6) of the Regulations provides that where there is a dispute concerning interconnection between organisations, the Director shall, at the request of either party, take steps to resolve the dispute within six months of the date of the request. The direction which the Director makes to resolve the dispute must represent a fair balance between the legitimate interests of the parties, and must be notified to the
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parties in accordance with regulation 8(3). The parties are entitled to a full statement of the reasons on which the direction is based;

- (I) the Director has considered *inter alia* the information provided by the parties and the matters set out in regulation 6(8) of the Regulations. The principal points are summarised in the explanatory memorandum which accompanies, and is published with, this direction;
- (J) the Regulations place upon the Director the general responsibility to encourage and secure adequate interconnection in the interests of all users, exercising his responsibility in a way that provides maximum efficiency and gives the maximum benefit to end-users;
- (K) the Director issued a draft of this direction and the explanatory memorandum which contained the Director's reasons on [...] and responses were invited by [...];
- (L) Non-confidential comments were received from [...] as detailed and discussed in Chapter [...] of the explanatory memorandum which accompanies and is published with this direction. The Director in making this direction has taken these comments into account; and

NOW,

therefore, pursuant to regulation 6(6) of the Regulations, and having considered, inter alia, the views of the parties and those matters set out in regulation 6(8) of the Regulations, the Director hereby makes the following direction to resolve the dispute between BT and Energis:

1. BT is not required to offer physical rearrangement and software rearrangement as separate service options to Energis.
2. BT is not, therefore, required to make any retrospective refunds to Energis, as requested for either of the periods referred to in recital (G) above.
3. Except as otherwise defined in this direction and its recitals:
 - (i) paragraph 4 of the BT licence shall, with the necessary changes, apply to this direction as it applies to the BT licence; and
 - (ii) words or expressions used shall have the same meaning as in the Act or in the BT licence, as appropriate.
4. This direction shall take effect on the day it is published.

HEATHER CLAYTON

DIRECTOR OF INVESTIGATIONS

**a person authorised under paragraph 8 of Schedule 1 to the Telecommunications
Act 1984**

[...] 2002

Chapter 1: Summary

S.1 The Director General of Telecommunications (the “Director”) has issued a draft Direction in accordance with the provisions of regulation 6(6) of the Telecommunications (Interconnection) Regulations 1997 (the “Regulations”) for the resolution of a dispute between Energis Communications Ltd (“Energis”) and British Telecommunications PLC (“BT”). The dispute relates to BT’s rearrangement charges for Intra Building Circuits (“IBCs”).

S.2 Energis referred this dispute to the Director on 30 July 2002. The Director has considered the submissions made by Energis and BT and has issued this draft Direction in respect of the dispute. Comments are requested by 11 January 2003 and will be taken into account in making a final Direction.

S.3 Energis requested that the Director determine that:

- BT be required to offer to provide both physical and software rearrangement as separate service options;
- cost oriented charges are to be applied to both physical and software rearrangement services;
- actual cost oriented charges for these services be set by the Director; and
- the charges be applied retrospectively for the periods 1 April 2001 to 31 March 2002 and 1 April 2002 onwards.

S.4 A summary of the major arguments submitted on this issue by Energis and BT are set out in Chapter 3. Details of the Director’s consideration of these submissions and his conclusions are set out in Chapter 4.

S.5 Having considered the issues raised by this dispute, the Director is of the view that the arguments in favour and against de-averaging are, for the most part, balanced. The cost benefit analysis performed by the Director has, however, shown it likely that the costs of introducing separate physical and software rearrangement services would outweigh the benefits of doing so. In the absence of clear benefits, the Director is of the view that the imposition of additional regulatory requirements is undesirable, particularly where it appears likely that it would lead to higher costs. The Director is therefore minded to conclude that BT should not be obliged to offer separate physical and software rearrangement service options.

S.6 Having considered the facts specific to this dispute and the matters set out in regulation 6(8) of the Regulations, this draft Direction represents, in the opinion of the Director, a fair balance between the interests of the parties in each case, having regard to the Director’s wider duties to promote competition and the development of the telecommunications industry in the UK and to encourage and secure adequate interconnection in the interests of all users in a way that provides maximum economic efficiency and gives the maximum benefit to end users.

Chapter 2: Background and history of the dispute

2.1 Intra-building Circuits are circuits that run within the same exchange building linking a large incoming circuit to the digital switching unit within the exchange¹. Charges for these circuits form part of the Interconnect Specific Basket for the purposes of the Charge Control². Rearrangement of these circuits will be necessary when an operator wishes to alter the actual routing of the circuit within the exchange (physical rearrangement) or the type of service offered over the circuit (software rearrangement).

2.2 Prior to 1998, BT levied separate charges for seven different types of rearrangement. After consultation with the industry, during which BT claims only one operator raised significant concerns, BT proposed the introduction of a single rearrangement charge based on a weighted average of the existing seven charges. This proposal was notified in Network Charge Control Notice (“NCCN”) no. 1 on 17 October 1997 and took effect from 17 January 1998.

2.3 In order to comply with its Charge Control obligations, BT sets a new rearrangement charge each year. Charges for the Interconnect Specific Basket are set in the December of the preceding year (i.e. charges for financial year 2001/02 were set in December 2000). They are based on the cost ceilings and floors available from the prior year’s financial results (i.e. the charge set in December 2000 was based on the 1999/2000 financial accounts). As such, there is some time lag between changes in trends for rearrangements being reflected in price changes. Costs relating to rearrangement activities are captured with costs for IBC Connections and Rentals and are then apportioned to the specific Standard Services on the basis of cost and volume ratios.

2.4 On 20 December 2001, Energis submitted a written request entitled ‘Statement of Requirements’ (“SoR”) to BT requesting that the existing rearrangement service be split into two distinct service options for software rearrangement and physical rearrangement, in order to reflect the difference in costs associated with the two types of rearrangement.

2.5 BT formally rejected Energis’s SoR on 8 July 2002. On 30 July 2002, Energis submitted a request for resolution of the dispute to the Director.

¹ Charges for these circuits can be found in Section B2.02.2 of BT’s Carrier Price List at www.btinterconnect.com/.

² Details of the latest Charge Control can be found in Of tel’s Statement “Proposals for Network Charge and Retail Price Controls from 2001”, published in February 2001.

Chapter 3: Submissions of the parties

Energis

3.1 Energis submitted that evidence from the rearrangement charges for other types of circuits that BT offers suggest that the IBC rearrangement charge does not represent a cost oriented charge for software rearrangement. Energis used the costs of software charges of the System X exchange range to suggest that BT should be charging between £39 and £80 for software rearrangement.

3.2 Energis suggested that the work involved in a software rearrangement consisted of:

- (i) Energis re-datafills circuit;
- (ii) BT re-datafills circuit;
- (iii) Energis takes circuit out of service;
- (iv) BT carry out a testing to ensure that the route has been correctly rearranged; and
- (v) the circuit is brought back into service.

3.3 Energis submitted that a physical rearrangement may involve a separate set of activities under the following headings:

- i) rearrangement of a signalling link set including one route type to a different operator switch connection;
- ii) rearrangement of an additional route type to a different operator switch connection;
- iii) rearrangement of an intra building link to a different switch connection;
- iv) rearrangement of a signalling link set including one route type to a different BT switch connection;
- v) rearrangement of an additional route type to a different BT switch connection;
- vi) rearrangement of an intra building link to a different BT switch connection;
- vii) rearrangement of BT switch modification due to operator bearer change.

These are the same seven services that BT previously averaged out to create the current rearrangement charge (see paragraph 2.2).

3.4 Energis argued that the introduction of circuit specific services³ has led to an increase in the requirement for software rearrangement. When an operator no longer wishes to purchase the specific service from BT, they are left with the option of either ceasing the circuit or rearranging it so that it could be used for an alternative type of traffic.

3.5 Energis was also concerned that BT was over-recovering its costs as a result of the de-averaged charge. As the cap on the Interconnect Specific Basket is set on the basis of

³ Voice and unmetered data services cannot be mixed over the same circuit, neither can traffic owned by two different operators.

the single rearrangement charge, Energis argues that it would not prevent any BT over-recovery due to changes in the split between the different types of rearrangement.

3.6 Energis suggested that the introduction of separate physical and software rearrangement service options should be relatively easy for BT to implement, as the charges had previously been de-averaged. As such, BT should have the capability to charge separately for physical and software rearrangement.

BT

3.7 BT justified levying a single charge for rearrangements on the basis that the policy of averaging separate rearrangement charges had been agreed with industry at the time of the introduction of the Network Charge Control regime in September 1997. The averaged rearrangement charge was introduced, via NCCN 1, on 17 October 1997 and became effective from 17 January 1998. BT expressed concern that Energis's request would lead to Oftel amending an industry-agreed charging structure at the behest of just one operator.

3.8 BT was of the view that by introducing an averaged charge it would simplify the rearrangement charging structure, providing the advantages that:

- (i) it would be easier to understand, control, bill and update;
- (ii) it would require less managerial time in the form of supervision and auditing;
- (iii) it would lead to fewer errors and disputes;
- (iv) it would provide uniformity of charges; and
- (v) it would facilitate entry into the market by removing confusion.

As a result of these advantages, BT argued that its costs would be reduced, leading to efficiency savings that would be passed on to operators in the form of lower charges.

3.9 BT opposes Energis's proposals to apply any de-averaged charges retrospectively on the basis that the averaged charge had previously been agreed with industry and that any retrospection would have implications for the Charge Control.

3.10 BT has estimated that the increased costs of implementing de-averaged rearrangement charges would be between £75,000 and £100,000. These costs relate to one-off cost increases arising from training, contract amendments and process documentation changes and increased costs associated with billing, OSS and operational time.

3.11 Following a request from the Director, BT provided a list of the cost elements that make up a software rearrangement charge and the time taken to perform each component. BT has requested that the time take for each component be treated as confidential but has agreed to the publication of the list of the key activities.

- (i) BT raises order on systems;
 - (ii) confirmation sent to customer;
 - (iii) test dates arranged between BT and customer;
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- (iv) new data loaded, circuit tested and brought into service;
- (v) old data removed.

3.12 The cost elements for a physical rearrangement are the same but additionally include:

- (vi) circuit connected to the network;
 - (vii) new circuit design manually connected;
 - (viii) manual connections removed after testing.
-

Chapter 4: The Director's considerations

4.1 Energis is in dispute with BT concerning rearrangement charges for IBCs. This is an interconnection product. For the purposes of the EC Interconnection Directive (97/33/EC)⁴ (the "ICD"), BT has been determined as having Significant Market Power ("SMP") in the markets for fixed public telephone networks and services, and is therefore required to offer interconnection to operators with Annex II status. Energis is an operator with Annex II status (referred to, in the BT licence, as a Schedule 2 Public Operator).

- 4.2 The Director has been requested to determine the following four questions:
- A) Should BT be required to offer separate physical and software rearrangement services?
 - B) Should BT be required to charge for these services on a cost oriented basis?
 - C) What the appropriate cost oriented charges for these services should be? and
 - D) Should BT be required to apply any de-averaged charges retrospectively?

A) Should BT be required to offer separate physical and software rearrangement services?

4.3 The Director believes that there are a number of broad principles to take into account when considering requests for charges to be de-averaged. These principles are based on a number of factors, including the requirements of the ICD and the Telecommunications (Interconnection) Regulations 1997 (the "Regulations")⁵ and Oftel's general principles of cost recovery⁶. The de-averaging principles which the Director has considered in this dispute are:

- (i) cost causation;
- (ii) cost minimisation;
- (iii) distribution of benefits;
- (iv) effective competition;
- (v) practicality;
- (vi) original reasons for averaging;
- (vii) legitimate expectation.

(i) Cost Causation

4.4 Article 7 of the ICD, on which the Regulations are based, requires that charges for interconnection "*follow the principles of transparency and cost orientation*"⁷. It further

⁴ Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision.

⁵ SI 1997/2931

⁶ These derive from the six principles of cost recovery that the Monopolies and Mergers Commission (now the Competition Commission) adopted in its 1995 enquiry; see the MMC's report entitled *Telephone number portability: a report on a reference under section 13 of the Telecommunications Act 1984*.

⁷ Recital 10 to the ICD's preamble states that: "...whereas organizations with significant market power must be able to demonstrate that their interconnection charges are set on the basis of objective criteria and follow

requires that *“tariffs be sufficiently unbundled, so that the applicant is not required to pay for anything not strictly related to the service requested”*. The latter requirement has been implemented into UK legislation by virtue of provisions such as Condition 47.3 of the BT licence, namely: *“[a]n offer by the Licensee to a Schedule 2 Public Operator pursuant to Condition 45.1 shall not be conditional on the acceptance by such Operator of any other terms and conditions except for terms and conditions which are necessarily incidental to the provision of the Standard Service in question.”*

4.5 Although, generally, services should only be made up of the elements that are necessary for the service in question and operators should only be required to pay for costs that they have caused to be incurred, the nature of interconnection is such that many charges are derived from a set of averaged costs. The requirement in Article 7 of the ICD does not mean that there must be separate interconnection charges for every element that makes up a service bought by operators. To require separate charges for each element would be impractical and lead to an unnecessary and undesirable increase in total costs. It is therefore necessary to consider the nature of the service in question.

4.6 The Director has noted that the work involved in carrying out a physical rearrangement is broadly similar to that involved in carrying out a software rearrangement (see paragraphs 3.11 and 3.12 above), with the physical rearrangement requiring three additional items of work. Typically, operators will require both types of rearrangement when providing services to their customer base. While it would clearly not be appropriate for two very different products to be averaged together, the Director does not consider that software and physical rearrangement services are so different in nature that, *per se*, they should not be averaged together.

4.7 The Network Charge Control requires that BT should set rearrangement charges between the distributed long run incremental cost (“DLRIC”) and the distributed stand alone cost (“DSAC”). On the basis of the information currently available to the Director, there would appear to be some overlap between the cost floors and cost ceilings of separate software and physical rearrangement services. This would mean that, even if required to set de-averaged charges, BT may be able to set the price for physical rearrangement at the same level as that for software rearrangement. The end result of that scenario would see operators facing the same charge for separate physical and software rearrangement services.

4.8 The principle of cost causation will also apply to any additional costs that BT would incur if it were required to de-average the rearrangement charge. BT has estimated that it would cost between £75,000 and £100,000 were it required to de-average the rearrangement charge (see paragraph 3.10), and the Director would expect that these costs be included in the rearrangement charges.

4.9 Given that software rearrangement and physical rearrangement are similar services and that de-averaging would lead to increased costs and the possibility of no price change, the Director believes that the existing rearrangement service is already

the principles of transparency and cost orientation, and are sufficiently unbundled in terms of network and service elements offered;...”

sufficiently unbundled for the purposes of Article 7 of the ICD. The Director is therefore minded to conclude that the cost causation principle does not support de-averaging.

(ii) Cost minimisation

4.10 The Regulations require the Director to exercise his responsibility in a way that provides maximum economic efficiency and gives the maximum benefit to end users when exercising his functions to encourage and secure adequate interconnection in the interests of all users under the Regulations. This includes ensuring that costs are minimised, where possible.

4.11 The Director has therefore considered whether de-averaging the rearrangement charge would lead to an increase in BT's costs, which would be passed on to operators and, ultimately, consumers. The Director has carried out a cost benefit analysis ("CBA") of requiring BT to de-average the rearrangement charge and a summary of the model can be found in the Annex to this document.

4.12 BT has estimated that a requirement to offer separate physical and software rearrangement service options would increase its costs by £75,000 to £100,000. On this basis, even allowing for a range of elasticities and volumes, the costs of de-averaging outweigh the benefits over a payback period in excess of 10 years. The cost benefit model used by the Director suggests that the implementation costs would have to fall to £35,000 before the service breaks even over a five-year payback period. Costs would have to fall substantially below this level for any significant benefit to accrue from de-averaging.

4.13 Although the £75,000 to £100,000 implementation costs are only an estimate, the Director is mindful that BT's actual costs would have to be at least 50% less than the estimate before the two services broke even over five years. Given this and the uncertainties over future volumes and elasticities, the Director is minded to conclude that the cost minimisation principle suggests that BT should not be required to offer separate rearrangement service options.

(iii) Distribution of benefits

4.14 Regulation 6(6) of the Regulations requires that any direction that the Director makes to resolve an interconnection dispute between parties "*shall represent a fair balance between the legitimate interests of both parties*". The result must also be non-discriminatory, in accordance with Article 6 of the ICD.

4.15 BT is required by Condition 69 of its licence to ensure that charges for certain interconnection services, including rearrangements, are cost oriented. The averaged charge for rearrangements should be accurately weighted between volumes of software rearrangement and physical rearrangement. As such, any decision to de-average the rearrangement charge would be likely to be revenue neutral to BT (i.e. the combined revenue from separate software and physical rearrangement service options should equal the revenue from the averaged rearrangement charge). Operators should note that any additional costs incurred by BT in de-averaging the charge would be likely to be passed on to them through an increase in total rearrangement charges.

4.16 Moving from an averaged charge to de-averaged charges could result in benefits to those operators taking software rearrangement and costs to those taking physical rearrangement, though this would depend on the charges set by BT (see paragraph 4.7 above). Given that BT may be able to set charges for separate physical rearrangement and software rearrangement service options at the same level, it is not clear that there is any benefit to be distributed between operators. Any benefits that arise from de-averaging would be further reduced by the increase in total costs that result from de-averaging. The remaining benefits would be distributed in a fair manner to operators taking software rearrangement as they caused fewer costs to be incurred by requesting less work to be done. Given the uncertainties over whether any benefits will accrue from de-averaging, the Director is minded to conclude that the distribution of benefits principle provides no compelling arguments either in favour or against de-averaging.

(iv) Effective Competition

4.17 Regulation 6(8)(j) of the Regulations requires the Director to take into account the need to promote competition. The Director considers that all operators are likely to make use of physical rearrangement and software rearrangement services, though in differing volumes. Whether an operator requires software rearrangement or physical rearrangement will depend on whether it is seeking to alter the routing of the circuit or merely seeking to alter the type of traffic going over the circuit. It is not clear, therefore, that the services are substitutable for one another.

4.18 Any price differential between separate software and physical rearrangement service options is likely to be relatively small. Since IBCs are used to offer a wide range of retail services, the Director does not believe that effective competition between operators would be adversely affected by whether or not BT was required to offer separate rearrangement service options. The Director is minded to conclude that the effective competition principle provides no compelling arguments either in favour or against de-averaging.

(v) Practicality

4.19 When considering whether or not to de-average the rearrangement charge, the Director has taken into consideration whether it is practical or not to do so. In particular, the Director has, pursuant to regulation 6(8)(b) of the Regulations, taken into account regulatory obligations or constraints on any of the parties to the dispute. BT has non-discrimination and universal service obligations and the Director has assessed the potential impact on these obligations when making his decision on whether or not the charge should be de-averaged.

4.20 The Director has also considered whether de-averaging charges will have any adverse impact on the Charge Control, in particular whether de-averaging will make the Charge Control difficult or even impossible to enforce.

4.21 The Director agrees with Energis's assertion that it would not be impractical for BT to offer separate physical and software rearrangement services. BT has previously offered seven separate services so it is reasonable to assume that BT must be capable of

offering two services. The ability of BT to offer separate software and physical rearrangement service options is not in itself a reason to require BT to do so.

4.22 The Director does not believe that whether or not BT is obliged to offer separate rearrangement service options will have an impact on its non-discrimination or universal service obligations. All operators would be able to request the services, whether or not the charges for them are de-averaged. The Director similarly considers that any impact of de-averaging on the Charge Control is likely to be minimal as the two separate rearrangement charges would still have to be included in the Interconnect Specific Basket. Although it would not be impractical to require BT to offer separate rearrangement charges, the Director is minded to conclude that the practicality principle provides no compelling arguments either in favour or against de-averaging.

(vi) Original reasons for averaging

4.23 The Director has also revisited the original reasons for averaging rearrangement charges when considering Energis's determination request and assessed whether these reasons are still relevant or whether the market has changed since the averaged charges were introduced.

4.24 As BT has pointed out in its submission, the averaged rearrangement charge was introduced in 1998 after consultation and agreement with the industry. Energis suggested in its submission that the introduction of circuit specific services had led to an increased requirement for software rearrangement and that as such it was no longer appropriate to average the charges. As well as Energis and BT, the Director has sought informally the views of five other operators that have ordered substantial numbers of rearrangements over the last two years. These operators either expressed support for, or at least sympathy with, Energis's request for de-averaged charges. This would suggest that the whole industry no longer agrees, as a matter of course, with averaged charging for rearrangements.

4.25 The consultation on this draft Direction will provide an opportunity for all other interested parties to formally comment on this matter. Any comments from operators on whether or not they believe BT should be obliged to offer separate physical and software rearrangement service options will be taken into account by the Director in drawing up the final Direction to resolve this dispute.

(vii) Legitimate expectation

4.26 The Director has also considered whether there is a legitimate expectation amongst industry that a specific charge will be de-averaged or remain averaged. This expectation could result from previous statements made by the Director, agreements between BT and any operator or the treatment of similar services.

4.27 The Director does not consider that, in this case, there is any evidence that any operator has had a legitimate expectation that the rearrangement charge will be de-averaged and is minded to conclude that the legitimate expectation principle provides no compelling arguments either in favour or against de-averaging.

Conclusion

4.28 Having used the principles above to assess Energis's determination request, the Director is of the view that, on balance, the arguments against requiring BT to offer separate physical and software rearrangement service options outweigh the arguments in favour of doing so. Most of the principles provide no compelling arguments either in favour or against de-averaging. It appears likely that the economic costs of de-averaging will outweigh the benefits of doing so and that BT may still be able to set the same charge for separate physical and software rearrangement service options, whilst meeting its cost orientation obligations. The Director is, therefore, minded to conclude that BT should not be required to offer de-averaged charges.

B) Should BT be required to charge for these services on a cost oriented basis?

4.29 The requirement in Article 7(2) of the ICD is for BT to show that its charges are cost oriented and for the national regulatory authority (i.e. the Director) to require that charges be amended where they are not cost oriented. Similarly, BT must be able to demonstrate to the satisfaction of the Director that its charges are cost oriented under Condition 69.1 of its licence. As discussed at paragraph 4.7 above, the Director considers that BT should charge for the single rearrangement service on a cost oriented basis. Were he to require BT to offer separate software and physical rearrangement service options, these would also have to be charged for on a cost oriented basis.

C) What are the appropriate cost oriented charges for these services?

4.30 Energis has requested that in addition to requiring that rearrangement charges be cost oriented, the Director determine the actual charges that BT should levy. Given that the Director is minded to reject Energis's request for separate software and physical rearrangement service options, this question is no longer relevant. However, even if the Director were to require BT to offer separate rearrangement service options, he would not be minded to set the specific charges for them.

4.31 The Director considered the evidence submitted by Energis to support its assertion that the software rearrangement charge should be between £39 and £80. Energis's calculations were based on the charges for the System X exchange range and alleged statements from BT about the cost of testing each end of a circuit. BT has denied that the statements in question were made and Energis has no written record of the meeting. The Director has therefore concluded that there is no evidence in support of that specific assertion by Energis.

4.32 The Director similarly has doubts about the relevance of the System X changes cited by Energis. These relate to the cost of a data management amendment required to route traffic across an existing transmission network, such as would be required when a new number block is added. This is a different process to software rearrangement, charges for which relate to the costs of reconfiguring the transmission network. The Director also believes that Energis's breakdown of rearrangement work (see paragraph 3.2 above) does not take into account all the items of work that BT must carry out in performing a software rearrangement.

4.33 Oftel's Network Charge Controls are designed to provide BT with flexibility to set prices for specific services within a given basket, subject to safeguards on appropriate cost floors and ceilings. Separate physical and software rearrangement service options would also have to be included in the Interconnect Specific basket of the Network Charge Control, and so be charged for on a cost oriented basis. As such, the Director does not believe that there would be sufficient reason to set specific cost oriented charges for each service.

D) Should BT be required to apply any de-averaged charges retrospectively?

4.34 Energis has requested that the Director retrospectively apply any de-averaged charges to the period 1 April 2002 onwards as this would have been the period covered had BT not rejected Energis's request for de-averaged charges.

4.35 In addition, Energis argues that the effects of having an averaged rearrangement charge first became evident during the period 1 April 2001 to 31 March 2002 and that any de-averaged charges should therefore be retrospectively applied to this period as well.

4.36 Again, given that the Director is minded to reject Energis's request for separate rearrangement charges, this issue is not relevant. Even if he were to oblige BT to offer separate service options, the Director would not consider it appropriate to retrospectively apply the de-averaged charges to the period 1 April 2001 to 31 March 2002. Energis did not submit a SoR for separate physical and software rearrangement service options until December 2001. This request was not rejected by BT until July 2002 with the result that the parties were not in dispute for the period 1 April 2001 to 31 March 2002. The Director therefore sees no compelling reason put forward by Energis to retrospectively apply charges to this period.

Chapter 5: Consultation and timetable for responses

5.1 The Director's draft Direction is being made available to interested parties, together with the Director's reasons, so that they may have a reasonable opportunity to make representations.

5.2 Please e-mail or send comments in writing to:

Martin Hill
Of tel
50 Ludgate Hill
London
EC4M 7JJ

Telephone: (020) 7634 8829
Fax: (020) 7634 8738
e-mail: martin.hill@oftel.gov.uk

5.3 Comments on this consultation must be sent to Of tel by **10 January 2003**. Of tel does not intend on this occasion to hold any comments-on-comments phase during which observations may be made on the representations made by others. Nevertheless, in the interests of transparency, all non-confidential representations will be published.

5.4 Confidential responses should not be sent via e-mail. Written comments will be made publicly available in Of tel's Research and Intelligence Unit, except where a respondent indicates that a response, or part of it, is confidential. Respondents are therefore asked to separate any confidential material into a clearly marked annex. In the interests of transparency, respondents are asked to avoid confidential markings wherever possible.

5.5 The final direction will be made as soon as possible after the end of the above mentioned consultation period.

Annex

Cost Benefit Analysis – the economic benefits of de-averaging

A.1 When considering whether a previously averaged charge should be de-averaged, it is necessary to evaluate the benefits of doing so in relation to the costs of implementing the de-averaging. One way to do this is to perform a cost-benefit analysis. This can be done by comparing the costs with the overall welfare to society from de-averaging through the use of a simple model, such as that described below.

The model

A.2 The Director has assumed that the demand for retail services (into which rearrangements are an input) can be expressed by the following functional form:

$$q = \alpha e^{-\beta p}$$

where q is the quantity, p is the charge and α and β are parameters.

A.3 The point elasticity is $-\beta p$, calculated as below:

$$\frac{\partial q}{\partial p} \frac{p}{q} = \frac{-\beta \alpha e^{-\beta p} p}{\alpha e^{-\beta p}} = -\beta p$$

Consumer surplus is then q/β , calculated as below:

$$\int_p^{\infty} \alpha e^{-\beta p} dp = \left[-\frac{\alpha e^{-\beta p}}{\beta} \right]_p^{\infty} = 0 + \frac{\alpha e^{-\beta p}}{\beta} = \frac{q}{\beta}$$

A.4 Total welfare or benefit can then be defined by the sum of the consumer surplus and the producer surplus. In the first instance, the total benefit is the sum of the benefits from providing each type of rearrangement at an average charge. In the second instance, total benefit is the sum of the benefits from providing each type of rearrangement at the de-averaged charge. If the net benefits exceed the costs of implementing the de-averaging, a case could be made for de-averaging.

A.5 BT has provided the Director with an estimate of the number of hours required for each of software rearrangement and physical rearrangement and the weighted average that it currently uses to calculate the single rearrangement charge. These weights are the proportion of the number of hours of each type of rearrangement in the average number of hours. Using these weights, it is possible to calculate de-averaged charges for separate physical and software rearrangement options. Doing this reduces the charge for software rearrangements by 15% while increasing the charge for physical rearrangements by 19% from the averaged charge⁸.

⁸ When calculated this way, the producer surplus after de-averaging will be zero as the new charge is set equal to the cost of providing the product.

A.6 The impact on q at the amended charges can be calculated by assuming a range of elasticities for retail services using software and physical rearrangement.

A.7 An operator would decide to rearrange IBCs when the costs of doing so are lower than the cost of ordering a new circuit. When operators pay for rearrangements, they tend to pass on the costs to consumers through the retail price. Since the retail price is made up of a number of costs, of which rearrangement is only a proportion, the impact on retail prices would be smaller than that on wholesale prices.

A.8 An operator, however, typically uses IBCs to provide a variety of services and estimating the impact of de-averaging on all the services and the corresponding retail prices that would be affected is very difficult. A proxy for the retail price is required. The method adopted by the Director is to estimate the average price per minute paid over all fixed calls on the PSTN. This would include local, national, international, NTS, premium rate services, ISDN, DQ services and calls to ISPs and others – for details, please refer to OfTel's market information statistics http://www.oftel.gov.uk/publications/market_info/2002/fixed/). Using the relevant figures for volumes of minutes and revenues for 2001/02, the average retail price per minute works out to about 3ppm.

A.9 In order to estimate the impact of de-averaging on this price, an assumption on the contribution that rearrangement costs make to the retail price is required. With so many different services using rearrangement, this is a difficult exercise. Again a proxy for determining the contribution is required, and the FRIACO service is considered as a suitable proxy. The Director has assumed that there is one rearrangement for every 45 64kbit/s FRIACO circuits (0.67 rearrangements per 2 Mb FRIACO circuits in use), although the actual number may well be lower. Assuming that 8 customers can be served on each circuit (using a contention ratio of 8:1), and assuming a monthly price for retail unmetered access to be £16, this would mean that the cost of rearrangements as a percentage of the retail price is about 0.87%.

A.10 In order to estimate the price change from de-averaging, the Director applied this percentage to the required de-averaged price/cost changes of 85% and 119% for software and physical rearrangement respectively. This provides the percentage price changes to the retail price of 3ppm against which the consumer surplus is to be calculated. These percentage changes are -0.13% in the case of software rearrangement and $+0.16\%$ in the case of physical rearrangement.

A.11 Since the retail price is made up of all types of calls, each of which might have a different responsiveness with regard to the price, there would be a wide range of elasticities associated with the retail price. These elasticities are likely to be lowest for local voice calls (around -0.25 assumed) and highest for Internet calls (around -0.7 assumed). An average elasticity figure that could be assumed for the responsiveness of consumers to the average retail price is -0.45 each for software and physical rearrangement.

A.12 Using the above elasticities and calculating the benefits from de-averaging, the Director estimated the overall benefits to be around £8,500 per year. Assuming constant volumes going forward, and discounting at a rate of 6% (the public sector rate), cumulative benefits can be calculated each year.

A.13 BT has estimated that it would cost £75,000-£100,000 to implement the de-averaging. At these costs, it will take about 12 years before the cumulative benefits can exceed the costs of £75,000. Sensitivities were performed on (a) the elasticities and (b) the percentage contribution of rearrangement charges to the retail price. Against a range of probable values for (a) and (b) above, it does not appear that benefits would exceed costs over a reasonable period of 5 years.
